

# ECONOMIC IMPACT OF THE UNIVERSITY OF PORTSMOUTH

July 2017

A report by BiGGAR Economics



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# 1 EXECUTIVE SUMMARY

In 2015/16 the University of Portsmouth supported around 12,700 UK jobs including approximately:

- 9,300 jobs in the Solent Region; and
- 7,900 in Portsmouth City.

In 2015/16 the University also generated around £1.1 billion gross value added (GVA) to the UK Economy. This included around:

- £624 million in the Solent region; and
- £476 million in Portsmouth City.

This means that in 2015/16 the University accounted for around 9% of the total GVA generated by the City and nearly 7% of all jobs.

It also implies that:

- for each £1 GVA that the University generated as a result of its direct operations, it supported £7 in total benefits throughout the UK; and
- for each person directly employed by the University, it supported 5 jobs somewhere in the UK.

Importantly the jobs supported by the University also tend to be relatively high value. The average GVA of the jobs supported by the University was more than £60,000/year, around 13% higher than the average GVA/job across the City as a whole. This provides strong evidence that the University plays an important role in driving productivity improvements in the local economy.

The University generates impact in several different ways:

- Around £352 million of the total impact generated by the University and more than 5,800 of the total jobs it supported were associated with the University's core activities. This includes those directly employed by the University as well as the impact of expenditure undertaken by the University and its staff.
- Graduates from the University of Portsmouth added a further £420 million value to the UK economy as a result of the skills they learn while studying.
- The University also plays an important role in the local and regional economy by supporting businesses to innovate by providing research and consultancy services, delivering professional training, supporting student placements and industrial studentships and by providing facilities and support to young businesses. Together these activities added £68 million value to the UK economy and supported around 900 jobs.

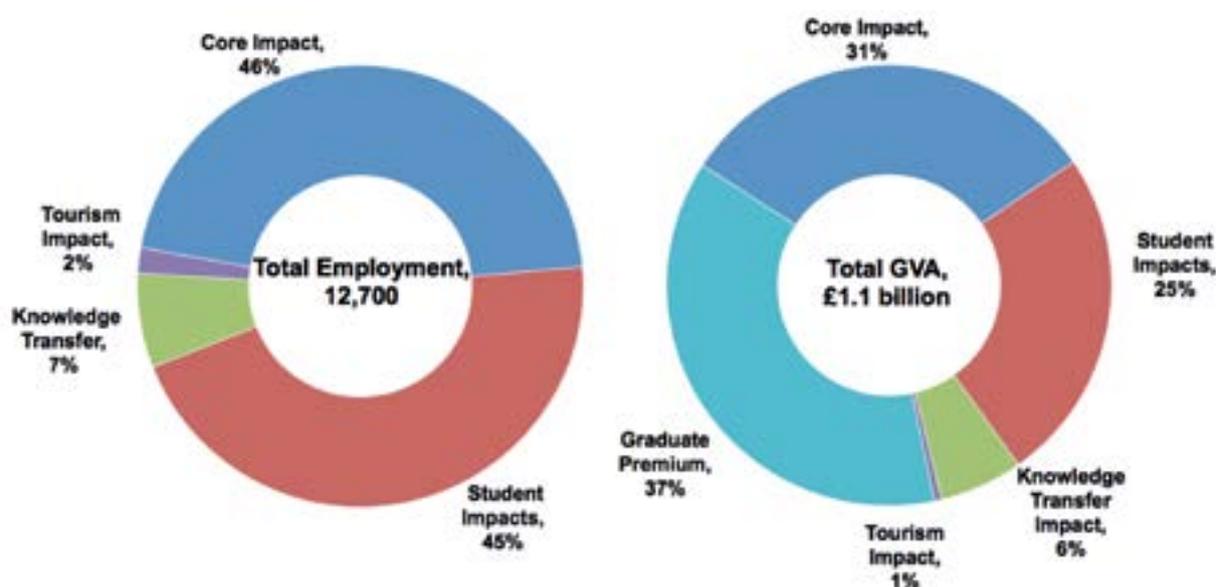
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<sup>1</sup> Throughout this report economic value is expressed in terms of gross value added (GVA), which is a commonly used measure of economic activity. It measures the total value of the output of an organisation less the value of intermediate components of production (i.e. the goods and services used up in the production process).

- Students at the University generated a further £275 million for the UK economy and supported around 5,800 jobs by spending money in the local economy, volunteering for local organisations and working part-time during their studies.
- Overseas students and their visitors spent around £64 million in local businesses. It was estimated that this expenditure supported almost 600 jobs in the local area.
- The University also makes a significant contribution to the local visitor economy, adding an estimated £5.5 million value to the UK economy and supporting more than 230 jobs. By providing additional visitor accommodation in the summer months the University also helps to address capacity issues within the sector and support big events.

Figure 1.1 provides a break-down of the economic impact of the University of Portsmouth across the UK.

Figure 1.1 – Break-down of UK Economic Impact by Source



Source: BiGGAR Economics

## 2 APPROACH, INTRODUCTION & BACKGROUND

This report describes and quantifies the economic benefits of the University of Portsmouth. It examines the importance of the University to the Portsmouth, Solent and UK economies, identifying the ways in which its different activities create impact.

This section describes the general approach taken to the study and provides some background information about the University and the socio-economic context within which it operates.

### 2.1 Approach

The key objective of this study is to describe and, where possible, quantify the economic value generated by the University of Portsmouth.

#### 2.1.1 Sources of Impact

The sources of impact considered are:

- core operations including University of Portsmouth income and employment, the money the university spends on supplies and capital projects and the expenditure of its staff;
- student related impacts including student expenditure, part-time work and volunteering;
- lifetime productivity gains of graduates from the University of Portsmouth;
- innovation support activities including services to industry such as contract research and continuing professional development, knowledge transfer partnerships, student placements and incubators; and
- tourism impacts from friends and family visiting students and staff and people attending conferences, open days and events hosted by the University of Portsmouth.

#### 2.1.2 Measures of Impact

Unless stated otherwise, economic contribution has been reported using two measures:

- gross value added (GVA), which measures the value that an organisation, company or industry adds to the economy through its operations. The report uses the production approach to measuring this contribution, where GVA is equal to the value of production less the value of the inputs used. Typically this is estimated by subtracting non-labour costs from total revenue; and
- employment (jobs), which are headcount jobs unless stated otherwise.

One of the reasons these measures are so widely used is because they provide a convenient way of capturing the entire economic contribution of an organisation in a single number; however, monetary figures fail to capture the full value of many types of activity so this estimate is likely to be an underestimate. For this reason this assessment also highlights various examples of the wider, unquantifiable contributions that the University of Portsmouth generates. The fact that these contributions cannot be quantified does not in any way detract from their value.

### 2.1.3 Study Areas

This report considers the impact of the University in three study areas:

- Portsmouth City – i.e. the area defined by the Portsmouth City Council boundary;
- the Solent region – i.e. the area defined by the Solent LEP area; and
- The UK as a whole.

In each case the impact that occurs in each of the smaller study areas is included within the impact of the larger study areas, i.e. the impact in the Portsmouth City study area is included as part of the impact in the Solent region and the impact in the Solent region is included as part of the total UK impact.

### 2.1.4 Use of Evidence and Assumptions

In general the approach taken throughout this report was to use the best evidence available. Where possible this means that source data was obtained directly from the University of Portsmouth. Where this was not possible an appropriate assumption was made based on BiGGAR Economics previous experience of comparable institutions elsewhere in the UK. Where it was necessary to make such an assumption this is clearly highlighted in the text.

Where it was necessary to make such an assumption and a range of potential values were available the approach taken was to err on the side of caution and adopt an assumption toward the lower end of the range. This approach is in accordance with best practice and should provide some confidence to readers that the impacts reported will, if anything, tend to under rather than over estimate the total contribution of the University.

## 2.2 University of Portsmouth Profile

The University of Portsmouth can trace its history back to 1869 and the formation of the Portsmouth and Gosport School of Science and the Arts,<sup>2</sup> set up to train engineers and skilled workmen for the city docks and the Royal Navy dockyard. As the city developed after the Second World War, it was renamed Portsmouth Polytechnic in the 1960s and grew to be one of the largest such institutions in the UK. University status was granted in 1992, allowing it to validate its own degrees.

Today, the University has an income of £221.1 million, 2,500 fte staff and a population of almost 24,000 students, of whom almost a fifth are international students. The University is also one of the top 100 universities in the world under 50 years old. In the 2016 National Student Survey, the University of Portsmouth achieved a student satisfaction rate of 89%. These results are the tenth year running that Portsmouth students have rated the University above the English national average.

The University's vision, outlined in a recent strategy,<sup>3</sup> is to, 'deliver transformational education, research and innovation'.

<sup>2</sup> University of Portsmouth website <http://www.port.ac.uk/why-portsmouth/the-institution/> accessed in May 2017

<sup>3</sup> University of Portsmouth, University Strategy 2015/16 to 2020/21

## 2.3 Local Economic Context

The economy of Portsmouth is closely tied to the City's historic association with the shipbuilding industry. In recent years however the traditional dominance of the shipbuilding industry has begun to give way to sectors such as advanced manufacturing and creative industries.

Portsmouth's Economic Strategy<sup>4</sup> sets out how the City can capitalise on this change in order to become a leading edge economy, with a flourishing cultural life, high quality of living and range of economic opportunities. In order to achieve this vision, the city has two key themes:

- to support economic growth, innovation and enterprise; and
- to enhance the competitiveness of the city.

The strategy makes clear that this will require Portsmouth to leverage the opportunities presented by the knowledge economy, particularly supporting business and encouraging key sectors like advanced manufacturing and the creative industries, building stronger links between education and enterprise to attract more graduates, improving educational attainment and raising aspirations, and developing the visitor economy.

### 2.3.1 Employment by Industry

At the time of writing the most significant sectors of employment in Portsmouth were health and social work, and retail, which accounted for 14.8% and 14.7% of employment in the City respectively. Health and social work accounted for a greater proportion of employment than the Solent Region and national averages (13.5% and 13.0% respectively). The retail sector meanwhile accounted for a smaller proportion of employment than in the Solent region (16.6%) and Great Britain<sup>5</sup> (15.7%).

Employment in manufacturing represented 9.0% of the total, a comparatively higher figure than in the Solent Region (8.4%) and Great Britain (8.2%). This is due to the presence of a cluster of advanced manufacturing and engineering companies in the defence, automotive, and aerospace sectors. These include Airbus Defence and Space, BAE Systems Maritime, Pall Europe, Formaplex and H&S Aviation.

Additionally, information and communication is responsible for 6.9% of employment, greater than 5.1% in the Solent Region and 4.2% in Great Britain, which is largely attributable to the presence of IBM, which has offices at North Harbour.

Portsmouth in particular, and the Solent Region in general, is however under-represented in the professional, scientific and technical services sector, which is responsible for 8.5% of employment in Great Britain, compared to 4.3% and 6.6% in Portsmouth and the Solent Region respectively.

Education is a relatively important sector of employment, responsible for 10.8% of employment in 2015 (about 11,000 jobs), compared to 10.3% of employment in the Solent Region and 8.9% in the Great Britain.

<sup>4</sup> Portsmouth City Council (2010), Shaping the future of Portsmouth

<sup>5</sup> Data is not available at the UK level

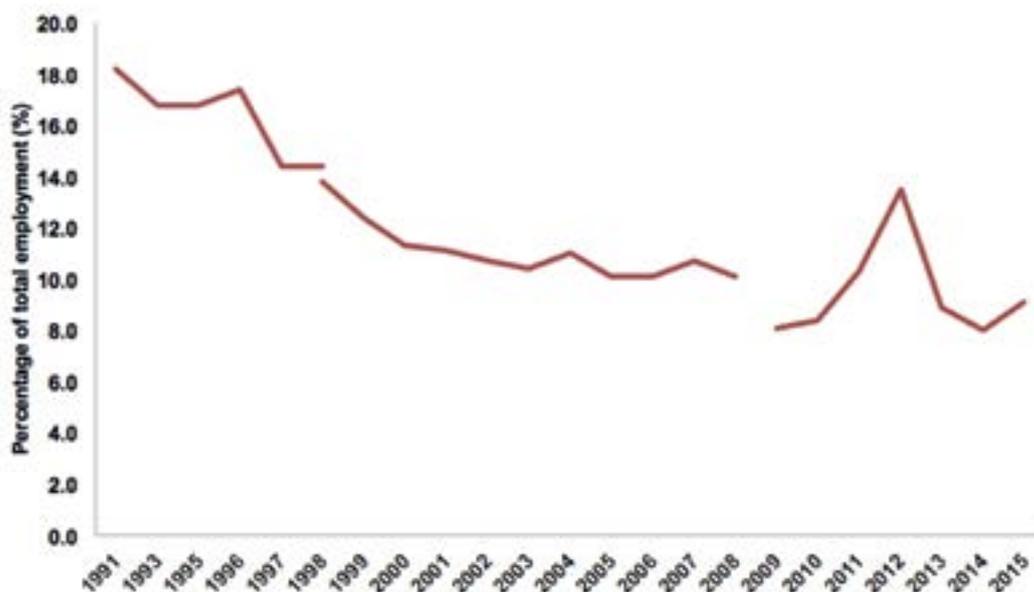
Table 2.1 – Employment by Industry, 2015

	Portsmouth City	Solent Region	Great Britain
Manufacturing	9.0%	8.4%	8.2%
Construction	3.5%	4.5%	4.5%
Wholesale and retail trade	14.7%	16.6%	15.7%
Accommodation and food services activities	8.2%	7.7%	7.1%
Information and communication	6.9%	5.1%	4.2%
Professional, scientific and technical activities	4.3%	6.6%	8.5%
Administrative and support service activities	8.3%	8.0%	8.7%
Public administration and defence	6.4%	4.2%	4.3%
Education	10.8%	10.3%	8.9%
Human health and social work activities	14.8%	13.5%	13.0%

Source: ONS (2016), Business Register and Employment Survey, 2015 and Portsmouth City Council

Since 1991, when the best comparable data was available<sup>6</sup> the proportion of employment accounted for by manufacturing has decreased by half from over 18.0% to about 9.0% in 2015. This is largely as a result of mechanization and automation in manufacturing and the reduction in shipbuilding in the City.

Figure 2.1– Manufacturing Employment in Portsmouth, 1991-2015



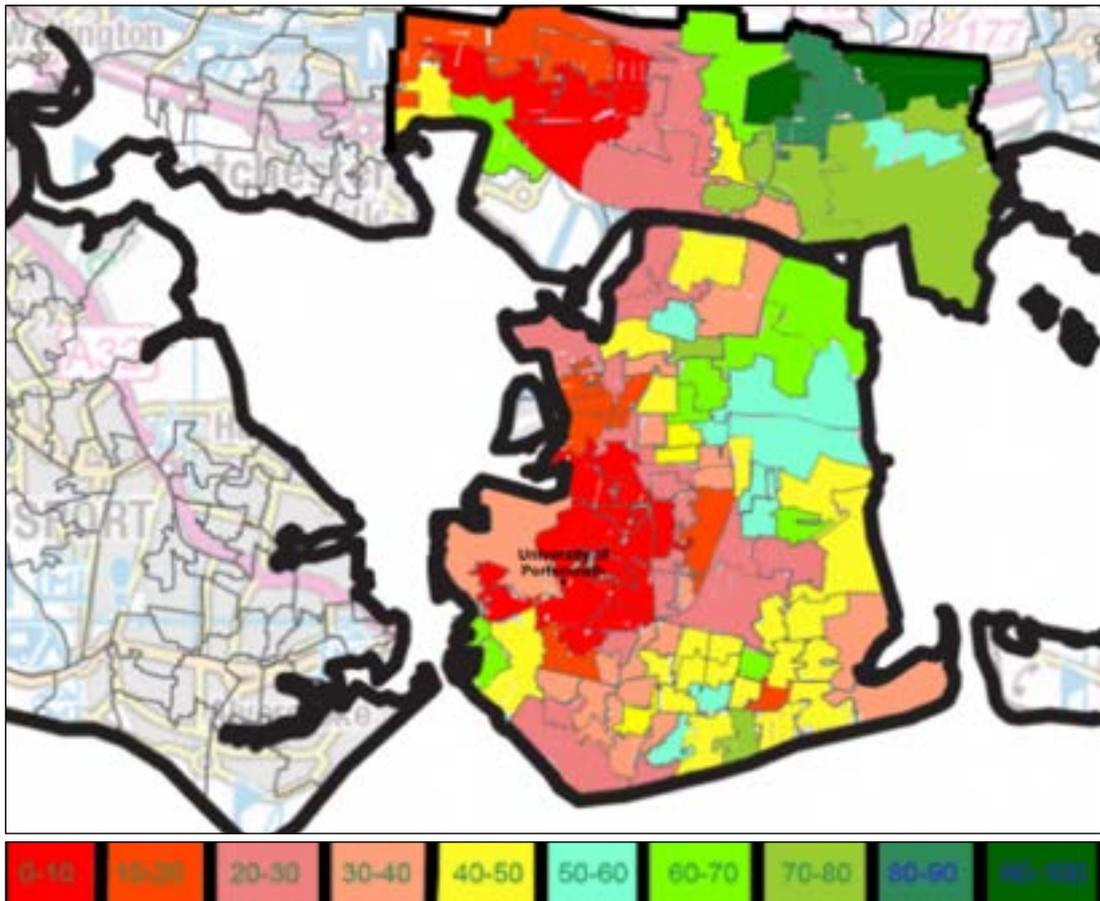
Source: ONS, Annual Employment Survey 1991-98, Annual Business Inquiry 1998-2008, Business Register and Employment Survey 2009-15

<sup>6</sup> As can be seen in Figure 2.1 the measures and manufacturing change slightly in 1998 and 2009

### 2.3.2 Deprivation

According to the Index of Multiple Deprivation, which considers a variety of indices such as income, employment opportunities and education, the Portsmouth Local Authority has 16 of the 10% most deprived areas in England. These constitute 12.8% of the city's 125 small areas, which means that Portsmouth has a 28% higher level of the most acute deprivation compared to England as a whole. These areas are largely concentrated in the west of the city, in the area surrounding the University's main buildings and campus.

Figure 2.2 – Deprivation in Portsmouth



Source: ONS (2015), Index of Multiple Deprivation 2015<sup>7</sup>

Furthermore, over one year the median resident of Portsmouth earns over £1,700 less than other residents in the Solent Region, and more than £2,000 less than the median UK worker. This is in contrast to the annual pay of those who work in Portsmouth, where the median workplace pay is about £2,500 higher than the resident median pay, and above the UK and Solent Region levels.<sup>8</sup>

Table 2.2 – Median annual pay

	Portsmouth City	Solent Region	UK
Median annual pay (residents)	26,062	27,781	28,213
Median annual pay (workplace)	28,663	28,415	28,213

Source: ONS (2017), Annual Survey of hours and earnings

<sup>7</sup> The Star and Crescent (2016), Portsmouth is a Divided City, but Not in the Way You Think

<sup>8</sup> Due to the small sample size Portsmouth data is slightly less reliable than UK level data, although the same broad findings hold true.

### 2.3.3 Population

The population of Portsmouth is much younger than the population of the Solent LEP and the UK in general. The population aged 0-15, at 18.6%, is between the level at the Solent Region, at 17.8%, and the UK, at 18.8%, but the proportion of those aged 65+ (14.0%) is much lower than in the Solent Region (18.5%) and the UK (17.8%).

It also has a significantly higher working age population, with 67.4% of the population aged 16-64 compared to 63.7% in the Solent Region and 63.3% at the UK level. This bigger working age population is largely driven by a higher proportion of people aged 16-24 (17.1% in Portsmouth compared to 13.5% and 11.3% in the Solent Region and the UK respectively).<sup>9</sup> If the proportion of young people in Portsmouth were the same as in the Solent Region, there would be 7,500 fewer people aged 16-24.

Additionally, Portsmouth has a higher proportion of the population aged 25-34 (15.8%, compared to 13.5%) and a lower proportion aged 50-64 (15.7%, compared to 18.0% and 18.5% in the Solent Region and the UK).

Table 2.3 – Population of Study Areas

	Portsmouth City	Solent Region	UK
Total population	211,800	1,052,100	65,110,000
Population aged 0-15	18.6%	17.8%	18.8%
Population aged 16-64	67.4%	63.7%	63.3%
Aged 16-24	17.1%	13.5%	11.3%
Aged 25-34	15.8%	13.5%	13.5%
Aged 35-49	18.8%	18.7%	20.0%
Aged 50-64	15.7%	18.0%	18.5%
Population aged 65+	14.0%	18.5%	17.8%

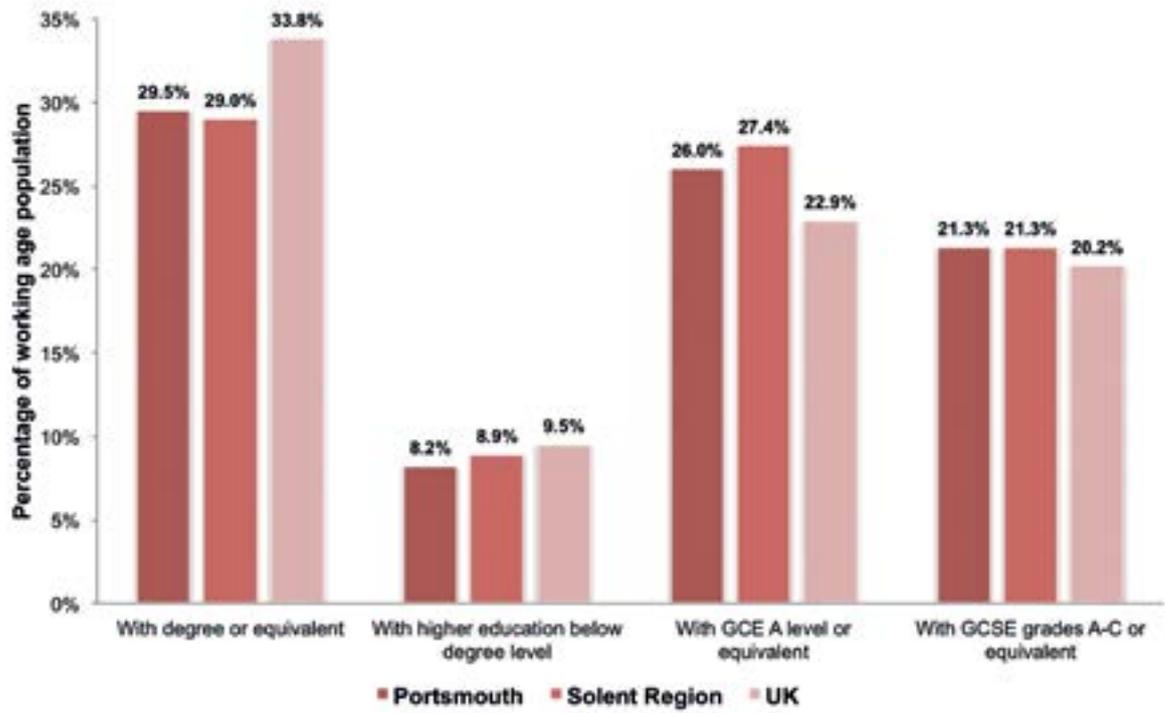
Source: ONS (2016), Mid-Year Population Estimates, 2015

### 2.3.4 Education

As can be seen from Figure 2.3, Portsmouth and the Solent Region both have a lower proportion of residents with degree level education than the UK average.

<sup>9</sup> The statistics presented in this section include students resident in Portsmouth, the majority of whom are likely to fall within the 16-24 age bracket.

Figure 2.3 – Highest level of educational attainment level by population, 2016



Source: ONS (2017), Annual Population Survey 2016

### 3 CORE OPERATIONAL IMPACTS

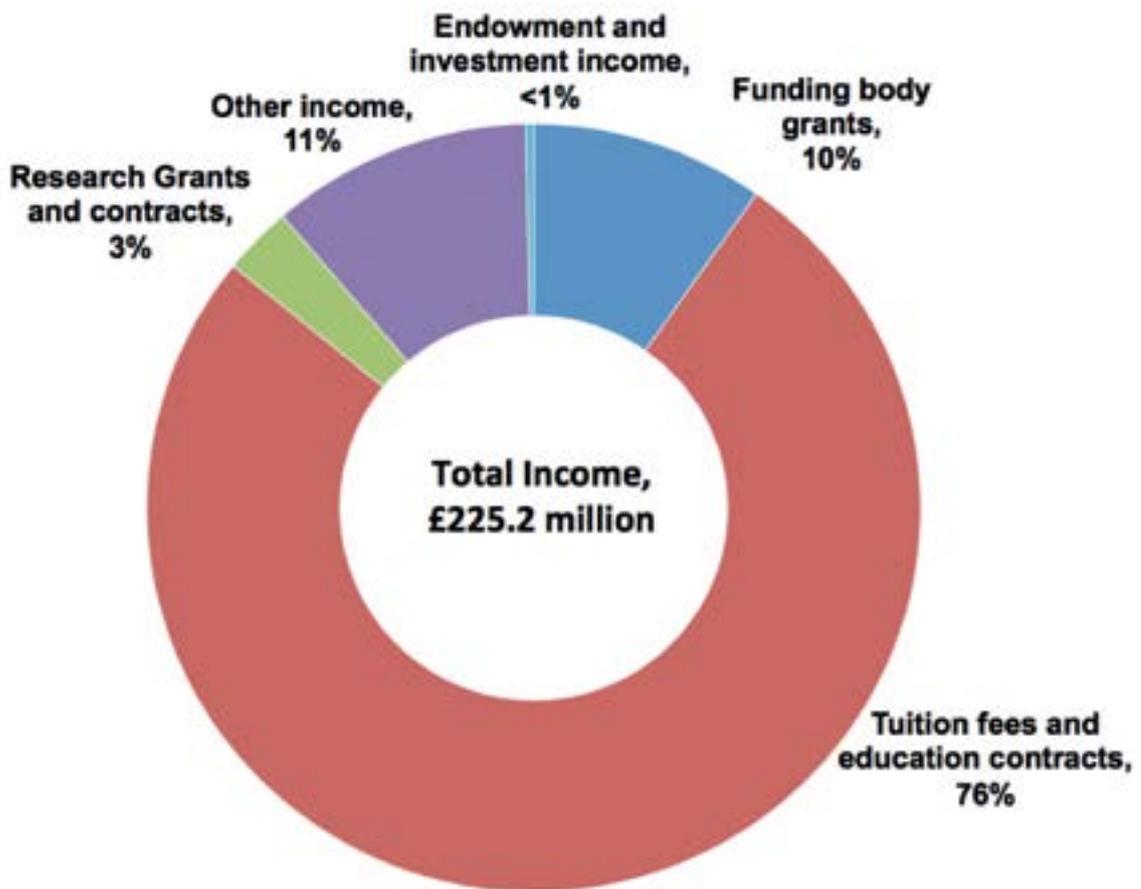
This section describes the impacts generated by the daily operations of the University of Portsmouth. The core impacts include:

- the direct impact of the University of Portsmouth;
- impacts associated with University of Portsmouth’s supply chain;
- impacts generated by staff expenditure; and
- impacts associated with the capital expenditure of the University of Portsmouth.

#### 3.1 Direct Impact

The direct GVA of an institution can be estimated by subtracting expenditure on bought in goods and services from total income. In 2015/16, the University of Portsmouth generated £221.1 million of income, over three quarters of which came from tuition fees and education contracts.

Figure 3.1 – University of Portsmouth Income by Source



Source: BiGGAR Economics

By subtracting this from the total income of the University it was estimated that the direct GVA impact of the University of Portsmouth was £159.4 million GVA in 2015/16. In 2015/16 the University of Portsmouth also directly employed 2,542 full time equivalent (fte) staff.

Table 3.1 – Direct Impact

	Portsmouth City	Solent Region	UK
GVA (£m)	159.4	159.4	159.4
Employment	2,542	2,542	2,542

Source: BiGGAR Economics

## 3.2 Supplier Impact

The £65.8 million that the University of Portsmouth spent on supplies in 2015/16 also had an impact on the economy. The economic impact of this expenditure depends on the industry in which it was spent so to estimate this impact economic ratios and multipliers appropriate to the sectors in which the expenditure occurred were applied to the level of expenditure in each industry.

To attribute this impact by study area it was necessary to consider the location of University of Portsmouth's suppliers. It was assumed that 89% of supplies were purchased from within the UK, of which 24% were from Solent Region and 7% from Portsmouth City. This assumption was based on BiGGAR Economics work with other universities elsewhere in the UK that are similar to the University of Portsmouth.

In this way it was estimated that the University of Portsmouth generated £46.9 million GVA and supported 797 jobs in the UK through its expenditure on goods and services. Of this, £9.8 million GVA and 170 jobs were in Solent Region.

Table 3.2 – Supplier Impact

	Portsmouth City	Solent Region	UK
GVA (£m)	2.5	9.8	46.9
Employment	44	170	797

Source: BiGGAR Economics

## 3.3 Staff Expenditure

Staff employed by University of Portsmouth have an impact on the wider economy by spending their wages. In 2015/16, University of Portsmouth employed 4,129 members of staff (2,542 fte) who were paid a total of £148.1 million.

Where staff spend their wages will depend to a large extent on where they live and will therefore vary for staff living in each study area. The assumptions made about the spending profile of staff residing in each area are given in Table 3.3. This shows, for example that staff living in Portsmouth City were assumed to spend 93% of their salaries in the UK, of which 74% would be in Solent Region. Of this, 33% could be spent in Portsmouth City.<sup>10</sup>

<sup>10</sup> Further detail about the basis of these assumptions is provided in section 10.3.1 of the methodological appendix.

Table 3.3 – Location of Staff Spending by Residence

Where staff spend their salaries			
	Portsmouth City	Solent Region	UK
Portsmouth City	33%	74%	93%
Elsewhere in Solent Region	5%	74%	93%
Elsewhere in the UK	5%	20%	93%

Source: BiGGAR Economics

It was therefore estimated that by spending their wages staff at the University of Portsmouth contributed £118.4 million GVA and 2,095 jobs to the UK economy.

Table 3.4 – Staff Expenditure Impact

	Portsmouth City	Solent Region	UK
GVA (£m)	12.6	55.2	118.4
Employment	236	1,008	2,095

Source: BiGGAR Economics

### 3.4 Capital Investment

Over the last five years the University of Portsmouth has spent an average of £16.8 million per year on campus developments. Over the next five years there are major capital projects planned, so the average capital investment per year over the period 2011/12 to 2020/21 will increase to £39.1 million.

Capital projects generate wealth and support employment within the construction sector. The scale of major capital investment projects means that expenditure often varies substantially from year to year. This means that expenditure in any one financial year may not reflect the true impact of this activity over time and therefore average capital spend over 10 years was used in order to estimate this impact.

Some of this expenditure will be on land and buildings and will therefore be equivalent to additional turnover in the construction sector but some of this spend is likely to be on plant, machinery and equipment and equivalent to additional turnover in the manufacturing sector. Data provided by the University of Portsmouth indicates that 31% of its capital expenditure was on machinery and equipment.

By applying appropriate economic ratios and multipliers to this expenditure it was estimated that capital investment generated £27.0 million GVA for the UK economy in 2015/16 and supported 378 jobs. The impact in each study area was estimated based on the location of contractors and is presented below.

Table 3.5 – Capital Investment Impact

	Portsmouth City	Solent Region	UK
GVA (£m)	1.3	5.3	27.0
Employment	19	75	378

Source: BiGGAR Economics

### 3.5 Summary Operational Impacts

In 2015/16 the total operational impact of the University of Portsmouth amounted to £351.8 million GVA and 2,812 jobs across the UK. This is summarised in Table 3.6

Table 3.6 – Total Core Impact 2015/16

	Portsmouth City	Solent Region	Great Britain
GVA (£m)			
Direct	159.4	159.4	159.4
Supplier	2.5	9.8	46.9
Staff Spending	12.6	55.2	118.4
Capital Spending	1.3	5.3	27.0
<b>Total GVA</b>	<b>175.8</b>	<b>229.7</b>	<b>351.7</b>
Employment			
Direct	2,542	2,542	2,542
Supplier	44	170	797
Staff Spending	236	1,008	2,095
Capital Spending	19	75	378
<b>Total Employment</b>	<b>2,841</b>	<b>3,795</b>	<b>5,812</b>

Source: BiGGAR Economics

## 4 STUDENT IMPACTS

Students at the University of Portsmouth contribute to the economy by:

- spending money on goods and services;
- working part-time while studying; and
- undertaking unpaid voluntary work for charities and third sector organisations.

### 4.1 Student Population

In 2015/16 there were 19,561 full time students studying within the University of Portsmouth, the vast majority of whom were undergraduates.

Table 4.1 – Full Time Student Population by Level of Study

Level	Number
Undergraduate	16,826
Post Graduate	2,735
Total	19,561

Source: BiGGAR Economics

### 4.2 Student Expenditure

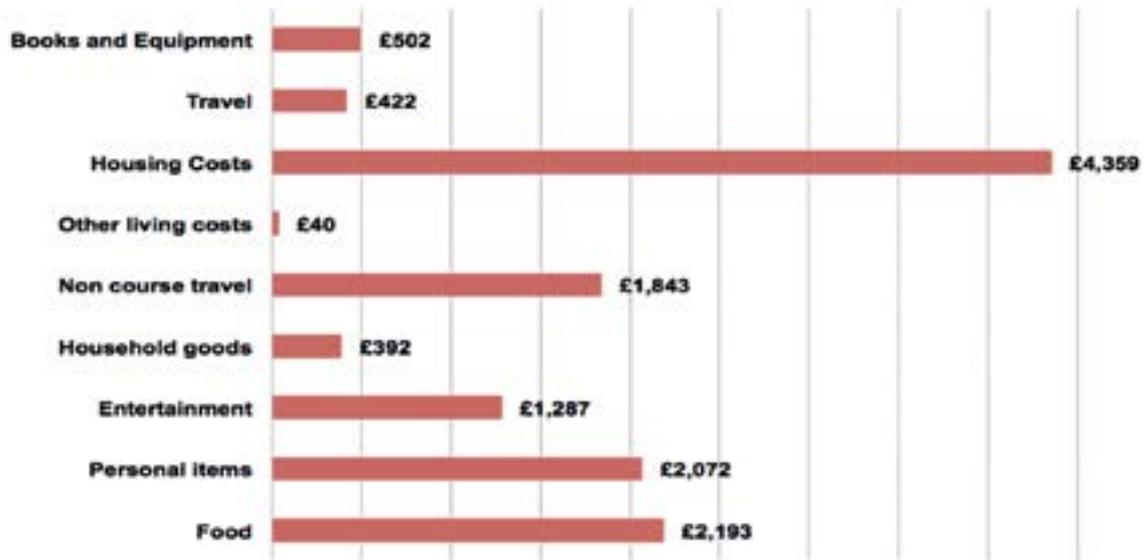
Students at the University of Portsmouth have an impact on the economy through their spending in the same way that staff generate impact by spending their wages. The money that students spend generates economic activity in the businesses that they purchase goods and services from.

The basis for estimating this impact was a study by the Department of Business Innovation & Skills.<sup>11</sup> As the survey was undertaken in 2011/12 the results were adjusted for inflation and are summarised in the figure below. Based on this, it was estimated that students<sup>12</sup> living in Solent Region spent an average of £13,111 per year.

<sup>11</sup> Department for Business Innovation & Skills, Student Income and Expenditure Survey 2011/12, June 2013

<sup>12</sup> This figure is an average for all students including under-graduates and post-graduates

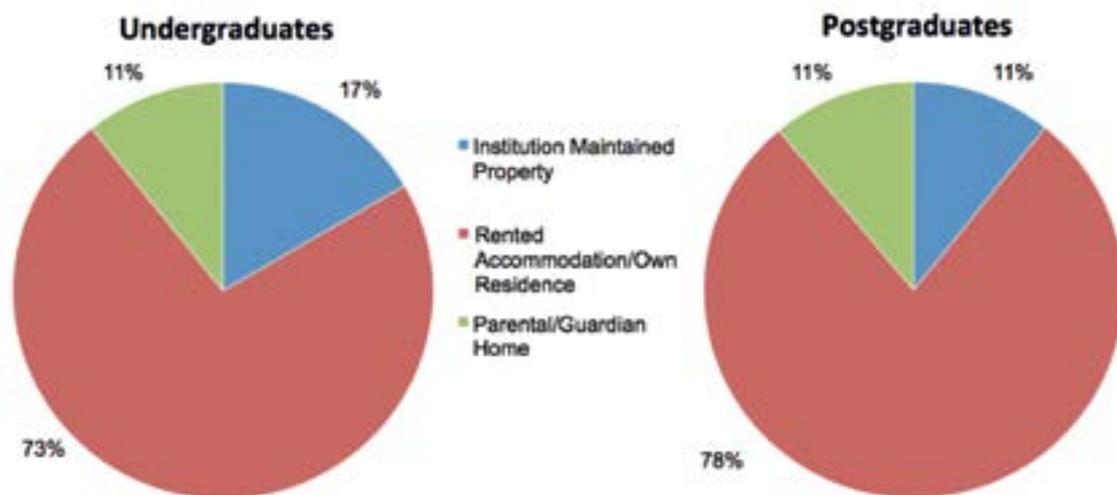
Figure 4.1 – Student Expenditure by Category



Source: Business Innovation & Skills, Student Income and Expenditure Survey 2011/12

The type of accommodation a student lives in influences how much they spend. For example, students living in their parental or guardian home are unlikely to spend money on housing and are likely to spend significantly less on food and household goods. Furthermore, the accommodation expenditure of students in institution maintained properties has already been included in the direct income of the University and so was excluded here. A breakdown of students by accommodation type is given in Figure 4.2.

Figure 4.2 – Student Residences by Type and Level of Study



Source: University of Portsmouth

After these adjustments it was estimated that full-time students at University of Portsmouth spent £254.8 million in 2015/16. Not all of this spending will translate directly into GVA, so it was necessary to apply economic ratios and multipliers appropriate to the sectors in which the expenditure took place. In this way it was estimated that this expenditure supported a total of 3,114 jobs and £198.5 million GVA in the UK. The value of this impact in each study area was estimated based on where students live and is presented in Table 4.2 below.

Table 4.2 – Student Expenditure Impact

	Portsmouth City	Solent Region	UK
GVA (£m)	121.2	144.5	198.5
Employment	2,080	2,393	3,114

Source: BiGGAR Economics

### 4.3 Part-Time Work

University of Portsmouth students also have an impact on the economy if they undertake part-time employment for local businesses. The University supports this impact by advertising around 1,800 local part-time jobs each year.

National student survey data indicates that 33% of University of Portsmouth students are likely to be in employment.<sup>13</sup> A nationwide student survey undertaken in 2010 found that, on average, students work 14.2 hours a week.<sup>14</sup> Not all this employment is necessarily additional to the local economy because some of the jobs undertaken by students might otherwise have been undertaken by other residents of Portsmouth.

In order to take these factors into account it was necessary to make assumptions about the proportion of student labour that is additional to the local labour market – that is the proportion of part-time jobs done by students that would not otherwise be filled by local residents. The additionality of student labour is likely to be inversely proportional to local youth unemployment. This is because, where levels of youth unemployment are relatively high, it is reasonable to infer that the jobs filled provided by students would otherwise be filled by unemployed local residents. To ensure only student labour additional to the local labour market was counted the total amount of student labour provided by students was therefore adjusted using evidence about the local youth unemployment rate from the Annual Population Survey published by the ONS.

Data from the University also shows that 807 students are employed directly by the institution itself. These students were excluded here to avoid double counting because the impact of University employees was estimated in Chapter 3.

Appropriate economic ratios and multipliers were applied, based on the industries in which students usually work. In this way it was estimated that University of Portsmouth students undertaking part-time employment during the academic year contributed £76.4 million GVA and 2,652 jobs in the UK.

Table 4.3 – Student Part-time Work Impact

	Portsmouth City	Solent Region	UK
GVA (£m)	59.0	64.5	76.4
Employment	2,190	2,339	2,652

Source: BiGGAR Economics

<sup>13</sup> Source: Labour Force Survey (2016), Table A06: Educational status, economic activity & inactivity of young people: People aged 16 to 24 by educational status, economic activity and inactivity (not seasonally adjusted)

<sup>14</sup> National Union of Students (2010), Still in the Red

## 4.4 Volunteering

In addition to undertaking paid employment, students at the University of Portsmouth also make a socio-economic contribution by undertaking voluntary work.

A study published by the Chartered Institute of Personnel Development (CIPD) for example found that those who took part in employer supported volunteering had greater levels of community awareness, increased communication skills, and increased confidence.<sup>15</sup> An internal study undertaken by the University of Portsmouth drew similar conclusions, reporting that students who undertook volunteering were more likely than non-volunteering students to be in work or further study 6 months after graduation and more likely to be in professional employment.

In 2015/16, 1,332 students at University of Portsmouth undertook volunteering activity (385 sport related and 947 non sporting). A survey undertaken by the National Union of Students in 2014 found that, on average, students volunteer 44 hours annually. The total hours that students spend on voluntary activities throughout the year was then converted into full-time equivalent employees.

The value to organisations of the hours volunteered was estimated by assuming that the average output of a student's voluntary work is equivalent to the average GVA per employee in the UK charity sector (£14,752).<sup>16</sup> This GVA per employee was then applied to the number of full time equivalent employees estimated in order to estimate the GVA impact. Multiplier effects were then captured by applying appropriate GVA and employment multipliers to the direct impact.

It was assumed that students volunteered in the area they live in and the impact in each study area was attributed accordingly. In this way it was estimated that volunteering by students at University of Portsmouth contributed £0.4 million GVA in the UK. Wider benefits of the student volunteering are considered in Section 5.6.

Table 4.4 – Student Volunteering Impact

	Portsmouth City	Solent Region	UK
GVA (£m)	0.4	0.4	0.4
Employment	-	-	-

Source: BiGGAR Economics

## 4.5 Student Impacts Summary

Through their spending, part-time work and volunteering students at the University of Portsmouth supported £275.3 million GVA and 5,766 jobs in the UK. Of this, £209.5 million GVA and 4,733 jobs were estimated to be in the Solent Region and £180.6 million GVA and 4,270 jobs in Portsmouth City.

<sup>15</sup> CIPD (2015), On the brink of a game-changer

<sup>16</sup> NCV0, UK Civil Society Almanac 2016

Table 4.5 – Total Student Impact 2015/16

	Portsmouth City	Solent Region	UK
GVA (£m)			
Student Spending	121.2	144.5	198.5
Student Part-time Work	59.0	64.5	76.4
Student Volunteering	0.4	0.4	0.4
<b>Total GVA</b>	<b>180.6</b>	<b>209.5</b>	<b>275.3</b>
Employment			
Student Spending	2,080	2,393	3,114
Student Part-time Work	2,190	2,339	2,652
Student Volunteering	-	-	-
<b>Total Employment</b>	<b>4,270</b>	<b>4,732</b>	<b>5,766</b>

Source: BiGGAR Economics

## 4.6 Overseas Students

Of the 19,561 full-time students at the University of Portsmouth, 1,050 are EU students and 3,379 are international students, from outside the EU. This is equal to 22.6% of full-time students being from overseas.

Table 4.6 – Full-time Students by Nationality

	Value
EU Students	1,050
International Students	3,379
Total Overseas Students	4,429
Total Students	19,561

Source: BiGGAR Economics

Consultations undertaken to support this study confirm that overseas students contribute to the University, and the local community in a variety of ways. One of the examples provided by those consulted included students volunteering their language skills to help children in local schools. Others consulted highlighted the benefits that overseas students bring by helping to broaden the perspectives of UK-based students at the University.

Overseas students also generate an economic benefit. The economic impact of overseas students includes:

- student spending;
- student volunteering;
- student placements (this impact is described in Section 6.2.2); and
- personal visits to students (this impact is described in Section 8.2).

These impacts, and associated spending, were estimated by either applying the proportion of students who are from overseas to the economic impact (for example with student placements), or, as overseas students are more likely to be in postgraduate education and remain on campus for longer, by applying the proportion of time that students spend on campus to the economic impact (for example, with student spending).

In this way it was estimated that overseas students generated £33.8 million GVA and 588 jobs in Portsmouth City, £40.6 million GVA and 681 jobs in the Solent Region, and £56.8 million GVA and 901 jobs in the UK. Student spending and visits from friends and relatives (or VFR) supported by overseas students supported expenditure in Portsmouth City of £64.0 million. This is shown in Table 4.7. The impacts in Table 4.7 are included in, and are not additional to, the impacts quantified in Table 4.5.

Table 4.7 – Overseas Students Impact 2015/16

	Portsmouth City	Solent Region	UK
Spending (£m)			
Student Spending	63.5	65.2	68.6
VFR spending	0.5	0.5	0.5
Total Spending	64.0	65.7	69.1
GVA (£m)			
Student Spending	32.6	38.9	53.4
Student Volunteering	0.1	0.1	0.1
Student Placement	0.9	1.3	2.9
Personal visits	0.3	0.4	0.5
<b>Total GVA</b>	<b>33.9</b>	<b>40.7</b>	<b>56.9</b>
Employment			
Student Spending	560	644	838
Student Placements	13	19	43
Personal visits	16	17	20
<b>Total Jobs</b>	<b>589</b>	<b>680</b>	<b>901</b>

Source: BiGGAR Economics

## 5 LOCAL ECONOMIC BENEFITS

Universities have the potential to play a strong part in the economic, social and cultural development of the cities to which they belong. The University of Portsmouth's commitment to supporting local economic development is set out in its strategic plan for 2015-20, which describes how the University intends to play a significant role in supporting important city and regional partnerships and contribute to local economic and social development.

Consultations undertaken with University staff and external stakeholders suggests that the University is fulfilling this objective in a variety of ways. It supports business development and innovation, attracts young people to the City, promotes internationalisation (by attracting students, businesses and research collaborations) and delivers major infrastructure projects that drive urban regeneration and renewal. This chapter considers this contribution in more detail.

### 5.1 Local Spending and Investment

With a turnover of £221 million and around 2,550 fte staff the University of Portsmouth is a substantial business in its own right, even before the wider impacts of its activity are considered. One way of illustrating this is to consider the number of jobs directly provided by the University. As shown in Table 5.1 the University is currently the fourth largest employer in the city after the Royal Navy, the Portsmouth NHS Trust and the City Council.

Table 5.1 – Major Employers in Portsmouth

Company/Organisation	Approximate Number of Employees
Royal Navy	11,000
Portsmouth NHS Hospitals Trust	6,300
Portsmouth City Council	3,600
University of Portsmouth	2,550
BAE systems	1,600
Airbus Defence Space	1,100
Pall Europe Ltd.	760
Affinion International	600
Babcock	500
GKN Aerospace Services Ltd.	200-500
Lead Forensics	420
The Car Finance Company	400
Market Makers	350
Wightlink Ltd.	250
Colas Ltd.	200

Source: Various including Portsmouth City Council Economic Growth Team, individual company websites, list of major employers published by Hampshire County Council and the Business Magazine (2017), the Solent 250

What is not apparent from the table above is how the relative importance of the University as a major employer has increased over time as a result of significant reductions in the activity by other major employers. In recent years Portsmouth has been affected by job losses on a number of occasions. In 2014 for example the decision was made to end ship building in the City.<sup>17</sup> Historically ship building has been one of the most important employers in the City. Over the same period IBM, reduced its staff complement from around 3000 to around 100.<sup>18</sup> In August 2016 more than 300 job losses were announced<sup>19</sup> when it emerged that the hard drive manufacturer Xyratex intended to shut its base in Havant, which is close to Portsmouth.

Another way of illustrating the importance of the University to the local area is to consider the amount of money that the University, its staff, students and visitors spend in the City. Table 5.2 summarises the value of this expenditure. It shows that the University together with its staff, students and visitors spent a total of around £259 million in the local economy in 2015/16. The economic impact of this expenditure, including the multiplier effects that arise as this money is re-spent elsewhere in the economy, are considered elsewhere in this report.

Table 5.2 – University of Portsmouth and Associated Expenditure in Portsmouth

Type of Expenditure	Value
Supplies	4.6
Capital projects	1.2
Staff	8.3
Students	235.8
Visitors	9.3
<b>Total</b>	<b>259.2</b>

Source: BiGGAR Economics estimates based on data provided by the University of Portsmouth

While the financial benefits of this expenditure to local businesses are easy to quantify, what is more difficult to capture are the wider implications of this for the local environment. With more than 19,550 students and around 2,550 staff the University is the focal point for the daily lives of more than 22,000 people. In 2015 Portsmouth was home to a permanent population of around 212,000 people implying that the University represents around 10% of the city's entire population during term-time. This concentration of activity has a major impact on the character of Portsmouth city centre.

Consultation with local stakeholders for example suggests that expenditure by University staff and students makes a major contribution to the retail sector in Portsmouth city centre and plays a key role in maintaining the viability of Portsmouth's street markets. Students also make an important contribution to Portsmouth's cultural offering. They do this both by stimulating demand for pubs, restaurants and entertainment venues and by providing a flexible part-time labour force for these types of businesses. They also make an important contribution to Portsmouth's vibrant arts scene, both as artists and consumers. Performances by students from the University are for example an important part of the programme at the New Theatre Royal, one of Portsmouth's foremost arts venues.

<sup>17</sup> BBC (August 2014), BAE Systems ends shipbuilding in Portsmouth

<sup>18</sup> Consultation with Portsmouth City Council

<sup>19</sup> The News (13th July 2016), Job losses hit 324 as technology firm shuts in Havant

The presence of these people has spill-over benefits for the whole community by helping to improve quality of life in the area. It also has wider economic benefits because cities with high quality of life find it easier to attract and retain highly skilled workers, which in turn makes them more attractive to potential investors.

## 5.2 Civic Engagement

The scale of the University of Portsmouth's operations, particularly in relation to the size of the City means that it is well placed to play an influential role in the civic leadership of the City.

In recent years for example the University has adopted a proactive approach to identifying and leading a number of projects that have the potential to generate significant benefits for the local and regional economy. The time and resources required to secure and then manage such projects means that there are generally not many organisations within a given locality with the capacity to undertake this role. The presence of the University as a partner in such projects is therefore particularly welcome.

The University is also an active contributor to various strategic initiatives designed to improve the economic performance of Portsmouth. Consultation with the City Council for example confirms that it was instrumental in helping to bring "Entrepreneurial Spark" (a prominent entrepreneurial enablement programme) to Portsmouth and has also been an active supporter of Portsmouth City Council's efforts to attract inward investment to the City.

Consultation with the City Council confirm that the University also has a close strategic relationship with the City Council in regards to urban planning and makes an important contribution to realising the objectives of the City's regeneration strategy (see Section 5.4).

Perhaps one of the best illustrations of how the civic leadership demonstrated by the University has generated benefits for Portsmouth in recent years relates to the recent establishment of the University Technical College. A case study of this project is provided below.

### Figure 5.1 – University Technical College Portsmouth

In September 2017 a new University Technical College (UTC) will be opened in Portsmouth to provide local young people the opportunity to specialise in technical subjects that are directly relevant to the needs of local employers.

UTCs are government-funded schools that offer 14-19 year olds the opportunity to specialise in technical education alongside general education. They teach technical and scientific subjects in a new way and are designed to promote a more integrated approach to practical and academic learning. A distinguishing feature of UTCs is the involvement of employers in the delivery of the curriculum, especially through mentoring, work placements, support for teachers and project opportunities for pupils.

The decision to develop a UTC in Portsmouth was the result of a successful bid led by the University of Portsmouth, the Royal Navy and Portsmouth City Council. The rationale behind the project was to provide opportunities for young people in Portsmouth to undertake engineering courses that will equip them with the skills required by local employers. By providing skills specifically tailored for the needs of the local labour market the UTC is expected not only to enable young people to improve their own future life chances but also to play an important role in supporting the development of important sectors of the regional economy.

Source: BiGGAR Economics based on information provided by the University of Portsmouth

### 5.3 Contribution to Local and Regional Workforce Skills

One of the most obvious contributions that the University of Portsmouth makes to the local and regional economy is by providing a steady stream of skilled graduates for the local labour market. Importantly the University places a strong emphasis on providing training and education that meets the needs of important sectors of the local and regional economy. It does this by fostering close relationships with important local employers such as the Royal Navy (Figure 7 2) and by taking steps to ensure that its curriculum reflects the structure of the local economy.

The University plays an important role in meeting the skills needs of this sector by providing a steady stream of engineering graduates. In 2015/16 alone around 450 students graduated from the University with engineering degrees.

The University also supports various initiatives designed to address some of the more bespoke training needs of this important sector. For example, in 2016 the University acquired ASTA Technology Ltd., which trains technicians to build electronic components vital to the success of space missions. The School is one of just seven in the world that are accredited by the European Space Agency so its acquisition represents a significant addition to the University's capacity to meet the engineering skills needs of this important sector.

### 5.4 Regeneration

In recent years the presence of the University and the investment that it has helped to attract has played an important role in stimulating regeneration in the City. The University contributes directly through the development and regeneration of physical infrastructure, such as the proposed University Sports Centre, and the Eldon Building, which acts as the centre of the University's creative campus, with dedicated workshops and studios for artists, and exhibition stages, supporting the creative industries.

Over the past few years growing demand for student accommodation in Portsmouth has also helped to attract interest from a number of commercial student accommodation developers. For example, in 2014 Unite Students, the UK's leading student accommodation developer acquired a major site in Portsmouth city centre from Portsmouth City Council. Following an investment of around £42 million<sup>20</sup> the site has now been developed into accommodation for more than 800 students

The University of Portsmouth has also made an impact on the city's cultural assets through a £16 million redevelopment of the New Theatre Royal in 2014.<sup>21</sup> The building was damaged in a fire in 1972, which left the theatre extremely limited in terms of what it could perform. The University's intervention allowed the construction of a new back-stage area that significantly increased the theatre's production capacity, and seating capacity from 500 to around 700.

Cultural venues such as this provide physical infrastructure, which is both an asset in its own right and a key enabler of other cultural assets, supporting artists and practitioners, organisations and festivals. Investment in culture (for economic, social and cultural benefit) cannot be sustained unless there is also investment in physical infrastructure.

<sup>20</sup> UK Construction online (8th September 2014), Green light for £42 million Portsmouth student accommodation development.

<sup>21</sup> Design Curian (June 2013), ISG to redevelop new Theatre Royal in Portsmouth

## 5.5 Support for Local Services

By increasing the attractiveness and vibrancy of the local area the University can make it easier to attract high-skilled workers in key areas, such as nursing and dentistry, to Portsmouth. The University also strengthens the fabric of the local community by directly supporting services that may not otherwise be available.

For example, the University provides dental services through the University of Portsmouth Dental Academy, a state of the art training facility developed in partnership by the University, King's College London and the NHS. Teams of dental students from King's College London and dental therapy/nurse students from the University of Portsmouth's offer a full range of services free of charge to local residents, under the supervision of a qualified dental professional.

This is an important service because the UK currently faces a significant shortfall of dentists and the local area in particular has been traditionally underserved. The Dental Academy counteracts this effect by increasing provision, but also through research and outreach with the aim of reducing the incidence of poor oral health, for example through the Brush Up programme in schools.

At the time of writing the University had also recently introduced a new programme for training nurses as well as a new optometry course, with associated Optometry Bay. These courses were introduced to help combat a shortage of nurses and eye care specialists in the south of England. The first students were admitted in early 2017.

The University's School of Law students also provide free and impartial legal advice to the community through its legal clinics, which are overseen by a qualified solicitor and manager from the Citizens Advice Bureau manager. The subjects covered at these clinics include debt and money problems; benefits and tax credits; housing problems; and employment. Particularly complex enquiries are referred to specialists.

In addition to these services, students at the University can also take part in a Practical Lawyer Unit, where they have the opportunity either to work in one of University's legal clinics, or to work with one of their private and third-sector partners, such as the British Red Cross, Portsmouth Mediation Service, and Portsmouth Citizens Advice Bureau.

## 5.6 Widening Access and Improving Educational Attainment

Portsmouth City has very low levels of progression to higher education (HE) compared to other local authorities in England and the University of Portsmouth is set in one of the City's most deprived areas, as described in Section 2.3.2. In the most recent year, the percentage of students from Portsmouth who enter HE by age 19 was 23%, significantly lower than the national average of 37%. Furthermore, just 12% of pupils who receive free school meals will progress to HE, compared to the national average of 22%.<sup>22</sup>

This is in part due to relatively low school attainment in Portsmouth: 52.6% of pupils in Portsmouth achieve 5 or more GCSEs at A\*-C including Maths and English, compared to 57.7% in the state-funded sector. This places Portsmouth in the bottom 25 Local Authorities out of 151 across England.<sup>23</sup>

<sup>22</sup> Department for Education (2016), Widening participation in higher education: 2016

<sup>23</sup> Department for Education (2017), Revised GCSE and Equivalent Results in England

As such, the University has the stated goal of:

*“Raising expectations and creating ladders of opportunity for people our region to take part in higher education”<sup>24</sup>*

The University has collaborated with several FE colleges in and around Portsmouth to improve access and education, for example awarding degrees in partnership. In addition to building closer links with nearby FE institutions, this enables people to progress academically when personal circumstances may require more flexibility or geographical distance may make attending the University more difficult, such as at Eastleigh College.

Another one of the ways the University is achieving these aims is by harnessing the volunteering capacity of its students. The Reading Scheme is one of the University’s longest established schemes. It involves student volunteers spending an hour a week with groups of three or four children aged between two and six to help them with their reading skills. The scheme operates across 12 primary schools in the local area and in 2015/16 more than 100 students took part. Consultations undertaken to support this study suggest that the scheme also often acts as a gateway for students to engage in further volunteering activity, with students frequently starting off volunteering on the reading scheme before volunteering in other lessons, such as drama, arts and numeracy.

Schemes such as these are important for pupils not only for improving their educational attainment but also for increasing aspiration. The University also provides presentations on the application process, demystifying areas such as fees and UCAS points.

Similar themes are evident in schemes such as STEMNET Hampshire, where students become STEMNET Ambassadors, delivering presentations to local secondary schools with the aim of inspiring children to undertake further study in STEM subjects and consider a STEM career path. The Code Club, which partners with STEMNET, is another scheme aimed at improving educational attainment, this time improving coding skills in primary schools.

Schemes like these are important for raising the aspirations of young people from low-participation neighbourhoods, improving their life chances and increasing social mobility. Social mobility in the UK is lower than in most other developed countries, and this can significantly hamper economic performance by making it more difficult for young people from poorer backgrounds to achieve their full potential.<sup>25</sup>

Furthermore, the University is encouraging more female students to take part in traditionally male-dominated STEM subjects, as discussed in Figure 5.2, which is a case study of the Future Technologies Centre. The University also supports women in business through its Female Entrepreneur Network, which allows budding entrepreneurs to hear real female success stories.

<sup>24</sup> University of Portsmouth (2015), University Strategy: 2015-2020

<sup>25</sup> Blanden, J. (2009), How Much Can We Learn from International Comparisons of Intergenerational Mobility?, Centre for the Economics of Education Discussion Paper III

## Figure 5.2 - Future Technologies Centre

At the end of 2014 the University of Portsmouth secured £5 million of funding from HEFCE to help establish a new Future Technologies Centre.<sup>26</sup> Further investment by the University and the Local Economic Partnership (LEP) has resulted in the development of an £11 million project<sup>27</sup> that aims to:

- to increase the diversity of STEM candidates to include more women; and
- to boost the provision of STEM education.

The University aims to achieve the first of these goals by using the FTC as a showcase for modern 21st Century engineering, demonstrating to diverse groups of young people that the stereotypical image of engineering as macho and dirty no longer applies. This will be achieved by highlighting the wide variety of roles in engineering which the University supports, such as medical technologists, applied physicists and sports equipment designers, which are not typically viewed as engineering. This will be augmented by highlighting the creative, people-based approach to problem-solving typically employed in these areas.

Other activities of the University, such as launching digitally-based engagement programmes for girls, engaging with younger children and teachers to encourage STEM participation, and enhancing existing STEM outreach programmes, will also help to address the gender imbalance in STEM. The University aims to increase the proportion of Technology students who are female from 13%, as of 2013, to 30% in 2030.

The FTC will help to address the shortage of STEM graduates in the local area and across the UK by educating an additional 250 STEM students, who will be supported by a curriculum designed to encourage creativity and problem-solving. This will incorporate industrial placements and applied projects with employers. More part-time and CPD opportunities will also be developed.

Source: University of Portsmouth

## 5.7 Summary

The University of Portsmouth acts as the central focus point for more than 20,000 people, and is the fourth biggest employer in the city, directly employing more than 2,500 people.

Spending related to the University, such as the spending of students and staff, amounts to an estimated £259 million, which creates employment and economic activity in restaurants, cafes and the creative industries, adding colour and depth to the areas around the University, some of the most deprived in the country.

In turn, this vibrancy is important in attracting young professionals and families, as well as key professions such as nurses and teachers, creating a virtuous cycle. The University also contributes to providing services directly to the City, whether this is through the Dental Academy, its legal clinics or Optometry Bay, to an area that has traditionally suffered shortages in such services.

The University has also attracted new investment to the City and played an important role in bridging skills gaps in important industries and organisation such as the Royal Navy. The University has attempted to tackle systemic problems of low attainment and limited access to Higher Education through schemes that increase aspirations, and help to remove barriers to entry.

<sup>26</sup> UoP News (December 2014), £5m grant for Future Technologies Centre

<sup>27</sup> University of Portsmouth website: <http://www.port.ac.uk/realising-the-vision/major-change-projects/future-technology-centre/>  
Accessed in May 2017

## 6 INNOVATION SUPPORT

As well as supporting the local economy through its efforts to promote diversity and widen access, the University also supports economic activity through its industry-focused research and collaborative work with businesses. This activity includes:

- services to industry provided through commercial services such as consultancy, contract research, and facilities and equipment hire;
- workforce knowledge transfer, including services such as continued professional development (CPD), student placements and Knowledge Transfer Partnerships (KTPs);
- commercialisation activity such as licensing intellectual property developed at the University to external organisations; and
- business incubation services provided to support the growth of young businesses; and

This section assesses the economic value of each of these types of activity.

### 6.1 Services to Industry

The University of Portsmouth provides a variety of services to businesses both in the local area and wider region and elsewhere in the UK.

#### 6.1.1 Commercial Business Services

The University of Portsmouth generates economic activity through its work with businesses in areas such as consultancy, contract research and facilities hire. The income associated with this activity, which equalled £3.5 million in 2015/16, and the location of businesses is presented in Table 6.1.

Table 6.1 – Income from Service to Industry

	Portsmouth City	Solent Region	UK
Consultancy Income (£m)			<0.1
Contract Research Income (£m)			0.7
Facilities Hire Income (£m)			2.7
<b>Total (£m)</b>			<b>3.5</b>

Source: University of Portsmouth

It is reasonable to assume that businesses and other organisations that invest in this type of activity only do so because they expected the projects to generate positive returns. Detailed information about the level of these returns is not available for University of Portsmouth clients; however, the findings of evaluations of relevant schemes elsewhere suggests that a conservative estimate of these returns could be of the order of 360%. (For further details please see the methodological appendix.) The knowledge transfer activity of the University of Portsmouth was therefore estimated by applying this multiplier to the income from knowledge transfer activities in 2015/16. The employment impact was estimated by dividing the direct GVA impact by GVA/employee in relevant sectors and indirect effects were captured by applying appropriate economic multipliers.

In this way it was estimated that business services delivered by the University of Portsmouth in 2015/16 might be expected to generate £18.7 million GVA and support 259 jobs in the UK.

Table 6.2 – Services for Industry Impact

	Portsmouth City	Solent Region	UK
GVA (£m)	6.6	8.0	18.7
Employment	90	110	259

Source: BiGGAR Economics

This section has focused specifically on commercial research services that the University provides for businesses. The reason for this is that this type of research is generally undertaken to address a specific business challenge or opportunity and is therefore likely to generate benefits in the short to medium term. (This can be contrasted with collaborative research, which tends to focus on more fundamental research and therefore generates outputs that are further from market and take much longer to realise.)

It is however important to highlight that in 2015/16 the University also received around £0.3 million from Innovate UK to support collaborative R&D with industry. Although this funding is provided by the Government, it is provided specifically to fund projects with industry and is therefore similar to the type of commercial research income considered above. For this reason the impact presented in the table above should be considered conservative.

Not all collaboration between the University and external organisations will necessary generate additional private sector revenues or jobs. Much of the University's work is with public sector or charitable organisations, and this too can have notable benefits, either through the more efficient and cost-effective use of public resources, or through improved services for users. This is illustrated by the Forensics Innovation Centre, described in Figure 6.1.

Figure 6.1 - Forensics Innovation Centre

The Forensics Innovation Centre is a joint initiative between the University of Portsmouth and Hampshire Constabulary that enables police to work alongside academics and students to help detect and reduce crime. The Centre, which opened in 2015, was the first of its kind anywhere in the UK and represents a particularly innovative approach to knowledge exchange.

The origins of the Forensics Innovation Centre date back several years to the development of informal ties between the Institute of Criminal Justice Studies (ICJS) and Hampshire Constabulary. The relationship grew out of the realisation that engagement between academic forensic research and real life police work could bring tangible benefits for both partners.

In order to realise these benefits arrangements were made for forensics students studying at the University to undertake work placements with Hampshire Constabulary. The placements provided an opportunity for students to apply what they had learned in the class-room to real life (low-risk) police work.

This arrangement proved mutually beneficial, helping students to enhance their employability by gaining meaningful work experience and enabling Hampshire Constabulary to develop a strong evidence base for decisions. The success of the relationship ultimately led to Hampshire Constabulary's decision to relocate its entire cyber crime investigation team to a specially designed forensics centre located at the heart of the Portsmouth campus. The new Centre now provides a permanent base for around 30 police staff (bringing highly skilled jobs to the local area).

The new Centre has generated substantial benefits for both partners. Hampshire Constabulary has benefited from having direct access to the latest advances in forensic science research and from being able to draw on the skills and expertise of students and staff based at the Centre. The arrangement has also delivered substantial financial savings by providing the Force with a modern fit-for-purpose facility and enabling it to avoid the expense that would have been involved in refurbishing out-dated police estate.

*"The Forensic Innovation Centre has delivered real benefits for both partners. We have gained modern fit-for-purpose estate and direct access to research resources while the University has improved the employability of its students and enhanced its performance on employer engagement."*

Terry Lowe, Director of Development – Hampshire Constabulary

The new Centre has also delivered substantial benefits for the University and its students. Students undertaking forensics studies at the University now have the opportunity to take a one year internship with Hampshire Constabulary as part of their course, giving them the opportunity to apply their skills to real-life police work and enhance their future employability. In turn this has helped to increase demand for forensics courses offered by the University.

These benefits were recognised in 2015 when the Forensics Innovation Centre won the Times Higher Education Award for Outstanding Employer Engagement Initiative.

## 6.2 Workforce Knowledge Transfer

Various different mechanisms are used to achieve this including:

- continuing professional development (CPD) training for businesses and organisations that wish to up-skill their workforces and professionals who want to develop or enhance their work related skills; and
- student placements designed to help students gain industry relevant experience by applying what they have learned while studying to the benefit of their host organisation; and

- Knowledge Transfer Partnerships, which embed a sponsored student in a company, where they focus on a specific problem for the employer as well as gaining skills.

This section describes and, where possible, quantifies the economic benefits associated with these activities.

### 6.2.1 Continuing Professional Development

The aim of Continuing Professional Development (CPD) is to help individuals to enhance their professional skills and ultimately to improve the value they are able to generate for their employer. The starting point for assessing the economic value of CPD was the amount of income that the University of Portsmouth receives from delivering these courses.

In 2015/16 the University generated £7.9 million from delivering 282 CPD courses for businesses, non-commercial enterprises and individuals.<sup>28</sup> Staff and students based at the University generated 14% of this activity, which has already been counted in the University's core impact and was thus excluded. Over 33% of this knowledge transfer was delivered for learners within Portsmouth City, and a further 8% was delivered for learners elsewhere in the Solent Region. In total, 70% of this activity was for UK learners and 30% of this activity was delivered for learners from outside the UK, which provides a good illustration of the international reach of the University's knowledge exchange activity.

The economic impact of this activity was then estimated by applying the same multiplier used in section 6.1 to the total value of income, and adjusting for each study area (further discussion of the logic underpinning this approach is provided in section 10.4.2). In this way it was estimated that CPD delivered by the University of Portsmouth in 2015/16 might be expected to generate £26.1 million GVA for the UK economy and support 144 jobs. This impact is summarised in Table 6.3.

Table 6.3 – CPD Impact

	Portsmouth City	Solent Region	UK
GVA (£m)	6.5	10.3	26.1
Employment	14	35	144

Source: BiGGAR Economics

### 6.2.2 Student Placements

As part of delivering a high value education relevant to the workplace the University of Portsmouth regards the development of workplace skills as a particular priority. One of the ways that the University supports the development of these skills is by encouraging students to participate in temporary work-placements during the course of their studies.

Placements are organised in a hub and spoke method, with the University's Purple Door organisation co-ordinating activities. Each faculty has its own Placement Officer and staff, who secure relevant and high-quality work experience for students through their contacts with industry employers.

<sup>28</sup> This impact relates only to CPD that was paid for by individuals and their employers and therefore excludes a significant proportion of learner days. The impact of CPD delivered free of charge is considered as part of chapter 10.

Student placements generate benefits for the host organisations, and there is a significant body of evidence about how these benefits are manifested. For example one study on businesses in the South West of England<sup>29</sup> identified four main types of benefit, those relating to:

- the work undertaken by the student/graduate – i.e. helping to implement new procedures or completing specific projects, by freeing up time of other staff, doing things that other staff did not have the time to do;
- the outlook of the graduate or student – i.e. the idea that students/graduates can bring a fresh perspective that can stimulate organisations to question whether they are doing things in the best way;
- improved skills, knowledge or experience of existing staff – e.g. the management experience gained by employees involved in organising or supervising placements, new skills picked up from the student/graduate and the potential for organisations to use placements to vet potential employees;
- other benefits – such as direct cost savings or the opportunity to develop a relationship with a higher education institution.

The value that an individual student/graduate delivers for their host organisation will depend on a number of factors including the duration of the placement, the skills of the individual and the nature of the work undertaken. It is however possible to estimate the impact of placements based on the amount of time that students spend working within their host organisations.

The nature and duration of student placements undertaken by University of Portsmouth students varies, but placements typically last either for 12 or 52 weeks. Almost half of placements occurred in the Faculty of Science, mainly in areas related to healthcare. During the course of the year 838 students completed some form of placement. The majority of these were mandatory placements integral to the award of a particular qualification but also included short-term non-mandatory placements, sandwich placements and general work-experience.

Information on the length of placements was provided by the University, and the total amount of time that students spent on placement was estimated by multiplying this by the number of students who participated in placements. Information provided by the University also indicates that over 98% of placements occurred in the UK, of which 54% occurred in Solent Region, of which 38% occurred in Portsmouth City.

Students on placement are likely to be less productive than an average worker (a discussion of the logic behind this assumption is provided in section 10.4.3. The value that students added to their host organisations was therefore estimated by assuming that students contributed one third of the GVA that an average worker in the same industry would generate over the same period of time. Appropriate multipliers were then applied to capture the effect of subsequent spending rounds.

In this way it was estimated that University of Portsmouth students who undertook a placement in 2015/16 contributed £12.9 million GVA to the UK economy and supported 190 jobs. This impact is summarised in Table 6.4.

<sup>29</sup> Warwick Institute for Employment Research (November 2009), The impact of graduate placements on businesses in the south west of England.

Table 6.4 – Student Placement Impact

	Portsmouth City	Solent Region	UK
GVA (£m)	3.9	5.9	12.9
Employment	56	85	190

Source: BiGGAR Economics

This section has focused on the benefits that student placements deliver for host organisations; however, there is evidence to suggest that students also benefit from placements. For example a study published by the National Centre of Universities and Business showed that students who undertake a placement gain:<sup>30</sup>

- improved skills and knowledge – including soft skills and specific technical skills related to the specific industry, which can result in better informed decisions about future career choices;
- increased understanding of the working world and how they can contribute – students gain a greater degree of personal maturity, a greater ability to articulate how their skills can be of use, and an evidence base for what those skills are; and
- enhanced employment prospects – students can develop a strong network, which can boost their knowledge of available roles, or take a first step in their future place of work, which may offer a permanent contract.

### 6.2.3 Knowledge Transfer Partnerships

The University of Portsmouth also contributes to innovation support through participation in Knowledge Transfer Partnerships (KTPs), a UK wide initiative run by the UK Government that is designed to enable businesses to gain access to the knowledge and expertise of UK universities and colleges.

A KTP is a three-way partnership between an academic, a business partner (including private sector companies, charities and public sector organisation) and a recent graduate (known as an Associate) who is employed to work on a specific project relevant to the business partner. The duration of a KTP is around 3 years. In the six year leading up to 2015/16 the University of Portsmouth completed 19 KTPs, with a range of industrial partners in sectors as diverse as community care and waste management. The University has a further 8 KTPs that are still on-going. The majority of the 27 completed and on-going KTPs were in the Solent Region (16), of which 4 were in Portsmouth City.

An example of a particularly successful KTP between the University and Entec International, which was ranked as 'outstanding' by the KTP Grading Panel, is provided in Figure 6.2.

<sup>30</sup> NCUB (2014), What are the benefits of a quality placement. <http://www.ncub.co.uk/placements-report/the-benefits-of-a-high-quality-placement.html>

## Figure 6.2 – KTP with Entec International

Entec International is a global logistics company that manages complex supply chain operations for some of the world's largest manufacturers. The KTP was established to develop a 'toolkit', which allows the Company to clean, analyse and profile complex inventory data in simplified graphic format.

The toolkit, which was designed by business, operations research and maths academics at the University, has enabled Entec to generate £2.4 million in increased revenues, with an additional £16 million of orders confirmed. The KTP associate involved in delivering the project has also since gone on to a permanent position within the Company. The project has also led to the opening of a new office in Portsmouth to continue to improve relations with the University and its research base.

Source: BiGGAR Economics based on information provided by the University of Portsmouth

The economic benefits of these projects was estimated using evidence from the formal evaluation of the KTP programme<sup>31</sup> published by the Technology Strategy Board. This study found that the net additional GVA supported by KTPs completed in the South East of England amounted to £0.7 million over the six years after the KTP was completed, and that on average each project supported 3 jobs. This implies that the annual impact of each completed project is equal to £0.11 million. The GVA impact of on-going KTPs was assumed to be 10% of a completed one.

The University also has 10 short KTPs, which were assumed to take place in similar geographies to more traditional KTPs. BiGGAR Economics undertook an evaluation of Collaborative Innovation Partnerships,<sup>32</sup> which are used as the basis for estimating the impact of short KTPs, in 2011. This found that the average project of this type supported GVA of £34,000 and 0.7 jobs.

Using this evidence it was estimated that KTPs supported by the University of Portsmouth generated £2.7 million GVA for the UK economy and supported 64 jobs. A break-down of this impact for each study area was estimated based on the location of the KTP industrial partner and is presented in Table 6.5.

Table 6.5 – Economic Benefit of KTPs 2015/16

	Portsmouth City	Solent Region	UK
GVA (£m)	0.3	1.5	2.7
Employment	7	34	64

Source: BiGGAR Economics

This section has focused exclusively on KTPs supported by the University because good data exists about the impact of these projects at a UK level, but it is important to note that these are not the only type of studentships supported by the University. Each year the University also hosts around 60 industry sponsored professional doctorates. This implies that every year around 60 businesses in the region benefit directly from being able to access specialist expertise from the University through bespoke research undertaken by a student.

These studentships are similar to KTPs in that they involve businesses investing resources in order to access University expertise through a student. Indeed, consultation with sources at the University suggest that businesses often use studentships as a way of getting a KTP type output if the resources to support a formal KTP are not available.

<sup>31</sup> Regeneris Consulting (2010), Knowledge Transfer Partnerships Strategic Review, Technology Strategy Board

<sup>32</sup> BiGGAR Economics (2009), Evaluation of North East of England's CIPS

These studentships are not the same as the KTPs so it is not appropriate to estimate their impact using the same evaluation evidence so for this reason the impact estimated in this section is likely to be conservative.

### 6.3 Licensing

Research activity can also be translated into economic activity through licensing agreements with industry, which give companies the legal right to use intellectual property (IP) created at the University to generate commercial gains. In general this is not an area of impact that the University of Portsmouth pursues, but there are impacts associated with licensing.

These are estimated by applying the well-known Goldschneider rule, which suggests that royalty rates are typically 25% of the licensee's profits, which equates to 5% of the total turnover generated by a license.<sup>33</sup> Therefore, a royalty rate of 5% was applied to the revenue generated by the University of Portsmouth licenses to estimate the value of additional turnover. The GVA of this impact was calculated by applying the GVA/turnover and turnover/employee ratio for the appropriate industries.

In this way it was estimated that the impact generated in the UK, including indirect impacts, was £0.3 million GVA and 5 jobs.

Table 6.6 – Impact supported by Licensing 2015/16

	Portsmouth City	Solent Region	UK
GVA (£m)	-	-	0.3
Employment	-	-	5

Source: BiGGAR Economics

### 6.4 Incubators

Business incubators are designed to provide flexible, short-term space to support young businesses during their early stages of development and growth. Such facilities can be particularly important in areas where constraints on the supply of office space can make prices prohibitive for small businesses with limited financial resources. Evidence has emerged in recent years to suggest that Portsmouth is one such area.

Research published by commercial real estate agents Savills in early 2017 for example<sup>34</sup> highlighted that office space in Portsmouth is undersupplied and that failure to meet this demand could inhibit long-term economic growth. The specific requirement for business incubation space was also highlighted in evidence submitted to the Portsmouth Planning Board in February 2017,<sup>35</sup> which stated that:

“start-up incubation (creative and entrepreneurial) is a priority for the economic development community, and could be a means of retaining manufacturing jobs and increasing business growth.”

<sup>33</sup> Goldschneider (2002), Use of the 25% Rule in valuing IP

<sup>34</sup> Savills (February 2017), Southampton, Portsmouth and the wider M27 corridor needs more homes and office space to support strengthening economy.

<sup>35</sup> Portsmouth City Council (February 2017), Portsmouth 2025 masterplan, planning board draft

The University of Portsmouth has two incubators: the Innovation Space and Portsmouth Technopole.

The Innovation Space was opened in 2014, with the specific aim of supporting individual entrepreneurs and small start-up businesses by offering affordable and flexible rent, access to facilities, and the opportunity to work within a like-minded and supportive community.

The Portsmouth Technopole is designed as providing a next step to these businesses, supporting larger businesses that can scale up and support greater employment by providing tailored and invaluable business support. The synergies and progression offered by these two incubators offers businesses a structured growth path.

The new Cell Block Studios are based in converted Royal Navy cell blocks that have been designed specifically to address the shortage of office supply for companies in the cultural and creative industries.

A total of 44 companies are located in Innovation Space, although 2 have been excluded from the analysis as they are University of Portsmouth start-ups, and 39 companies are located in Portsmouth Technopole. Data provided by the University indicates that 86 people are employed at Innovation Space and 282 people are employed at the Portsmouth Technopole.

The economic impact of the businesses supported by these incubators was estimated by applying GVA/employee ratios for the appropriate industries to each of the businesses. Indirect GVA and jobs effects were then captured by applying appropriate economic multipliers to the direct effect.

Best practice dictates that in assessing the impact of an intervention it is important to consider the counterfactual – i.e. the situation that would have existed if the intervention had not occurred. For most of the impacts considered in this report the reference case is simply that the impact in question would not have happened. This is not necessarily the case for business incubators because it is possible that if the incubators did not exist some of the businesses that have been supported would have chosen to locate elsewhere instead. It is also likely that colocation with a university has enabled the businesses to achieve higher levels of growth than would otherwise have been possible.

To take account of these factors it was therefore assumed that if the University did not exist then none of the businesses supported would be located in Portsmouth, around a quarter might have chosen to locate elsewhere in the Solent region and around half might have chosen to locate elsewhere in the UK. These assumptions are discussed in further detail in section 10.4.4.

In this way it was estimated that the University of Portsmouth's incubators supported £11.2 million GVA and 322 jobs in Portsmouth City, £9.3 million GVA and 266 jobs in the Solent Region, and £7.6 million GVA and 214 jobs in the UK.

Table 6.7 – University of Portsmouth Incubators

	Portsmouth City	Solent Region	UK
GVA (£m)	11.2	9.3	7.6
Employment	322	266	214

Source: BiGGAR Economics

## 6.5 Summary Enterprise Support Impact

Adding together the impacts considered in this section suggests that the enterprise support activity undertaken by the University of Portsmouth in 2015/16 generated £67.8 million GVA for the UK economy and supported 871 jobs. A break-down of this impact is provided in Table 6.8.

Table 6.8 – Total Enterprise Support Impact 2015/16

	Portsmouth City	Solent Region	UK
GVA (£m)			
Services to industry	6.6	8.0	18.7
CPD	6.5	10.3	26.1
Student placements	3.9	5.9	12.9
KTPs	0.3	1.5	2.7
Licensing	-	-	0.3
Incubators	11.2	9.3	7.6
<b>Total GVA</b>	<b>28.5</b>	<b>35.0</b>	<b>68.3</b>
Employment			
Services to industry	90	110	259
CPD	14	35	144
Student placements	56	85	190
KTPs	7	34	64
Licensing	-	-	5
Incubators	322	266	214
<b>Total Employment</b>	<b>489</b>	<b>530</b>	<b>876</b>

Source: BiGGAR Economics. Totals may not sum due to rounding.

## 7 TEACHING AND LEARNING IMPACTS

This section considers the long-term economic effects of the University of Portsmouth's teaching activity.

### 7.1 Industry Relevant Training

The skills and knowledge that students gain at the University enable them to become more productive employees after graduation. The University focuses on ensuring that students have the appropriate skills and work-place understanding to contribute effectively once in employment. The University does this by focusing, as much as possible, on ensuring that students learn in a way that replicates real life experiences as closely as possible. For this reason, the University operates several simulation facilities, such as:

- a Bloomberg Suite, which gives students access to software, analytics, and data used by city traders;
- a motion capture suite, film and TV studios, and workshop space in the Eldon Building;
- the Dental Academy, which incorporates full-simulation suite, as well as providing care to those in the local community;
- a mock Law Court in which students of Law and other disciplines can practise their skills and see how several areas overlap;
- a bespoke, professional standard Interpreter Training Suite;
- Pharmacy Live, a student area, connected to a Live pharmacy through video and audio links;
- a 25-seat industry standard Newsroom;
- a new 13-bay Optometry Suite; and
- a healthcare simulation suite (described in Figure 7.1).

Figure 7.1 – Centre for Simulation in Healthcare

In late 2016, the University of Portsmouth opened a healthcare simulation suite in collaboration with Portsmouth Health Care Trust, which provides students with the opportunity to experience and practise healthcare in a safe environment.

Along with an ambulance, the Centre contains a fully functioning operating theatre, ultrasound facilities and space that be reconfigured to be either an intensive care unit or a pharmacy patient assessment area. The Centre also has 15 human patient simulators, which can bleed and breathe oxygen, have heartbeats, and react to students' treatments and drugs.

The Centre also incorporates eye-tracking surgery, so that staff can see where students look while in the operating theatre and ambulance, and provide relevant feedback. This is part of the University's focus on developing student skills and experience in real-life settings, to prepare students most effectively for the world of work.

Source: University of Portsmouth

## 7.2 Addressing Local Skills Needs

The University of Portsmouth has a strong focus on providing training and education that is relevant to the requirements of important sectors of the local and regional economy. One of the ways it does this is by maintaining close relationships with important local and regional employers, many of whom are represented on the University Board. These relationships have enabled the University to foster strong collaborative relationships with some of the most prominent employers in the local area. Of particular note is the University of Portsmouth's long-standing relationship with the Royal Navy, the largest employer in the City, which is described in further detail in Figure 7.2.

Figure 7.2 – Partnership with the Royal Navy

Several years ago this relationship resulted in the development of the University's "Partnership Masters Programme", which allows working people to study for university qualifications without leaving their jobs. The Programme is based on a unique three-way partnership between the student, their employer and the University, which enables students to gain recognition for prior learning and academic credit for projects undertaken at work.

Originally the Programme was aimed primarily at military personnel who were reaching the end of their term of service and was designed to provide them with opportunities to gain qualifications that would be useful when they returned to civilian life. The Programme is believed to be unique in the UK in that it enables students to gain recognition for standard military training and qualifications.

The Programme has since been expanded and is now open to working people from non-military backgrounds as well. At the time of writing, around 400 students were enrolled in the Programme.

In May 2015 the University's relationship with the Royal Navy was further reinforced when a new Memorandum of Understanding was signed that enables students from the University to take part in the Defence Academy's Defence Technical Undergraduate Scheme (DTUS). DTUS is a sponsorship scheme run by the Defence Academy to support engineering and technical graduates who are planning to become Officers in the Royal Navy, Army, Royal Air Force or Civil Servants in the Defence Engineering and Science Group within the Ministry of Defence. The scheme provides academic and financial support to students alongside adventurous training and sporting opportunities with the aim of promoting personal development and leadership.

The University's engagement in these schemes not only benefits students by enabling them to obtain skills and qualifications that will help them make the transition back to civilian life but also makes an important contribution to fulfilling the skills needs of one of the most important employers in the region.

Source: University of Portsmouth

## 7.3 Estimating the Graduate Earnings Premium

The subject in which a student graduates determines the earnings premium that they can expect to achieve of the course of his or her working life. The impact associated with graduates from the University of Portsmouth was therefore estimated by applying the graduate premium for each subject area by the number of graduates in that subject area.

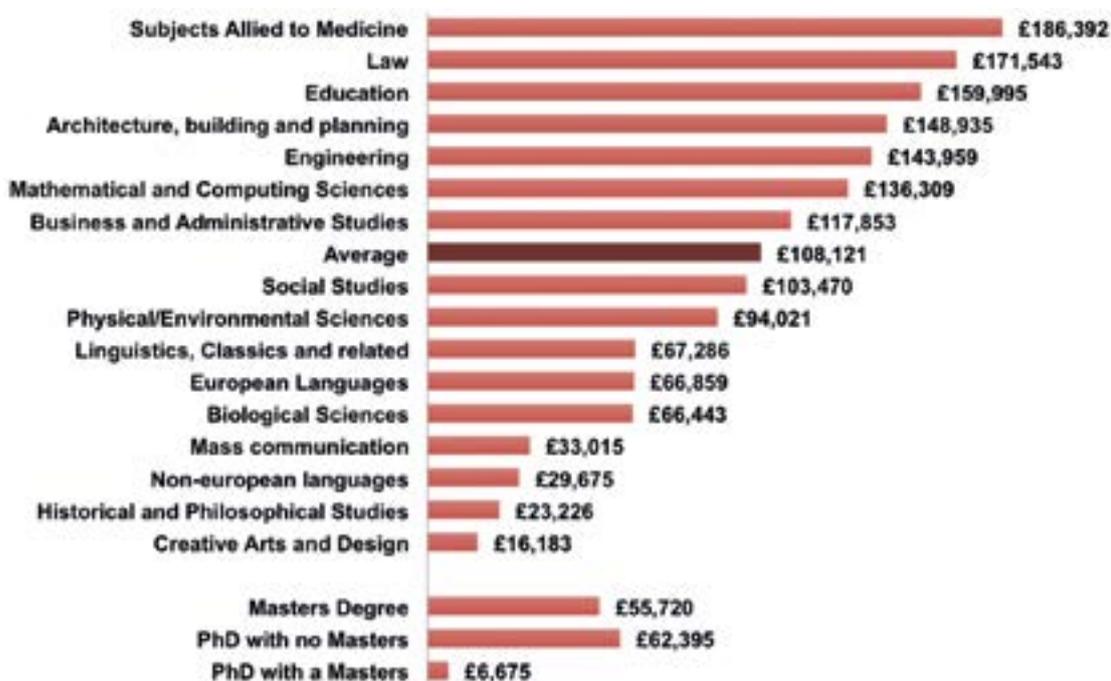
On average, undergraduates can expect to earn £108,121 more over their working life than if they had not gone to University. However, this average hides considerable variation as graduates in subjects allied to medicine can expect to earn almost £190,000 extra, while graduates in creative arts and design can only expect to achieve a premium of £16,183 during their working life. The

graduate premium by degree type is given in Figure 7.3 (only the premium for degree types offered at the University of Portsmouth are included).

Figure 7.3 also illustrates the premium associated with post-graduate qualifications. This shows that a PhD qualification is associated with a total additional premium of £62,395 and a Masters degree is associated with an additional premium of £55,720.

Some of the students who gain PhDs at the University of Portsmouth will have attained their Masters degree elsewhere and therefore the proportion of their graduate premium associated with their Masters degree would not be attributable to the University. The graduate premium of PhD and Masters degrees was therefore estimated separately to avoid double counting. This was done by multiplying the number of Masters graduates by the Masters premium of £55,720 and the number of PhD graduates by the additional premium of a PhD degree (£6,675), which represents the difference between the Masters premium and the total PhD premium.

Figure 7.3 – Graduate Premium by Subject Area and Type



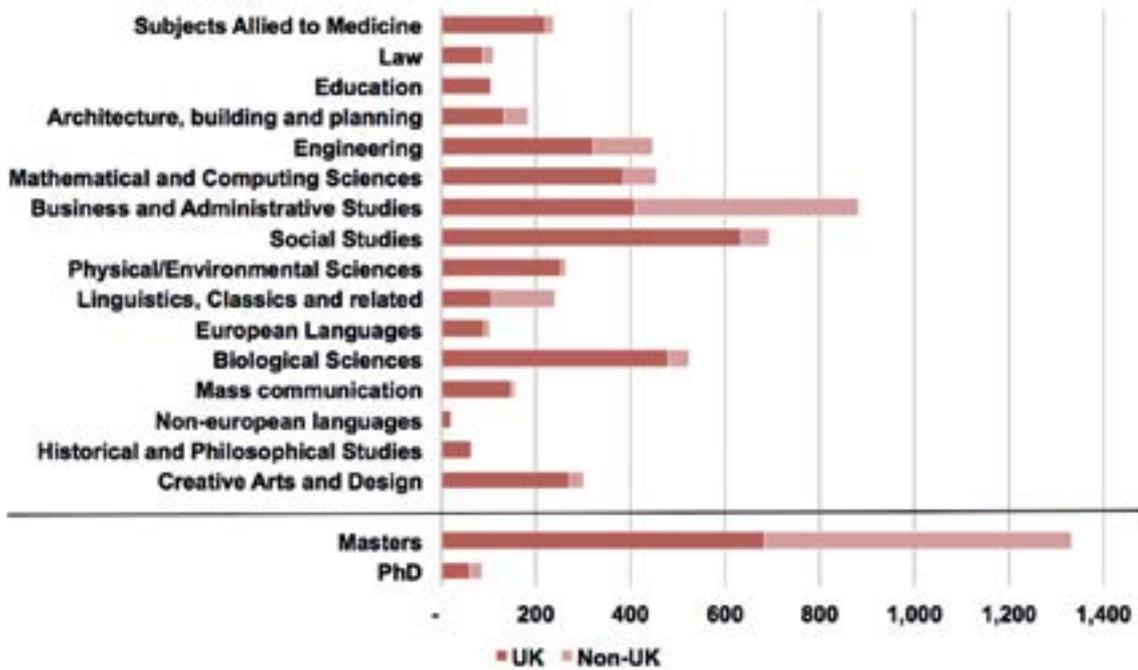
Source: Department for Business, Innovation and Skills (2011), The Returns to Higher Education Qualifications

In 2015/16 4,778 undergraduates completed their degree at the University of Portsmouth, of whom 78% were from the UK. The breakdown by degree subject and nationality is provided in Figure 7.4 with the most popular subject being business and administrative studies.

A further 1,417 graduated with a Masters or PhD, of whom 52% were from the UK. It was estimated, based on a HEFCE study that 39% of those studying for a PhD would already have a Master degree.

<sup>36</sup> The source does not provide a break-down of post-graduate qualifications by discipline

Figure 7.4 – Graduates by Degree Type



Source: University of Portsmouth

The graduate premium is realised in the area in which the graduate resides. Data provided by the University of Portsmouth shows that in 2015/16 98% of UK graduates remained in the UK after graduation, of whom 34% remain in the Solent Region, and 20% remained in Portsmouth. This implies that in 2015/16 around 1,267 graduates from the University remained in the Solent region and around 745 remained in Portsmouth.

The earnings premium of the University of Portsmouth’s graduates is split according to where they reside after graduation, as shown in Table 7.1. In total, graduates from the University in 2015/16 who remained in the UK could expect to realise an estimated graduate premium of £419.7 million over their working lives, of which £144.1 million could be in the Solent Region and £84.6 million could be in Portsmouth.

Table 7.1 – Location of Graduates

	Portsmouth City	Solent Region	UK
Location of Graduates	20%	34%	98%
GVA (£m)	84.6	144.1	419.7

Source: University of Portsmouth, BIGGAR Economics

## 8 VISITOR ECONOMY

The University of Portsmouth attracts visitors to the region who would not otherwise visit the area, including friends and family of students and staff, people attending conferences and events and prospective students. The University also provides accommodation for visitors outside term time, providing valuable bed capacity for the City. The expenditure of visitors to the University helps support wealth and employment in the local tourism sector.

### 8.1 Conferences and Events

Each year the University of Portsmouth hosts several conferences and events that attract visitors to the area. Many of the events hosted in these facilities are directly related to the academic strengths of the University of Portsmouth. For example, the largest conference held by the University is the Counter Fraud and Forensic Accounting Conference, which builds on the expertise of the Institute of Criminal Justice Studies.

The University of Portsmouth also helps enhance Solent Region's overall business visitor capacity by providing facilities for a large numbers of guests. For example, the British Academy of Management held a conference on the value of pluralism in advancing the field of management, which was hosted by the University of Portsmouth.

Data supplied by the University of Portsmouth shows that in 2015/16 over 20,000 people attended conferences and events. A break-down of this figure is provided in the table below.

Table 8.1 – Visitors to University of Portsmouth

Event Type	No. of Delegates/Visitors
Day Conferences	8,900
Residential Conferences	7,500
Residential Courses	2,500
Other Group Events	1,500

Source: University of Portsmouth

The value of expenditure associated with these visitors was estimated using data about the expenditure of different types of visitors. The assumptions used for different types of visitor are summarised in Table 8.2.

Table 8.2 – Visitor Expenditure Assumptions

Origin of Visitor and Nature of visit	Average Expenditure/trip
Day Visitor, spend per visitor	£42
Domestic Overnight Visitor, spend per visitor	£154
Overseas Business, spend per trip	£409
Overseas Visitor, spend per trip	£354

Sources: TNS, The GB Tourist Statistics 2014; TNS, The GB Day Visitor Statistics 2014; VisitBritain, International Passenger Survey, 2014

Using these assumptions it was estimated that these visitors spent a total of £2.9 million in 2015/16. The direct and indirect impacts of this expenditure were estimated by applying economic ratios and multipliers for the tourism sector.

In this way it was estimated that performances, conferences and events hosted by the University of Portsmouth generated £1.3 million GVA for Portsmouth City economy in 2015/16 and supported 66 jobs. A breakdown of this is provided in Table 8.3.

Table 8.3 – Economic Benefit of Conferences and Events in 2015/16

	Portsmouth City	Solent Region	UK
GVA (£m)	1.3	1.1	0.9
Employment	66	52	39

Source: BiGGAR Economics

NB: If the University did not exist then some activity that happened in Portsmouth would have occurred elsewhere in the region or elsewhere in the UK instead. To account for this it was therefore necessary to make adjustments to the data to reflect how much of it was additional to each study area and how much of it might have happened anyway. As a result of this the impact in Portsmouth is larger than the impact in the Solent region and the impact in the Solent region is larger than the impact in the UK. This caveat applies to all of the impacts described in this chapter.

## 8.2 Visits from Friends and Relatives

In 2015/16 the University of Portsmouth had a total of almost 24,000 staff and students. During the course of the year friends and relatives not resident in the area would have visited them and the expenditure of these visitors would have generated economic activity in local businesses and their supply chains. These trips are defined as Visits from Friends and Relatives (VFR).

This impact was estimated by first of all establishing how many people visit University of Portsmouth students and staff each year and estimating how much these visitors spent. The number of domestic and overseas visitors and their expenditure was estimated using data from the Great British Tourism Survey 2014 and Visit Britain.

Table 8.4 – Personal Visits to Students and Staff Assumptions

	Value	Source
Average spend per VFR trip		TNS, The GB Tourist Statistics 2014
Domestic	£96	
Overseas	£361	VisitBritain, International Passenger Survey, 2014
VFR trips per capita		TNS, GB Tourist Statistics; VisitBritain, International Passenger Survey; ONS, Mid-Year Population Estimates 2015
Domestic	0.85	
Overseas	0.2	

Sources: TNS, The GB Day Visitor Statistics 2014;

Using this approach, it was estimated that visitors to University of Portsmouth staff and students spent a total of £2.9 million in the UK in 2015/16, most of which was retained within Solent Region. The direct and indirect impacts of this expenditure were estimated by applying economic ratios and multipliers for the tourism sector.

In this way it was estimated that friends and family visiting students and staff at the University of Portsmouth generated £2.6 million GVA for the UK economy in 2015/16 and supported more than 100 jobs.

Table 8.5 – Economic Benefit of Personal Visits to Students and Staff in 2015/16

	Portsmouth City	Solent Region	UK
GVA (£m)	1.6	1.9	2.6
Employment	79	90	108

Source: BiGGAR Economics

### 8.3 Open Days

In 2015/16 the University of Portsmouth hosted almost 33,000 potential students and guests at open days, applicant days and other related events.

Table 8.6 – Number of people attending open days

	Open Days	Applicant Days	Other
No. Potential Students	7,307	4,762	1,000
No. of Guests	10,961	7,143	1,500
Total	18,268	11,905	2,500

Source: University of Portsmouth

It was assumed that 60% of these visitors were domestic day visitors, 38% were domestic overnight visitors and 2% were from overseas. The value of expenditure made by these visitors was estimated using the expenditure assumptions presented in Table 8.2 above.

Using this approach it was estimated that these visitors spent a total of £2.4 million in 2015/16, most of which was additional to the Solent Region economy. The direct and indirect impacts of this expenditure were estimated by applying economic ratios and multipliers for the tourism sector.

In this way it was estimated that people attending open days and related events generated £1.5 million GVA for the Solent Region economy in 2015/16 and supported almost 74 jobs.

Table 8.7 – Economic Benefit of Open Days 2015/16

	Portsmouth City	Solent Region	UK
GVA (£m)	1.5	1.3	1.0
Employment	74	59	44

Source: BiGGAR Economics

### 8.4 University Accommodation Letting

The University of Portsmouth makes its student accommodation available to tourists during academic holidays. In 2015/16 more than 64,000 visitors stayed in University accommodation outside term-time. Of these visitors more than 60,000 were leisure tourists and the remainder were traveling on business.

The economic impact of the income that the University received from these visitors was accounted for as part of the core impacts described in Chapter 4 but these visitors will also have generated an economic impact by spending money in the local area. In order to estimate the value of this impact it is necessary to consider the extent to which these visitors were additional to Portsmouth – i.e. what proportion of them would not otherwise have visited the City.

Consultations undertaken to support this study have suggested that at the time of writing there was a shortage of tourism accommodation in Portsmouth. This view is supported by material produced by Portsmouth City Council, which suggests that high levels of tourism demand in the City are likely to create significant opportunities for new hotel development over the coming years.

This implies that the capacity of the local tourism sector is not sufficient to accommodate current levels of demand, which suggests that if the University accommodation were not available then a significant proportion of the visitors who stayed there would not otherwise have been able to find suitable accommodation elsewhere in the City. It was therefore assumed that all of the visitors who stayed in University owned accommodation in 2015/16 would not otherwise have visited the City.

The greater availability of visitor accommodation outside Portsmouth means that visitors to the City are likely to be able to secure accommodation elsewhere in the region even if none is available in the City. To account for this it was therefore assumed that the level of additionality was 75% at the Solent level and 50% at the UK level.

It is also possible that some of the visitors who stayed in University owned accommodation visited the City in order to attend one of the events considered elsewhere in this chapter. It was assumed that such visitors accounted for around 50% of the total. As the expenditure of these visitors has already been counted it was necessary to exclude it here to avoid double counting.

The next step was to estimate the total value of additional expenditure by these visitors. This was done using the assumptions presented in the table below.

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<sup>37</sup> Portsmouth City Council (2015), Hotel investment prospectus

Table 8.8 – University Accommodation Letting Assumptions

	Value	Source
No. of tourists	64,310	University of Portsmouth
Of which business	3,410	
Of which leisure	60,900	
Domestic Spend per Trip		TNS, The GB Tourist Statistics 2014
Business	£154	
Leisure	£154	
Overseas Spend per Trip		VisitBritain, International Passenger Survey
Business	£409	
Leisure	£354	
University lets which are already counted	50%	BiGGAR Economics Assumption
Additionality		
Portsmouth City	100%	
Solent Region	100%	
UK	50%	

Given these assumptions it was estimated that visitors who stayed in University owned accommodation spent an additional £2.2 million in the local economy. The direct and indirect impacts of this expenditure were estimated by applying economic ratios and multipliers for the tourism sector.

In this way it was estimated that visitor spending by people staying in university accommodation generated £1.4 million GVA for the Solent Region economy in 2015/16 and supported 69 jobs.

Table 8.9 – Economic Benefit of University Accommodation Letting 2015/16

	Portsmouth City	Solent Region	UK
GVA (£m)	1.4	1.2	1.0
Employment	69	55	41

Source: BiGGAR Economics

By making its accommodation available outside term-time the University of Portsmouth directly helps to enhance the capacity of the local visitor economy, which should make it easier for the City to attract major events. A good example of this is the Victorious Festival, which is described in the box below.

Figure 8.1 – Victorious Festival

The Victorious Festival is an annual pop festival billed as Portsmouth’s “premier music spectacle”. In 2016 the Festival attracted almost 100,000 visitors to the City, who spent an estimated £3.4 million during the weekend long event.

The University of Portsmouth is an official accommodation provider for the event and is featured prominently on the Victorious Festival website as “the closest accommodation to the festival site”. Located just two minutes walk from the Festival site the accommodation undoubtedly helps to enhance the appeal of the event for visitors who prefer not to camp.

An independent analysis of the 2016 event suggested that it generated a total of £5.8 million for the regional economy. Organisers hope that, by securing major acts such as Noel Gallagher and the Manic Street Preachers, the impact of the 2017 event could be as high as £10 million. The support that the University has provided is likely to have been one of the factors that has contributed to the success of the event.

Source: The News (February 2016) and Victorious Festival website

## 8.5 Summary Visitor Impact

Adding together the sources of impact considered in this section suggests that the University of Portsmouth contributed £5.9 million GVA to the tourism economy of Portsmouth City in 2015/16 and supported almost 287 jobs. A break-down of this is provided in Table 8.10.

Table 8.10 – Total Tourism Impact 2015/16

	Portsmouth City	Solent Region	UK
<b>GVA (£m)</b>			
Conferences & Events	1.3	1.1	0.9
Visits from Friends and Relatives	1.6	1.9	2.6
Open Days	1.5	1.3	1.0
University Accommodation Letting	1.4	1.2	1.0
<b>Total GVA</b>	<b>5.8</b>	<b>5.5</b>	<b>5.5</b>
<b>Employment</b>			
Conferences & Events	66	52	39
Visits from Friends and Relatives	79	90	108
Open Days	74	59	44
University Accommodation Letting	69	55	41
<b>Total Employment</b>	<b>288</b>	<b>256</b>	<b>232</b>

Source: BiGGAR Economics. Totals may not sum due to rounding.

While the additional visitor expenditure has driven the quantitative economic impacts described above, there are also qualitative impacts of the University’s presence in Portsmouth that are harder to measure. For example, performing arts staff and students are reported to be a major driver of the cultural life of the city by putting on events and exhibitions.

The University has also made an important contribution to the cultural infrastructure of the city, the value of which is very difficult to quantify.

In 2014/15 for example, the University led a major project to redevelop the New Theatre Royal, one of Portsmouth's most important arts venues. Prior to this the building had been in a very poor state of repair and the University stepped in as a co-sponsor of the £20 million redevelopment project. The University now uses the space for its performing arts activities, while the City benefits from a refurbished cultural venue. The University has re-located its performing arts teaching facilities into the White Swan building to the side of the site creating synergies for both organisations. The University was responsible for managing the project and took on financial risk, allowing the project to move forward.

The University also plays an important role in preserving the cultural heritage of the City through its partnership with the Royal Navy's Portsmouth Historic Dockyard. As part of this partnership the University shares the cost of an archivist for HMS Warrior and has also contributed to the design and development of numerous exhibits. Cultural heritage has been an important driver of economic regeneration in a number of cities elsewhere in the UK so this type of partnership illustrates how Portsmouth may also be able to benefit from this.

## 9 SUMMARY QUANTIFIABLE IMPACT

Adding together all of the impacts considered in this report it can be estimated that in 2015/16 the University of Portsmouth generated:

- £1.1 billion GVA and supported around 12,700 jobs across the UK, which included:
- £624 million GVA and around 9,300 jobs in the Solent Region; and
- £476 million GVA and around 7,900 jobs in Portsmouth City.

A break-down of these impacts by source for each study area is provided in Table 9.1 and Table 9.2. This implies that:

- for each £1 that the university generated as a result of its direct operations, it generated £7 in total benefits throughout the UK economy; and
- for each person directly employed the university supported 5 jobs somewhere in the UK.

### 9.1 Impact in Context

According to official statistics published by the Office for National Statistics,<sup>38</sup> the total GVA of Portsmouth in 2015 was £5.3 billion. This implies that the University of Portsmouth accounts for around 9% of the total GVA generated by the City. Similarly, in 2016 official statistics show that a total of 121,000<sup>39</sup> jobs in Portsmouth. This implies that the University supports almost 7% of all jobs in the City.

The fact that the proportion of jobs supported by the University is slightly smaller than the proportion of GVA suggests that the type of jobs supported by the University tend to be slightly higher value than jobs elsewhere in the City. Indeed, dividing the total GVA of the City by the total number of jobs indicates that average GVA/employee was around £53,000 in 2015. In comparison, the average GVA of the jobs supported by the University was around £60,000/year, around 13% higher than the average for the City as a whole.

<sup>38</sup> ONS (15 December 2016), Regional gross value added data release (table 1)

<sup>39</sup> ONS (2017), Annual population survey results for 2016

Table 9.1 – University of Portsmouth GVA Impact 2015/16 (£m)

	Portsmouth City	Solent Region	UK
Direct	159.4	159.4	159.4
Supplier Spending	2.5	9.8	46.9
Staff Spending	12.6	55.2	118.4
Capital Spending	1.3	5.3	27.0
<b>Total Core Impact</b>	<b>175.8</b>	<b>229.6</b>	<b>351.8</b>
Student Spending	121.2	144.5	198.5
Student Part-Time Work	59.0	64.5	76.4
Student Volunteering	0.4	0.4	0.4
<b>Total Student Impact</b>	<b>180.6</b>	<b>209.4</b>	<b>275.3</b>
Services for Businesses	13.1	18.4	44.8
KTPs	0.3	1.5	2.7
Student Placements	3.9	5.9	12.9
Licensing	-	-	0.3
Incubators	11.2	9.3	7.6
<b>Innovation Support Impact</b>	<b>28.5</b>	<b>35.1</b>	<b>68.3</b>
Personal visits	1.6	1.9	2.6
Open Days	1.5	1.3	1.0
Conferences and Events	1.3	1.1	0.9
University Accommodation	1.4	1.2	1.0
Tourism Impact	5.8	5.5	5.5
<b>SUBTOTAL</b>	<b>390.7</b>	<b>479.6</b>	<b>700.8</b>
Graduate Productivity	84.6	144.1	419.7
<b>TOTAL GVA</b>	<b>475.3</b>	<b>623.7</b>	<b>1,120.5</b>

Source: BiGGAR Economics. NB: Totals may not sum due to rounding.

Table 9.2 – University of Portsmouth Employment Impact 2015/16

	Portsmouth City	Solent Region	UK
Direct	2,542	2,542	2,542
Supplier Spending	44	170	797
Staff Spending	236	1,008	2,095
Capital Spending	19	75	378
<b>Total Core Impact</b>	<b>2,841</b>	<b>3,795</b>	<b>5,812</b>
Student Spending	2,080	2,393	3,114
Student Part-Time Work	2,190	2,399	2,652
Student Volunteering	-	-	-
<b>Total Student Impact</b>	<b>4,270</b>	<b>4,792</b>	<b>5,766</b>
Services for Businesses	104	146	404
KTPs	7	34	64
Student Placements	56	85	190
Licensing	-	-	5
Incubators	322	266	214
<b>Innovation Support Impact</b>	<b>489</b>	<b>531</b>	<b>877</b>
Personal visits	79	90	108
Open Days	74	59	44
Conferences and Events	66	52	39
University Accommodation	69	55	41
<b>Tourism Impact</b>	<b>288</b>	<b>256</b>	<b>232</b>
<b>TOTAL EMPLOYMENT</b>	<b>7,888</b>	<b>9,374</b>	<b>12,687</b>

Source: BiGGAR Economics. NB: Totals may not sum due to rounding.

## 10 APPENDIX B - METHODOLOGICAL APPENDIX

This section provides some further detail about the general approach taken in this report and the methodology used to estimate some of the impacts considered in chapter 6.

### 10.1 General Approach

To estimate the economic impact arising from each of source of impact, it was first necessary to determine the scale of activity and the level of associated expenditure. Data on the scale and location of activity (e.g. the number of students and where they reside) was sourced directly from University of Portsmouth.

This data was supplemented with assumptions to quantify the level of expenditure associated with each type of activity (e.g. data on the cost of student living). These assumptions were derived from BiGGAR Economics' previous experience of comparable institutions elsewhere in the UK and/or other relevant research findings. The various sources used are specified in the relevant sections.

When expenditure is generated in the economy this generates both direct effects and multiplier effects elsewhere in the supply chain. The total impact of the University of Portsmouth is the sum of the direct and multiplier effects associated with each source of impact.

Direct effects were estimated by applying turnover/GVA and turnover/employee ratios for appropriate sectors of the UK economy to the total value of expenditure. These ratios were obtained from the UK Annual Business Survey, published by the Office for National Statistics (ONS).<sup>40</sup>

Multiplier effects were then captured by applying appropriate GVA and employment multipliers, based on the Type 2 multipliers published in the Scottish Government's Input-Output tables<sup>41</sup> to the direct effects. This source was used because it is more up to date than equivalent information published about the UK economy as a whole and because it also provides multipliers for different sectors. The Scottish multipliers were then adapted for each of the study areas to reflect the relative size of the economy in each area.

### 10.2 Impact Time Frame

Some of the activity undertaken by University of Portsmouth generates economic activity immediately e.g. purchases made by University generate activity amongst the University's suppliers almost straight away. However, much of the activity undertaken by University of Portsmouth does not generate immediate economic effects. For example, the additional income that University of Portsmouth graduates will earn as a result of the enhanced skills they gain while studying will be generated over their entire working lives and not just in the year after graduation. The impact generated in 2015/16 will therefore be the cumulative impact of historic activity.

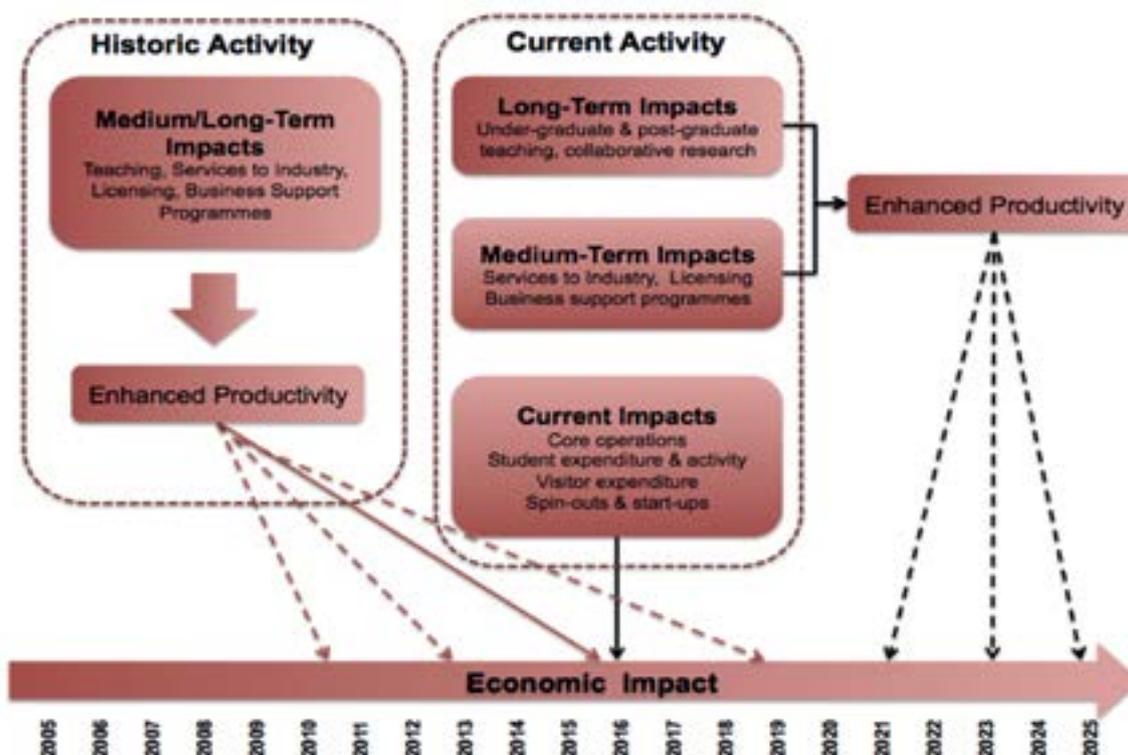
Limitations in data availability mean that it is generally not possible to estimate the actual impact of historic activity that is realised in any particular year. To overcome this, the report makes the simplifying assumption that activity undertaken in 2015/16 generates impact in 2015/16. This is reasonable because, although the impact of some activity that occurs in 2015/16 will not occur until a later date, some of the impact that was realised in 2015/16 will have been generated by historic activity and no attempt is made to quantify the impact of this.

<sup>40</sup> ONS (2015), UK Annual Business Survey 2013 Revised Results

<sup>41</sup> Scottish Government (2015), Input-Output Tables 2012

Figure 10.1 summarises the different types of activity considered in the report and the time-scale over which they generate impact. The black arrows represent impact generated by current activity and the red arrows represent impact generated by historic activity. In each case the dashed arrows represent future impacts and the solid arrows represent impact in the current year.

Figure 10.1 – Impact Time Frame



Source: BiGGAR Economics.

## 10.3 Operational Impacts

### 10.3.1 Staff Expenditure

In order to estimate the impact of staff expenditure it is first necessary to make assumptions about where staff are likely to spend their wages. These assumptions were based on input-output tables produced by the Scottish Government. The Scottish tables were used because they offer the most comprehensive source of this type of information available and provide a level of detail not available for the English regions.

These tables show that 93% of Scottish household consumption takes place in the UK and 74% takes place in Scotland. There is no reason to expect that the proportion of household income that Scottish residents spend in the UK would be significantly different from the proportion that English residents spend in the UK so it was assumed that staff at the University would spend around 93% of their income in the UK. The availability of goods and services within the Scottish economy is likely to be broadly similar to the availability of goods and services within a typical English region, even taking account of the region's connections with France; it was assumed that the staff would spend around 74% of their income in the Solent region.

At the time of writing evidence about the value of household expenditure at the sub-regional level was limited so it was assumed that staff living in Portsmouth spent 33% of their income in the City. This assumption was based on BiGGAR Economics previous experience of undertaking similar studies elsewhere in the UK and is consistent with other studies undertaken by BiGGAR Economics.

## 10.4 Innovation Support

### 10.4.1 Services to Businesses

The impact of the services that the University provides for businesses was estimated based on the assumption that the businesses that pay for these services would, on average, gain a 360% return on their investment. This assumption was based on the evaluation evidence summarised below.

In 2013 BiGGAR Economics undertook an evaluation of Interface, the agency responsible for brokering relationships between businesses (and other organisations) and universities in Scotland.<sup>42</sup> The connections that Interface has made covered a range of different types of activity, from consultancy projects and access to equipment and facilities to company sponsored PhDs. The BiGGAR Economics evaluation found that the costs to Interface's client of participating in the programme was £12.9 million and the direct benefit to these organisations was £46.4 million GVA. Therefore, the direct return to investment was 360%. In other words, every £1 invested by businesses generate £3.60 in direct economic benefits.

This finding is similar to other studies done in similar areas. In 2009 PriceWaterhouseCoopers LLP undertook a study for the Department of Business, Enterprise and Regulatory Reform,<sup>43</sup> which considered the impact of Regional Development Agency spending. One of the aspects of this report considered GVA returns to business development and competitiveness interventions between 2002 and 2007. This found that investments in science, R&D and innovation infrastructure had achieved cumulative GVA equivalent to 340% minus the costs of the project, and that this could increase to 870% if long-term benefits were taken into account. This suggests that the 360% multiplier estimated by BiGGAR Economics could be conservative.

### 10.4.2 Continuing Professional Development

Professional training is one of the ways that the University of Portsmouth can translate research expertise into professional practice. By providing such training the University can enable people working in a particular field to gain access to the latest thinking in their field, which can have a direct effect on their productivity. This effect can be measured in terms of GVA.

By enabling workers to become better at their jobs this type of training can also have a long-term benefits for business performance. By enabling businesses to offer new and improved products and services it can help them to attract new customers and by helping them to improve productivity it can also enable them to deliver better value for money for clients. Ultimately improved business performance leads to business growth, which can be measured both in terms of GVA and employment.

<sup>42</sup> BiGGAR Economics (2013), Evaluation of Interface, the knowledge connection for industry

<sup>43</sup> PriceWaterhouseCoopers (2009), Impact of RDA Spending - National Report - Volume 1

### 10.4.3 Student Placements

As with any employee starting a new job, it will take some time for a student on a work placement to become familiar with his or her new environment, colleagues and role. During this time the student's role in their host organisation will be mainly observational in nature as they "learn the ropes" from more experienced members of staff. The length of time required for this process will vary from student to student and business to business but as a general rule of thumb is likely to be around three months. For this reason, it was assumed that placements of less than three months duration would not generate any quantifiable economic impact for the host business.

(This is of course not to say that short placements have no value. Even short placements are likely to generate benefits for students, who will gain valuable work experience and professional contacts. Short placements may also benefit host businesses as well by enabling them to "get to know" potential new recruits; however, these benefits are not quantifiable.)

Once a student has been "shown the ropes" they would be able to make a substantive contribution to the host organisation but their lack of experience means that this contribution is likely to be significantly less than an experienced member of staff. (This difference is reflected in the gap that exists between entry level graduate salaries and salaries for experienced staff in most industries).

In addition to this, student placement programmes typically require host organisations to provide some level of supervision and support to students on placements. As this supervisory role is usually undertaken by an existing member of staff, student placements therefore have a knock on effect on the productivity of existing staff.

For these reasons it was assumed that the productivity of a student on placement might be around one third of the productivity of an experienced worker.

### 10.4.4 Incubators

As discussed in section 6.4, best practice dictates that in assessing the impact of an intervention it is important to consider the counterfactual – i.e. the situation that would have existed if the intervention had not occurred.

If the University did not exist then it is possible that some of the businesses that have been supported by these facilities would have either chosen to locate elsewhere instead or have experienced different levels of growth. It was therefore necessary to take account of this counterfactual scenario in estimating this impact.

In an ideal world evaluation evidence relating specifically to the two incubators would have been used to do this; however, at the time of writing no such evidence was available so it was necessary to rely on evidence from elsewhere. At the time of writing one of the most comprehensive sources of evidence available was a review commissioned by the UK government. The purpose of this review, which included a review of the relevant academic literature published since 2000,<sup>44</sup> was to identify models of incubation that set out to identify the models of business incubation that have the greatest impact on building high-growth, innovative firms.

<sup>44</sup> NESTA (September 2011), *Incubation for growth: a review of the impact of business incubation on new ventures with high growth potential*.

One of the studies cited in this report was a major European research study undertaken in 2002,<sup>45</sup> which suggested that:

- 16.9% of business incubator tenants felt that the support that they had received was “not important”;
- 60.6% felt that it was “important”; and
- 22.5% felt that it was critical.

It is reasonable to assume that if incubator facilities were not available then all of the tenants who felt the support was critical and some of those who felt it was important would not exist. It is impossible to know what proportion of the “important” group would not exist so for convenience it was assumed to be 50%. This implies that overall the impact of the tenants of any given business incubator might be around 50% smaller if the incubator did not exist (i.e.  $16.9\% + 50\% \times 60.6\%$ ). It was therefore assumed that, at the UK level, if the University did not exist the impact of the businesses that have been supported would be 50% smaller than it now is.

At the local level, if the University did not exist then it is highly unlikely that either of the two incubation facilities would have operated successfully. Given the shortage of suitable space elsewhere in Portsmouth then many of the businesses that have been supported would have been forced to locate outside the city and it is likely that those that chose to remain would not have been able to grow. For this reason it was assumed that the impact of all of the businesses that have been supported by the incubators was additional at the Portsmouth City level.

As the supply of space for young businesses is somewhat less constrained across the Solent region as a whole it is likely that the level of additionality at the regional level would be higher than the local level (but lower than the UK level). This was modelled by assuming that the additionality of the incubators was around 75% at the regional level.

<sup>45</sup> CSES (2002) ‘Benchmarking of Business Incubators.’ Sevenoaks: Centre for Strategy and Evaluation Services

