Brexit and Higher Education - An Analysis of Post Brexit Futures for the British HE Sector

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Contents

Abstract

In this dissertation, I set out to examine the effect of Brexit on key areas within the higher education (HE) sector and the key stakeholders within it. In order to do this I first identify three major areas of university activity, by drawing from works by Kerr (2001) and Collini (2012); the transfer of knowledge, the generation of new knowledge, and, social & cultural enrichment. I subsequently employ a bespoke methodology, drawing upon techniques laid down in the field of Scenario Planning by Fox (2018), Raspin et al. (2007), Schwartz (1998) and Wade (2012), to identify the areas of most importance within the three main areas of university activity and knit the resulting information together via a single narrative.

This methodology is then subsequently re-deployed in each chapter to identify both the major stakeholders in each area of activity and the principal driving forces behind them. With these elements identified I then begin an exploration of the impact Brexit could have, basing my analysis on 'signposts' - real-world occurrences and trends that help to outline possible future directions for key driving factors. The result is an insight into the possible futures Brexit could help to usher in for the HE sector and the choices ahead for universities, the sector as a whole and government.

1. Introduction

It is likely that June 23rd 2016 will forever be remembered as one of the most pivotal days in 21st century British history. It was the day the British public voted, by a margin of 3.8%[1], to leave the European Union and set in motion a chain of events that few would have believed pre-referendum, including; a snap election leading to a supply and confidence government, ministerial resignations, the pre-eminence of the European Research Group (ERG) within the Conservative party, multiple missed Brexit dates and the election of two new Prime Ministers. Since the referendum, the British political landscape has been reshaped multiple times. Whilst the consequences of this historic decision will only become clear years into the future it is important at this juncture to try and understand the potential impact of Brexit so that informed decisions can be made about the shape of the UK's future relationships outside of the EU.

Despite the uncertainty surrounding the long-term impacts of Brexit, news of the result of the referendum itself caused shockwaves around the world. The value of the Pound fell to its lowest value since 1985[2], an estimated $2 trillion was wiped off stock markets globally[3] and race-related hate crimes saw a 41% increase in the months following the vote compared to the same period just a year previous[4]. However, in the years since the referendum, some of these immediate impacts have diminished with the stock market recovering and hitting record levels. Whether or not there will be a similar cycle of crash and recovery once the UK leaves the European Union is a subject for debate and will very much depend on the nature of any future trade deals struck with the EU and other nations.

The HE sector has long been considered one of the UK's most successful exports, with international students generating £25.8 billion in gross expenditure and directly supporting 250,000 jobs across the UK[5]. The HE sector is also one of the most international - a large percentage of staff and students are non-UK citizens and universities maintain a vast number of research and exchange links with overseas institutions. Many current world leaders were educated in the British system extending British soft power across the globe. With the rise in anti-immigrant rhetoric and behaviour during the referendum campaign and after the vote, will international students and staff still be drawn to the UK or will they be tempted by other big hitters in the world of HE such as the USA, Canada or, increasingly, Australia. With UK universities supporting 3% of jobs nationwide and acting as a catalyst for £95 billion in expenditure[6] alongside

[1] The Electoral Commission (no date), *EU Referendum Results*. Available: https://www.electoralcommission.org.uk/find- information-by-subject/elections-and-referendums/past-elections-and-referendums/eu-referendum/electorate-and-count- information. (Accessed: 20/02/2017)
[2] BBC News (2016), *Pound plunges after Leave vote*. Available: https://www.bbc.co.uk/news/business-36611512 (Accessed: 20/02/2017)
[3] The Guardian (2016), *Brexit panic wipes $2 trillion off world markets - as it happened*. Available: https://www.theguardian.com/business/live/2016/jun/24/global-markets-ftse-pound-uk-leave-eu-brexit-live-updates (Accessed: 20/02/2017)
[4] Home Office (2016), *Statistical News Release: Hate Crime, England and Wales, 2015-16*. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/559065/hate-crime- 1516-hosb1116snr.pdf (Accessed: 20/02/2017)
[5] https://www.timeshighereducation.com/news/universities-generate-ps95-billion-uk-economy Accessed 01/02/2020
[6] https://www.timeshighereducation.com/news/universities-generate-ps95-billion-uk-economy Accessed 01/02/2020

their role in creating a skilled workforce, their fate will heavily impact the future prosperity of post-Brexit Britain. The UK's departure from the EU represents the biggest change to the status quo in a generation and in this piece of work what this means for Britain's HE institutions individually and collectively as well as the communities they serve will be examined.

The post-referendum period is one in which rumour and rhetoric abound and often obscure the facts of any given topic. This study aims to unpick fact from rumour, policy direction from rhetoric and in doing so present a considered view of the state of HE post-Brexit.

1.1 Setting the Scene

The purpose of this research project is to understand the effects Brexit could have on the UK HE sector and its activities. In order to do so, it was decided not to analyse the *process* of Brexit but rather to focus on the possible repercussions British HE Institutions (HEIs) may face *after* the UK has formally left the EU. This being said, a lot has happened in the years between the referendum in 2016 and the time of writing of this dissertation (July 2019) and these events are useful in providing a glimpse of what may be to come post-Brexit-day. Political declarations made on the side of negotiations, white papers outlining government policy plans, answers to written questions submitted to Parliament and historical data sets all provide snapshots of possible futures and will be used in the text, where appropriate, to add weight to statements made during the analysis.

To understand the effect of Brexit on HE it is first necessary to understand the various activities that take place under the guise of HE. These clusters of activities will then inform the focal points of the following research and subsequently the research questions themselves. The best way to identify the various activities associated with the HE label is by analysing the activities undertaken by universities. Universities are, among other things, places in which the various strands of HE coalesce and are *usually* concentrated into one administrative and geographical entity, though there are exceptions to this, for instance, the Open University and the increasing popularity of online courses. Given universities' administrative structures grow to support their various different areas of activity they act as useful mirrors to the various strands of HE activity more generally. This idea of a common focal point for multiple categories of activity is neatly summarised by Clark Kerr who describes universities as "*a whole series of communities and activities held together by a common name…"* (2001, P1.)[7].

If universities themselves are used as a mirror to the HE sector as a whole, the question then becomes 'what activities do universities undertake?' or, more broadly, 'what are universities for?'. Whilst political and social views of universities' place in society have changed over the centuries, their core activities remain remarkably unchanged. The most evident of these activities is identifiable from the intrinsic meaning of the word 'education'. Teaching, the transfer of knowledge from one generation to another, regardless of what the purpose of this may be, has been a staple of universities from their roots in ancient civilizations and can be considered the cornerstone of a

[7] Kerr, C. (2001), *The Uses of a University*. Cambridge: Harvard University Press.

traditionalist view of university activity. However, as Stefan Collini (2012)[8] notes, universities have evolved much over the past decades and the term 'university' is now applied to a varied assortment of post-secondary education institutions, each with their own goals and social missions. Aside from the teaching elements of university activity, Collini promotes the idea of 'social mobility' as a guiding tenant for today's universities, therefore raising the prospect of universities as institutions with a mission to enrich students, not simply academically, but by providing a range of opportunities students would not otherwise have had access to. Economists such as Kerr however, proffer a different view of universities and their missions. Whilst still believing that universities exist for the public good Kerr measures this in a different way to Collini, arguing that "*new knowledge is the most important factor in economic and social growth*" (2001, P. XII). This evokes a vision of universities whose principal aim is to generate new knowledge.

Given the above it is possible to summarise that there are three main areas of activities universities focus on; the transfer of academic knowledge, the generation of new knowledge and social & cultural enrichment and it is these broad areas that will shape the research questions. Whilst there are undoubtedly multiple other activities that could be said to form parts of university activity, and therefore are covered under the term 'Higher Education', they are generally subsets of the broad groupings of activities identified here.

1.2 The Research Questions

When imagining the concept of the transfer of knowledge, an age-old scene naturally comes to mind - that of the teacher and students. This concept of learning as a flow of knowledge from one generation to the next is one that has existed for millennia and indeed is one most of us are personally familiar with. Whilst other forms of learning, such as peer-to-peer and independent study have become recognised and encouraged in recent times, teacher to student learning remains the backbone of today's education systems and the most common form of knowledge transfer within educational institutions. In the context of HE, this image rings as true as it does for primary and secondary education, though there is certainly more emphasis on novel forms of knowledge transfer such as peer-to-peer learning and independent study within HE, especially within the British system. With this in mind, it is relatively straightforward to identify the main drivers of knowledge transfer in the British HE system as students and staff. With no academic staff, an institution's ability to provide knowledge transfer in the traditional top-down sense is limited, with peer-to-peer learning and independent study likely the only instances of knowledge transfer available. With no administrative staff, the burden on academic staff to carry out these functions could lead to less time dedicated to both knowledge transfer and knowledge generation activities (teaching and researching). Without students, an institution is once again left with peer-to-peer learning and independent study as the only instances of knowledge transfer. Given the importance of passing knowledge down through the generations, rather than within them, to a university's core mission, especially in the context of today's tuition-fee driven financial model, the first research question will tackle the subject of 'How will Brexit affect the recruitment and retention of students and staff?'

[8] Collini, S. (2012), *What are Universities for?* London: Penguin Books

The generation of new knowledge through research activity often occupies a hallowed position within universities as there can be both social and economic benefits attached to its outcomes as well as individual prestige for academics. Over the past few years, the generation of new knowledge has become increasingly important in the political sphere with politicians on all sides touting the benefits of the British 'Knowledge Economy'. Perhaps the most concrete example of this is the Conservative government's Industrial Strategy which highlights technological advancements as the key to British competitiveness post-Brexit. Given the role of research in generating new ideas that can be used for economic, social and political gain as well as its importance to individual institutions because of the prestige, and funding, it can generate means it will be the second area analysed in the dissertation. This analysis will be undertaken via the question 'How will Brexit affect research?'

The third area previously identified as being core to a university's mission, the social and cultural enrichment of its students, is a more complex area to convert into a single research question. This is because the types of activity this area covers are, in many ways, linked either intrinsically or causally to the effect Brexit has on students and staff[9]. These areas include; social mobility, curriculum content, and opportunities to experience new ideas and cultures, of which the extent and shape depend heavily on the demographic make-up of university populations as well as the financial strength of individual institutions. Given these indicators vary significantly from one institution to another they are difficult to analyse on a generalised scale. This being said, one particular type of non-academic enrichment activity does lend itself to study given its ubiquitous presence in almost all institutions.

The international exchange has long existed within universities but has recently grown to the stage where it is accessible to almost any student studying at almost any institution in the UK. It is an outward-facing activity which distils the various strands behind the idea of social and cultural enrichment and as such will be the focus of the third research question – '*How will Brexit affect international mobility?'*

[9] Students are the biggest generators of income for universities and so any fluctuation is their numbers will have an impact on non-core activities such as outreach programmes, student's unions and student support services. The same is true of staff as, whilst not income generating, these enrichment activities take time and expertise perhaps not readily available to core academic staff.

2. Literature Review

At the time of writing Brexit day, along with all the possible changes it could usher in, continues to be a future phenomenon. As such, little serious academic work has been conducted on the potential effects of Brexit on HE in the UK. Those research pieces that do exist are largely short articles found in academic journals and, for the most part, are speculative, drawing upon specific points of policy, funding arrangements and the previous experience of the author.

Journalistic sources are very much the most readily available, and contemporaneous, sources related to Brexit. Their highly reactive nature and the speed at which they are churned out by newsrooms across the country means they are a useful source for tracking changes in the Brexit landscape. However, the fact that they are produced for rapid mass-consumption and tend overwhelmingly to be designed to increase the paper's readership and bottom line means that they are often reactionary, sensationalist and partisan in nature, making them biased sources.

Official government position documents and white papers can help to give a more anchored, realistic view of the situation whilst answers to written questions submitted to ministers provide clarification to contentious or ambiguous areas. However, all of these governmental sources of information quickly become out-dated as ministers change roles, or resign, and various stakeholders jostle for position in national and international negotiations.

In order to conduct a robust and unbiased study, it is necessary to understand the pros and cons of the different types of available qualitative information as well as the suitability of individual sources themselves. In order to choose the most relevant and suitable sources on which to base the analysis in the following pages, it is necessary to define and adhere to robust inclusion and/or exclusion criteria when evaluating a source.

One well-known set of criteria for evaluating the suitability of secondary sources of qualitative data was laid down in John Scott's 1990 work *A Matter of Record: Documentary Sources in Social Research.* In it Scott proposes four elements to consider when deciding upon whether or not a secondary source is suitable for use in academic analysis[10]; Authenticity, Credibility, Representativeness and Meaning.

- The *Authenticity* of a source is determined by the status of its author and/or the organisation it comes from.

- The *Credibility* of a source depends on its level of bias - was the source written for a specific purpose?

- The *Meaning* of a document relates to how well the researcher will be able to understand the text - is it written for a specialist audience with associated jargon or is it more accessible

[10] Scott, J (1990) *A Matter of Record: Documentary Sources in Social Research*. Cambridge: Polity Press

to a non-specialist audience?

- The *Representativeness* of a source is measured by how well it captures the objective reality of a situation. This is intrinsically hard to measure and so Scott posits two measures of representativeness; how easy the document is to find - its availability - and how long it is considered relevant for - its survivability. However, with the advent of the internet and digital archiving of documents in the public domain, these two measures of the representativeness of a document become less indicative.

Given the now prolific nature of internet-based sources, an update for Scott's criteria is required to ensure the digital resources consulted to aid the analysis contained in this dissertation are suitable. Such an update can be found in Stuart Stein's 2003 book[11] *Sociology on the web*, in which he posits Authorship, Authority of the author, Authority of the material, Authority of the site/organisation, and, Pressure groups/objectivity as tests of a source's suitability for use in an academic setting.

- *Authorship* refers to the possibility of identifying the author of a particular piece of information. Does the source in question name a specific person as the author?

- *Authority of the author* refers to the subject-specific knowledge of the author of the source in question. If the source talks about higher education, for instance, is the author knowledgeable on this subject?

- *Authority of the material* refers to how similar the information is to information on the same subject from other sources. Can what is said in the source in question be verified by other sources?

- *Authority of the site/organisation* is essentially the same as the authority of the author criterion except the question is asked of the organisation or site that hosts the information.

- *Pressure groups/objectivity* is simply that. Is the information being published by the author and/or organisation in order to influence opinion in some way?

Whilst it is almost impossible to find a source that fully satisfies all of the criteria laid down by Scott and Stein in their respective domains - written text and digital sources - it is possible to use them as criteria with which to judge the suitability of the sources that will inform this dissertation. All of the sources used in this dissertation were judged not to hold heavy biases and the information found within them was consistent with that from other relevant sources.

What follows here is a short breakdown of the types of qualitative sources used in this dissertation, their pros and cons, and a few examples of considerations given to the inclusion/exclusion criteria when evaluating sources from each of the categories.

[11] Stein,S. (2003) *Sociology on the Web: A Student Guide*. Edinburgh: Pearson Education.

2.1 Journalistic Sources

Journalistic sources are those that contain information collected or reported by any commercial media organisation, including print newspapers and their online counterparts. This category includes academic journalism i.e opinion pieces and op-eds by academic figures published in/on mass media platforms such as newspapers, radio and TV. As these organisations exist to make money they usually contain a high level of both implicit and explicit bias and alter their reporting of stories to either appeal to their base or to reach as wide an audience as possible through sensationalism. This means that journalistic sources often fall foul of Scott's *credibility* criterion and Stein's *objectivity* criterion.

However, not all journalistic sources should be discarded as they are often the most *contemporaneous* sources of information when dealing with a research subject that is constantly developing. There are a number of nuances within the field of journalistic sources, for instance Tabloid papers often employ sensationalism to appeal to as wide a section of the population as possible and are often accused with misrepresenting facts or events whereas Broadsheets are commonly thought of as more fact-based and less sensationalist to tabloids. There are also specialist publications such as the Times Higher Education supplement and PIE News who focus on reporting developments within the HE sector. These specialist papers, therefore, score well in Scott's *authenticity* criterion and Stein's *authority of the organisation* criterion. Journalistic sources also score well in another area - *meaning*. They are generally written for large-scale consumption and for the most part, avoid confusing jargon making them easily understandable.

For the reasons outlined above, journalistic sources are used within this body of work, though recognising their inherent biases, are only used to evidence real-life instances of hypotheses put forward by the researcher and to verify information found in other source types. will be kept to a minimum and they will not be used to support important elements of analysis.

2.2 Sector Sources

This type of source refers to any document compiled or published by an organisation that is non-governmental, non-journalistic and is either directly linked to the HE sector through its own activities, such as Universities UK, or indirectly through the nature of temporary activities, such as being commissioned to produce a study or report[12]. It also includes those academic works written on relevant areas of Higher Education, such as works by Clark Kerr (2001) and Stefan Collini (2012).

Documents that fall into this category are far from uniform and are produced by both for-profit organisations, such as Quacquarelli Symonds, and nonprofit organisations such as The Royal Society. Whilst for-profit organisations have a vested interest in producing content that generates revenue, and therefore tend to have a propensity towards some kind of bias, nonprofit sources

12 The independent panel set-up to carry out the Augur review would be an example of this.

are not free from bias either. For instance, some sectoral sources are produced by organisations whose remit includes influencing government policy, such as pressure groups or think-tanks and who therefore have an interest in presenting information favourable to their point of view. These sources should not, therefore, be automatically considered as suitable for use in academic study as they may infringe the *credibility/objectivity* criteria mentioned by Scott and Stein.

However, sectoral sources tend, on the whole, to contain less bias than journalistic sources whilst still presenting many of the same benefits. They are generally easily accessible and often written with a non-specialist audience in mind, making them *meaningful* sources. In addition, some organisations, such as Universities UK (UUK) and The Royal Society, count amongst the most prolific publishers of Brexit-related information and analysis relevant to the topic under discussion in this thesis and therefore sector sources also often meet Scott's *contemporary* criteria. Given their focus on a specific sector, sectoral sources also implicitly fulfil the *authenticity* and *authority of the organisation* criteria.

Due to their availability, contemporary nature, meaningfulness and authority, the majority of sources used in this dissertation fall into the sectoral category.

2.3 Governmental Sources

This type of source consists of a variety of different information types, from statistical databases and reports to White Papers, answers to written questions and ministerial statements. Whilst again less intrinsically biased than journalistic sources governmental sources are not free from bias as the nature of politics requires at least some spinning of information in a way favourable to the party in question.

There is a large amount of variation in the bias implicit in the differing types of governmental sources. For instance reports from the Office for National Statistics are likely to be less biased than a press release by a member of the Cabinet. As such governmental sources cannot automatically be considered as meeting Scott and Stein's credibility/objectivity criteria. Almost all governmental sources are, however, *authentic* and *authoritative* and this is their main benefit. Where this type of source falls down slightly is in its *contemporaneousness*. White papers and official reports take time to commission, research, write and publish meaning they can often be behind the curve. Ministerial statements, answers to written questions and press releases are more *contemporary* sources yet generally lack the depth of analysis and are more prone to bias. Governmental reports can also be less *meaningful* than other sources as they can contain a level of specialist jargon.

3 Methodology

Undertaking a research project on the effects of an event that has not yet happened is a difficult task as there have been no direct consequences to analyse. In researching the effect of Brexit on the British HE sector, two main issues complicate the analysis; the lack of reliable, unbiased and contemporary sources, as mentioned in the literature review, and, the uncertainty of the wider future relationship with the EU post-Brexit.

In an ideal world, quantitative data would be plentiful and qualitative data such as government / EU policy positions would then be used as a filter to extrude future possibilities from existing trends identified in the quantitative data. However the qualitative data needed to underpin many of the scenario planning exercises used in this thesis does not yet exist, as the events that this data would measure have not yet happened, nor are any of the qualitative sources robust enough to act as a filtering lens. Additionally, the shape of the future EU/UK relationship is not yet clear and posturing from both sides makes it hard to tell which pronouncements are genuine negotiating positions. In the face of this lack of data and a stable political landscape the questions for this dissertation are; how to gather relevant information? and, how to construct a robust lens through which to analyse this information? This section details the methodology put in place by the researcher in order to answer these questions.

3.1 Anchoring the Present

At the heart of this dissertation is a future-gazing exercise - an attempt at identifying what the future impacts of Brexit could be before they happen - and as with any attempt at looking into the future there first needs to be a solid understanding of the present. It was previously noted that because Brexit has not yet come to pass there was no data from which to extrude potential futures. Whilst true, it is possible to build an accurate picture of what life was like before Brexit became a realistic possibility thanks to the existence of data archives. Using these archives it is possible to construct an image of what constituted ‘normal’ before the Brexit vote.

Once this baseline of ‘normality’ has been established it is then necessary to find a way of getting around the absence of any reliable indication of what the future relationship between the EU and UK could realistically resemble. This hurdle can be somewhat overcome by the use of a proxy situation, something that was similar enough to Brexit to provide a glimpse of what the real thing may look like.

The referendum in 2016, or rather what has happened in the years since provides such a situation. As mentioned in the introduction to this dissertation the referendum wiped trillions off stock markets around the world, as they priced in worst-case scenarios. Markets recovered fairly swiftly, however, the referendum marked the start of a more profound shift that would prove harder to move on from, for not only did the referendum represent a change for the markets but also for the roughly three million EU citizens living in the UK and the one million UK citizens living in EU

countries and they were not so quick to shake off the uncertainty of what this might mean for them.

In the wake of the referendum result, a series of socio-economic trends have emerged and provide an insight into both what the idea of Brexit has already caused and also what it may cause in the future. Of course, extrapolating the trends that have emerged post-2016 past Brexit day and claiming they will stay the course is overly simplistic and ignores the many intricacies of the situation at hand. To avoid over-simplification of the potential effects of Brexit carefully selected qualitative data will be used to transform and re-shape these trends into a narrative that will, hopefully, resemble something of a more accurate picture of the future. Given the number of different elements to be brought together in this dissertation in order to present a rigorous analysis, a robust methodology must be employed to ensure the narrative presented in the following pages is more than a story-telling exercise.

3.2 Scenario Planning Techniques

There are numerous strategies and methodologies available in the area of future-gazing, ranging from those heavily reliant on numerical data to those that take a scenario-based approach. Statistical or quantitative modelling techniques tend to involve assigning a statistical probability to a certain action or outcome and then plugging this data into an algorithm to find the most likely outcome, and/or range of outcomes.

Whilst it is possible to assign a statistical probability to the individual elements that will come together to shape post-Brexit Britain, given the frequently shifting standpoints of the parties involved it would be hard for the assumptions that form the baseline of this type of modelling to be accurate over the medium and long term. What is needed in this context, therefore, is a more flexible, scenario-based approach to forecasting.

As with a quantitative approach numerous techniques have been developed within the field of scenario planning, however, perhaps the area where this type of future-gazing has sustained the most academic study is within the business world. It is likely that scenario planning has experienced a high level of sustained academic research due to its importance to organisations of all scales, be they small business, multinational companies, charities or government agencies and it is the combination of this ubiquitous everyday usability combined with a sustained and detailed academic study that makes this field make a good place to look for a suitable methodology for this particular study. However, the ubiquitous-ness of scenario planning also has its downsides, as each of the many different methodologies available comes with their own unique pros and cons. In order to select a suitable methodology for this dissertation is was important to understand that the overarching aim of this piece of work is not to identify a perfect image of the post-Brexit future but rather to generate a realistic idea of what this may look like by taking into consideration Brexit's impact on fixed points of interest and influence, therefore allowing for a more grounded overview of the possible future direction of the British HE sector.

Scenario planning techniques are mostly focussed on business or managerial questions, something the subject of this dissertation is not, and therefore a synthesised methodology is called for, drawing on elements that multiple authors within the field consider core to the scenario planning process, whilst removing those elements that were specifically designed for a business context, for instance being aligned to customer needs or understanding and integrating a specific set of business goals into consideration of the future.

The first step in the creation of this synthesised methodology comes from the 1998 version of Peter Schwartz's work *The Art of The Long View* in which he describes scenarios as tools for analysing perceptions based on carefully constructed 'plots' revolving around significant elements of the current situation[13]. This ties in nicely for this dissertation's need to identify anchor points in pre-Brexit Britain augmented with indicators of possible future direction which are not as stable. Put simply, scenario planning represents a way to bring a sense of order to unpredictable situations by basing analysis around identifiable trends in important areas that influence the subject of study.

The process for identifying these areas of influence has been influenced by Woody Wade (2012)[14] and Claire Fox (2018)[15], both of whom argue that a thorough understanding of the current situation is necessary for a robust analysis of any potential future activity, with Wade suggesting this is best served through the identification of important stakeholders supplemented by the defining of overarching questions which serve to limit the scope of analysis (p.31). To this, he adds the gathering together of all relevant sources of information. The relevant stakeholders to this study along with a definition of the overarching research questions have been laid out in the introduction and the literature review.

In order to identify the most important elements related to the research questions, Fox (2018) suggests the use of any of a number of common strategic analysis tools such as SWOT, PEST or a Boston Matrix. Wade (2012) favours a PEST analysis and that is the tool that shall be employed here given that the majority of the impacts caused by Brexit will either be Economic, Political or Social in nature. The use of a PEST analysis, therefore, allows for a more accurate mapping of these influences on the wider objects of study. A table showing a sample of possible Political, Economic, Social and Technological factors within the HE sector that could be influenced by Brexit is shown in Figure 1;

[13] Schwartz, P. (1998), *The Art of the Long View: Planning for the future in an uncertain world*. Chichester: John Wiley and Sons

[14] Wade. W. (2012) *Scenario Planning; A Field Guide to the Future.* New Jersey: John Wiley and Sons Inc.

[15] Fox, C. (2018), '(Business) Planning for the future', *Legal Information Management*, 18, PP. 233 - 239. doi:10.1017/S1472669618000488

Political	Economic
- Govt. Industrial Strategy - Post-Brexit Immigration Policy - HE as a free market - Govt. Trade Policy - The outcome of Brexit negotiations	- Access to funding - Tuition fee income - Staffing costs - Recruitment costs
Social	**Technological**
- Institutional prestige/reputation - Perception of the UK in general - Ability to hire and retain staff - Ability to attract and retain students - Student and staff mobility	- Intellectual property rights - Data protection - Advances in EdTech

Fig.1 Example PEST Factors

Once the PEST factors have been identified, it is then necessary to identify the most influential of these upon the outcomes associated with the previously identified research questions as this will help to narrow the scope of the study to those elements with the most impact. It will then be possible to study these elements using the narrative methodology described earlier - identifying the current situation, identifying proxy trends and interpreting these through relevant contemporary events.

Wade provides a useful tool for identifying these influential areas - something he calls an impact/uncertainty matrix. This is achieved plotting the elements identified in the PEST analysis on a chart ranking both their level of uncertainty and their potential impact on the topic of study. Those elements which are both highly uncertain and have a high potential impact are known as ‘critical uncertainties’ and form the basis of further study. An example of this using the areas identified in the above PEST analysis is available in figure 2 for reference.

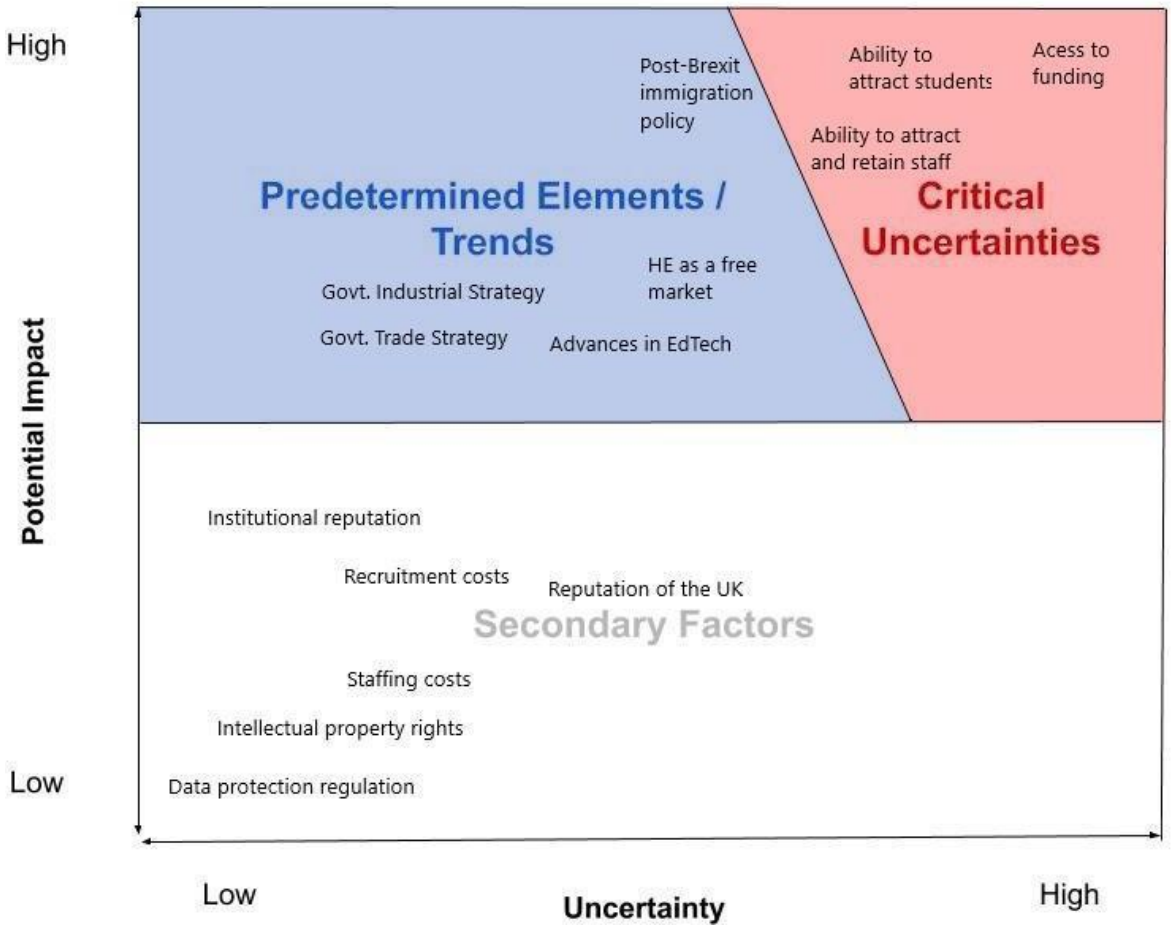

Fig.2 Example Impact/Uncertainty Matrix

3.3 The Use of Primary Data

Whilst most of the information that informs this dissertation comes from secondary sources, it became apparent fairly shortly after undertaking a review of existing sources that an important type of information was missing from all of them. Whilst much had been written about the perception of the UK on the world stage following the Brexit vote, relatively little empirical research had been conducted on how this could affect the HE sector at the time this study was conceived, aside from a few longitudinal analyses of student application and enrolment numbers.

It was therefore necessary to conduct primary research in order to collect statistical data which, at that point, had not been collected elsewhere, as well as to better contextualise and corroborate existing causal hypotheses. This was achieved through two complimentary surveys which targeted differing sets of stakeholders within the HE student body at the University of Kent, full-time international (non-UK) students and short-term exchange students.

3.3.1 Question Creation

The main purpose of the surveys was to provide quantitative data that could be used to support or disprove popular hypotheses that were circulating within the HE community at the time. In order to generate this kind of data most of the possible responses to questions included in the survey were limited to simple yes/no, multiple choice or Likert-scale which allowed for amalgamated data to be reported numerically. Several free text answers were also permitted to allow for additional qualitative information where it was felt this would add value.

The surveys were distributed in November 2017 and were not piloted amongst a small group of the student body prior to being released to the wider student population. This was due to constraints imposed by the gatekeepers of student contact information. The Directors of International Recruitment and Exchanges & Study-Abroad required sight and sign-off of the questions before allowing them to be distributed amongst students. There was therefore little room for flexibility or changing of the questions in line with any possible pilot group feedback.

3.3.2 Data Capture

It was felt that a self-completed online questionnaire, distributed via email would be the best option for this particular project as the chosen distribution method increased the number of potential respondents and cut out the need for the researcher to be physically present which, in turn, reduced the possibility of the researcher subconsciously affecting respondents' answers.

A request for participants for the international student survey was sent out through the Kent Graduate School Newsletter, through emails to international-focused student societies and through the nationality-specific student mailing lists maintained by the International Student Recruitment Team. A similar request for the exchange student survey was sent out via email making use of the records kept by the Kent International Exchanges Team. In total 228 responses were received, with an average completion rate of 89.4%.

Participants completed the surveys online and the platform used automatically recorded and collated their responses. The platform helped to minimise the non-completion rate by making the process of responding quick and easy and aided interpretation of the data by not including incomplete survey data in the collated figures. Additionally the platform stopped multiple responses by the same respondent via IP tracking. It also allowed filtering by responses to a specific question thus aiding deeper analysis and trend identification.

Whilst there are a number of advantages to a self-reporting method, some of which have been highlighted above, there are also a number of disadvantages. Firstly the anonymity of the survey and its online delivery method do not allow for any detailed follow-up with respondents, subsequently reducing the possibility of more in-depth qualitative analysis of any points of interest. Secondly, though the chance of researcher-influenced bias was minimised, self-completion

surveys often have a tendency towards unintended respondent bias, as those stakeholders who respond to a survey may share similar characteristics compared to those who chose not to complete the survey and therefore may have a proclivity towards similar answers. This could lead to a non-representative sample.

All of the students surveyed had either already spent time in the UK or were currently in the UK, potentially leading to a biased outlook and the Kent-centric nature of the respondent sample means the data derived from it cannot automatically be considered representative of the wider international student population as a whole. This latter point was somewhat compensated for by corroborating the data collected through the surveys with similar, larger data-sets collected by third parties which became available during the course of writing the dissertation. This cross-referencing allowed for a certain level of validation of the primary data, however given the questions asked in the third party questionnaires did not exactly match those asked in the researcher's own surveys meant a full validation of the results was not possible. A copy of the questions asked in the surveys is available in Appendix 1.

3.3.3 Breakdown of survey respondents and completion rates

Survey Name	Target Audience	Total Responses	Full Responses	Completion Rate
Exchange Student Survey	Students participating in, or who had just completed, a study abroad placement at Kent.	142	132	92.9%
International Student Survey	International students who are currently studying at undergraduate or postgraduate level for a full degree at Kent.	86	72	83.7%

Fig.3 Table of survey respondents and completion rates

3.4 Methodological Conclusion

Whilst there is no air-tight way to predict the future, what scenario planning methodologies do provide is a way to identify the main structural elements that are likely to play a significant role in shaping the future of a particular object of study, be it an individual product, organisation or sector. They also provide a toolkit to help identify the smaller, more granular, factors that influence those larger structural elements. Some also offer a framework for bringing together all of this information in a meaningful and logical way.

It is not this intention of this study to lay out the *most likely* version of the future, but rather to highlight potential directions of travel. It also ignores significant contextual information, for instance the outcomes of the Augur review, as any analysis including this information would dilute and confuse the object of study here, which is already rather nebulous. This dissertation therefore aims to serve as a guide to what could be reasonably expected to happen within a vision of the future limited by the driving forces of the topic at hand and should be viewed as such.

4 Brexit and the Transfer of Knowledge

Higher Education is no longer solely a national endeavour but has evolved into a global industry and subsequently has become a key element in many countries' economic and industrial policies. Encompassing students, staff, and private enterprise, activities undertaken in universities around the world have a profound impact not only on the communities around them but also on a global scale, changing the lives of millions of people through innovation and discovery.

The United Kingdom along with the US and Canada has long been considered one of the world's educational powerhouses but now faces increasing competition from Australia, Europe and Asian countries keen to make a name for themselves as regional centres for educational excellence[16]. In this shifting economic and political environment, will Brexit affect the UK's ability to maintain its place as an aspirational destination for all learners and potential staff members? As such, the overarching question for this chapter will be 'How will Brexit affect the recruitment and retention of students and staff?'

The main stakeholders implicated in this section are students and staff members, however there are various different categories within these broad definitions and these micro-demographics will play an important role in determining possible future directions. These include; current students/staff, prospective students/staff, EU students/staff and non-EU students/staff amongst others. Any effect Brexit may have on these demographics will have repercussions for other stakeholders such as HEIs themselves, local businesses and local residents and these areas will also be explored in this chapter as they are also effects of Brexit.

Whilst there will certainly be ramifications for British students and staff members post- Brexit they generally either stem from or are exacerbated by elements outside of the scope of this study, such as the recently released Augur review into the HE sector. This section will therefore more heavily focus on those factors that strongly influence the decisions of international students and staff.

4.1 Gathering Information

The HE industry has grown immensely over the past few years and now represents one of the UK's biggest service sector exports, directly contributing over £21billion to UK GDP in 2014/15 alone and representing 1.2%[17] of total Gross Domestic Product. The sector also directly supports over 900,000 jobs and is responsible for £95 billion in indirect benefits for the UK economy. These numbers showcase the importance of the HE sector not only to the UK as a whole but to the local communities and support industries that have grown up around them.

[16] According to the QS Enrolment Solutions International Student Survey 2018, students considering studying in the UK will consider, on average, three other study destinations, with the most popular benign Australia, the US, Canada, Germany and the Netherlands. QS Enrolment Solutions (2018) *International Student Survey 2018*. Available: https://www.internationalstudentsurvey.com/international-student-survey-2018/ (Accessed: 06/07/2019)

[17] Universities UK (no date), *Higher education in numbers*. Available at: https://www.universitiesuk.ac.uk/facts-and-stats/Pages/higher-education-data.aspx (Accessed: 23/05/2019)

Students are the main driver of this economic benefit, both structurally and financially - in the 2017/18 academic year students were responsible for almost £19 billion of a total of £38.2 billion in university income, representing 49% of all university funding[18]- and without the money they spend on food, accommodation, leisure activities, transport and more universities would not be able to boast such a level of wider economic benefit.

Students are without a doubt a necessity in the HE sector and therefore one of the most important elements to consider when discussing the impact of Brexit on HE, however, whilst all students generate income for universities, not all types of student generate the same level of income. For instance international students (currently non-EU) pay fees roughly 33% higher than UK/EU domiciled students[19] and therefore represent a more 'valuable' income source for Universities. This has been especially true since changes to the HE funding system introduced by the coalition government in 2012, and the subsequent removal of student number restrictions in 2015, as universities have been free to capitalise on this group of students to fund expansion plans or to subsidise loss- making activities. International students are valuable to the wider UK economy too. In 2014 - 15 "*spending by international students and their visitors generated £25.8 billion in gross output for the UK economy*" (Universities UK, 2017)[20], and subsequently supported over 206,000 full-time jobs across the country. In the 2017/18 academic year 14% of the 2.34 million students enrolled in HE courses in the UK were non-EU, non- UK nationals[21].

All non-UK students, regardless of the level of fee they pay, provide valuable intangible benefits to both universities, their student bodies and the wider community. For instance, students who have previously studied in the UK are 15% more likely to invest in the country after graduation than those who did not[22]helping to project British 'soft power' abroad by contributing to closer economic and cultural links between the UK and other countries. A striking example of this is the fact that 57 current world leaders from 51 countries have previously undertaken higher-level education in the UK[23].

International students (including EU and non-EU) provide a multicultural experience for all students, giving them an awareness of viewpoints they may not have otherwise encountered thus improving their cultural education, levels of tolerance and helping them to adopt a critical approach to received wisdoms and information. This is also true of international staff, who arguably provide more of this type of benefit than international students as they tend to be in the country for longer, are better educated and in positions where their ideas and viewpoints are more effectively spread across the entire student population.

[18] Universities UK (no date), *Higher education in numbers*. Available at: https://www.universitiesuk.ac.uk/facts-and-stats/Pages/higher-education-data.aspx (Accessed: 23/05/2019)
[19] Assuming an average UK fee of £9000 and an average international fee of £12,000. Averages pulled from: Lofts, N. (2018), *A guide to UK tuition fees and student visas: Preparing for university as an international student.* Available at: https://www.timeshighereducation.com/student/advice/guide-uk-tuition-fees-and-student-visas-preparing- university-international-student (Accessed: 23/05/2019)
[20] Universities UK (2017), *The economic impact of international students.* Available at: https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Pages/briefing-economic-impact-of-international- students.aspx (Accessed: 23/05/2019)
[21] Universities UK (no date), *Higher education in numbers*. Available at: https://www.universitiesuk.ac.uk/facts-and-stats/Pages/higher-education-data.aspx (Accessed: 23/05/2019)
[22] Wigmore, T. (2016), *Brexit poses threat to UK higher education business.* Available at: https://www.politico.eu/article/why-brexit-threatens-the-uks-business-of-higher-education-visa-student-immigration/ (Accessed: 14/12/2017)
[23] Hillman, N. (2018), *UK slips behind the US, which takes the number one slot, for educating the world's leaders.* Available at: https://www.hepi.ac.uk/2018/08/14/uk-slips-behind-us-takes-number-one-slot-educating-worlds-leaders/ (Accessed 06/07/2019)

According to the latest Higher Education Statistics Agency (HESA) release[24] there were 429,560 people employed directly in the HE sector on the 1st of December 2017. As with students, demographic makeup of the staff body is important when discussing potential Brexit impacts as certain changes will affect varying demographics differently and so it is important to understand the distribution of staff within differing role types.

The split between academic and support staff is fairly balanced with 49% employed on academic contracts and the remaining 51% on non-academic contracts. However, the makeup of these two micro-demographics was quite distinct. Amongst academic staff, 18% were EU nationals and 13% were non-EU nationals with the corresponding percentages amongst non-academic staff standing at 7% and 4% respectively.

Though international staff aren't direct income generators like international students, they are still deeply beneficial to the HE sector. This benefit is mostly derived from intangible effects such as helping to widen student horizons by exploring different viewpoints, sharing personal experiences of global issues and allowing students to see events through a different lens, allowing for a more open discussion of contemporary issues. In addition to this, non-UK staff also act as conduits for knowledge sharing between countries, helping to increase international cooperation and helping to ensure British research remains competitive on the global stage- something that has wide reaching benefits beyond academia. By increasing cooperation with other countries, sharing expertise and collaborating on emerging technologies, British universities are able to create jobs in new or emerging sectors, helping to revitalise flagging areas of the economy and improve the lives of people around the world - by helping to improve understanding of disease, increasing food security and encouraging healthy ageing for example. Hiring non-UK workers can also help to bridge any skill gaps within the UK HE sector - given that academic roles often require more specialised skill sets than non-academic roles this may help to explain why non-UK staff are proportionally better represented in academic posts than non-academic posts.

4.2 Identifying the Driving Factors

There are a number of factors which drive students and staff members to study or work at a UK HEI or within the wider higher education sector. Before these factors can be put into a PEST analysis as required by the methodological approach it is important to understand in a little more detail what process non-UK based students and staff go through when deciding whether or not to come to the UK. No decision making process is linear, and each student or staff member will have undergone a decision journey that is unique to them. As such, a generalised decision making process is impossible to describe. This being said, there are common factors that most students or staff will take into consideration at some level and an attempt has been made to identify these and distil them into two *decision matrices* in order to help illustrate what is more of a complex network of, often competing, forces than it is a singular process.

[24] HESA (2019), *Higher Education Staff Statistics: UK, 2017/18*. Available at: https://www.hesa.ac.uk/news/24-01- 2019/sb253-higher-education-staff-statistics. (Accessed: 23/05/2019)

To this end current Kent students were asked to explain why they had chosen to study in the UK as part of a larger survey aimed at understanding their perspectives on Brexit. Answering multiple choice questions and ranking their opinions on a scale of 1 - 5 students were asked a range of questions around their views of the UK, the HE sector, the influence of the media and other study destinations. The idea behind this was to build up a complete picture of how students were influenced by differing elements and which of these they placed the most emphasis on when deciding where to study. To the question 'What was your principal motivation to study in the UK?' the students' answered as follows;

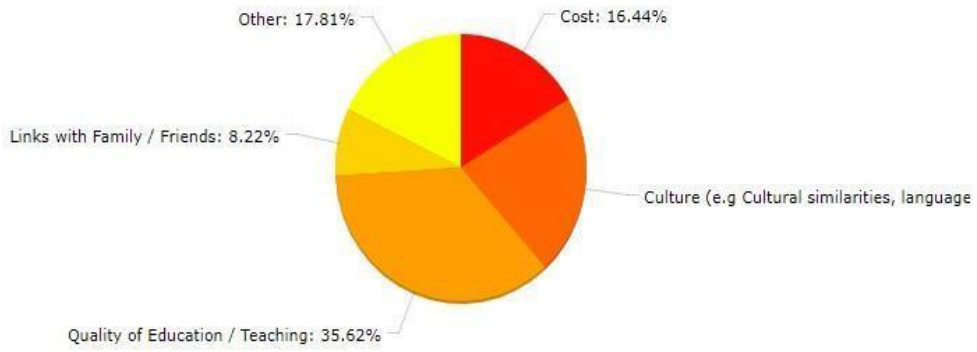

Fig.4 Pie Chart showing the principal motivating factors of students when deciding whether to study in the UK

What this chart shows us is that respondents were mostly driven by the quality of education they would receive, followed by attraction to British culture, then 'other' factors. Cost and links with family and friends came in fourth and fifth place respectively. Taking the students' answers as a cue, six main categories of influencing factors were defined; Added-value Factors, Cultural Factors, Economic Factors, External Factors, Personal Factors, & Relative Factors. These factors can then be split into further subsections, giving a completed 'decision matrix' as illustrated in Fig.5;

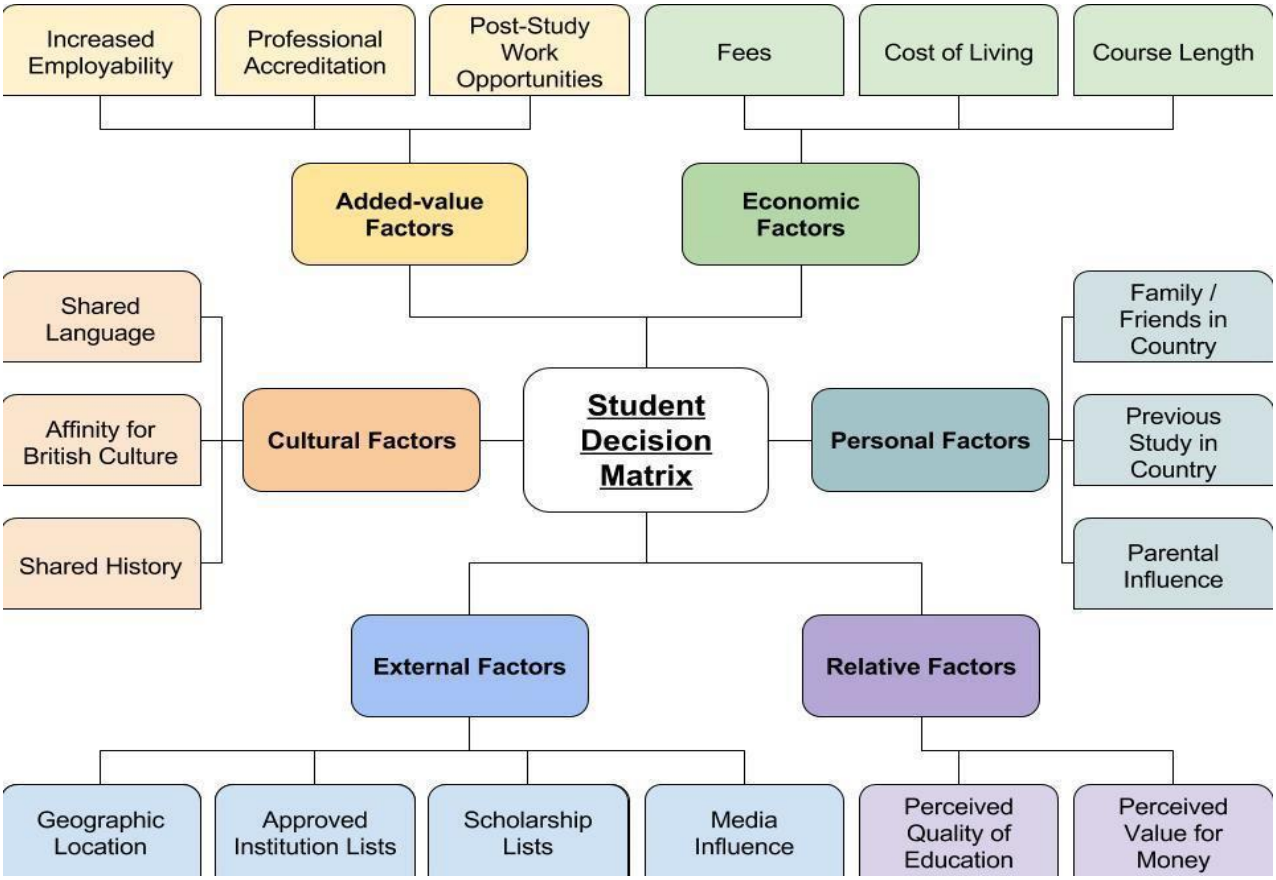

Fig.5 Student Decision Matrix

The survey results that underpinned the initial formation of this matrix represent the thoughts of a narrow subset of students who are already studying in the UK and so may not necessarily reflect the thoughts of those students considering studying in the UK. This initially presented a challenge as to its suitability as a resource with which to inform further analysis, however broader sources covering much the same area of interest also exist, allowing for a comparison of Kent-centric data and proving a useful tool for checking the results of the Kent survey. The main secondary source used for this verification is the International Student Survey 2017 report prepared by Hobsons and published in May 2017[25] which surveyed almost 28,000 prospective international students who were considering studying in the UK. The survey covered students' decision making processes and asked them to rank their five most important influencing factors. **High quality education** was revealed as students' primary motivating factor, with 32% of respondents ranking it above all other factors. **Cost** came in second on students' list with 24.5% ranking it as the most important factor. **University ranking, graduate employment prospects** and **accessible entry requirements** came next. Subsequent iterations of the same survey in 2018 and 2019 confirmed these elements as the most important for international students, albeit with some switching places.

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[25] Hobsons (2017), Page 12, *International Student Survey 2017, Welcoming the World, Maintaining the UK's status as a top global study destination*. Available: https://www.internationalstudentsurvey.com/international-student-survey-2017/ (Accessed 05/06/2017)

Unfortunately, the surveys did not take into consideration factors such as cultural or family ties and so a complete, direct comparison with my own data is not possible. What a comparison of the two sets of data does show, is that there is a correlation between the motivating factors of both sets of participants and as such the matrix is based on valid trends.

Although it has been mentioned that there are five important elements international students consider, there are a number of other factors that are listed within the matrix. This is because most of the driving factors students self-report, either through the Kent questionnaire or the International Student Survey, are perceptive. Teaching quality, what constitutes an affordable fee, what constitutes an easily achievable entry requirement and what constitutes a good graduate job all depend on the individual circumstances of individual students, their socio-economic background and, to some extent, their cultural upbringing. Aside from these perceptive factors there are more concrete external factors that act to constrain or target student choice. It is these factors that also appear in the matrix and are taken from my own knowledge of the international recruitment landscape within HE.

Now that a number of influencing factors have been identified they can be added to the PEST analysis below, alongside other external factors not listed in the decision matrix.

Political	**Economic**
- Number of British institutions on 'Approved institution' lists - Number of British institutions on overseas scholarship lists - Post-study work opportunities - Immigration policy	- Fees - Cost of living - Availability of scholarships
Social	**Technological**
- Media influence - Perceived value for money - Perceived quality of education - Cultural Factors - Perceived impact on future career - Personal factors - Reputation of UK HEIs - Reputation of UK in general - Perceived accessibility (entry requirements)	- Ease of access to university information - Modernity of university facilities and teaching equipment

Fig.6 PEST analysis for students and the transfer of knowledge

Much like students, university staff go through a complex decision making process when deciding where to work. Unfortunately there has been no research conducted, either at a local, national or international level as to the motivating factors that drive staff to look to work in the UK. However, an educated guess can be made at the type of factors that would influence their decisions and these could include; the number of available jobs, suitability of job roles, language proficiency, candidate mobility, financial burden and immigration controls. Once again it is possible to further categorise the decision influencing factors into specific sub-groups and this is shown in the matrix below.

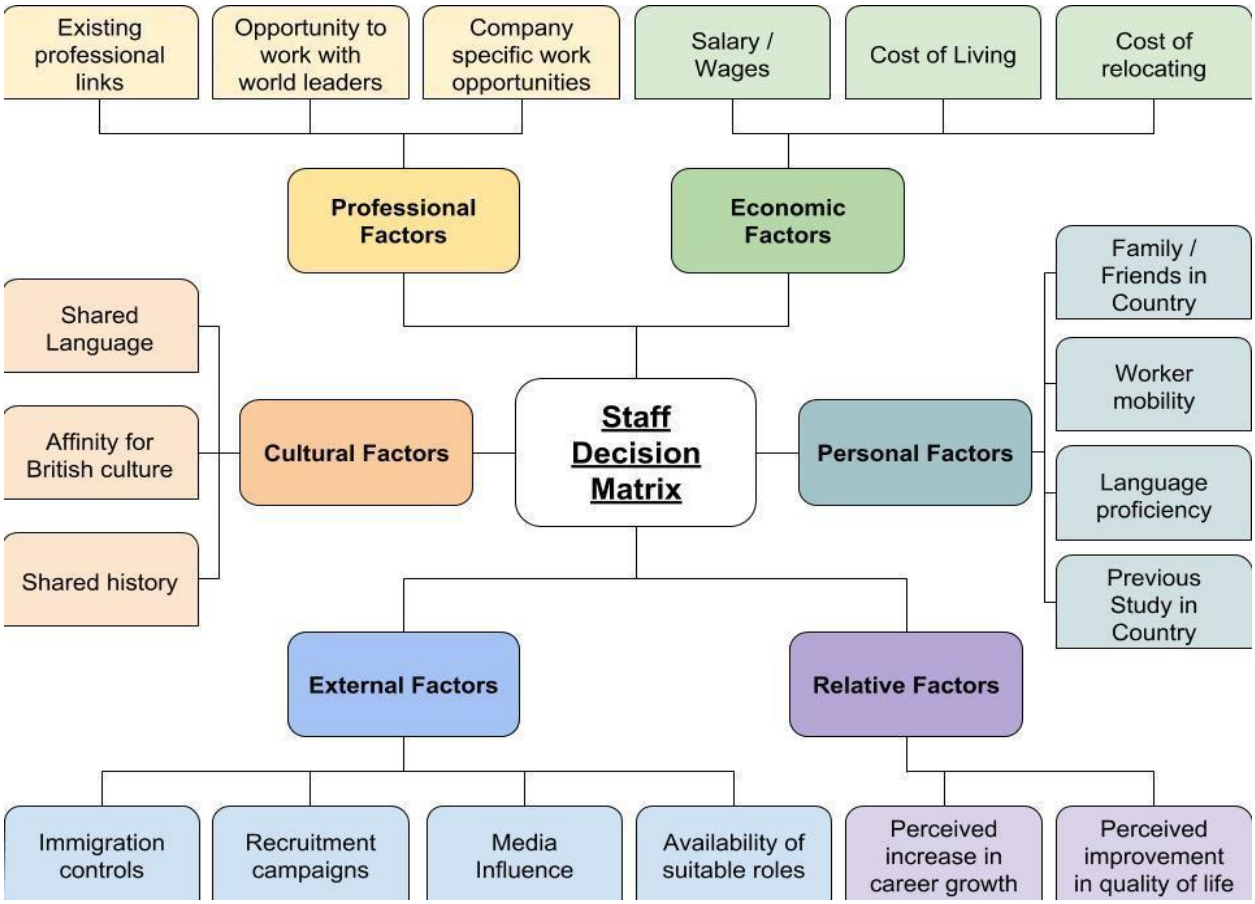

Fig.7 Staff Decision Matrix

As with the student matrix, these influencing factors can be placed into a PEST analysis as follows;

Political	Economic
- Immigration controls	- Cost of living - Cost of relocating - Salary/wages
Social	**Technological**
- Cultural Factors - Perceived impact on future career - Personal factors - Reputation of UK HEIs - Reputation of UK in general - Media influence - Perceived impact on quality of life - Support mechanisms for new arrivals	- Access to necessary information

Fig.8 PEST analysis for staff and the transfer of knowledge

Despite differing factors for staff and students, there are a significant number of common areas. This allows for the driving factors for both sets of stakeholder to be placed on the same uncertainty-impact matrix during the next stage of the methodology.

4.3 Identifying Critical Uncertainties

Now that the driving factors have been identified they will once again be plotted on an uncertainty - impact matrix to highlight which of them will become the critical uncertainties and form the basis for the following analysis.

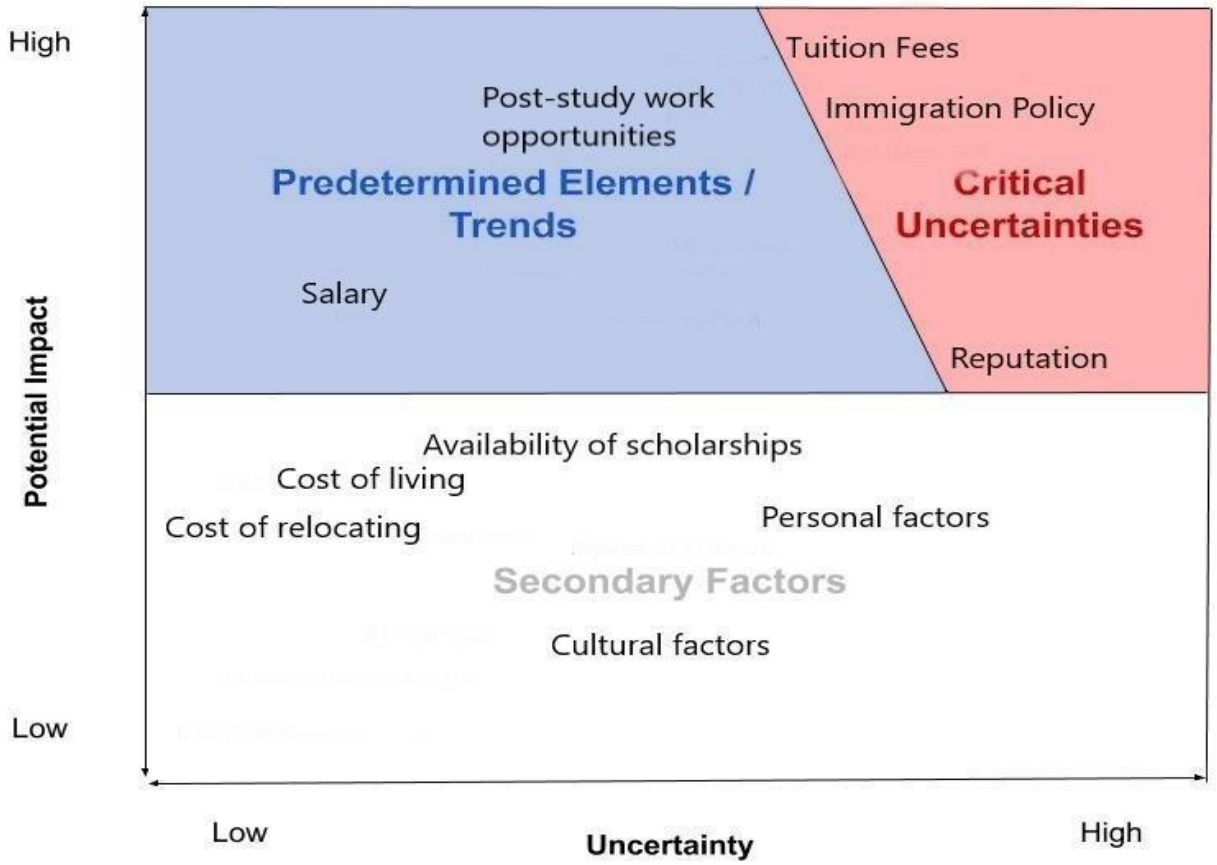

Fig.9 Impact/uncertainty matrix for the transfer of knowledge

From this matrix it is possible to see can see that the most uncertain factors with the highest potential impact are immigration policy, reputation and cost - either of relocating itself, the cost of daily life, or costs relating to tuition fees. These are the areas that will form the basis of the Brexit impact analysis on both students and staff. Firstly, there will be a brief description of recent developments and what they might mean in a macro sense before discussing in more detail their implications for each set of stakeholders.

4.4 Immigration Policy

Immigration policy is by far the biggest structural issue affecting the recruitment of students and staff. Visa rules and eligibility requirements limit not only the number of immigrants but also the type of work/study they are eligible for, the amount of time they can spend in the country and what activities they can undertake additional to their 'core' reason for being here. For instance, students coming to the UK on a Tier 4 (General) visa are only allowed to work 20 hours a week during term time, have no right to access public funds and must leave the UK four months after completion of their degree[26], though this will be extended to a period of two years for students beginning their courses in autumn 2020.

The vast majority of non-UK, non-EU staff at universities will hold a Tier 2 (Work) visa, though some senior academics or researchers may be on a Tier 1 (Exceptional Talent) visa. Anybody working on a Tier 2 visa must meet a salary threshold - currently £30,000 - and is allowed to stay in the UK for a five year period before either leaving the UK or applying for a different type of visa[27]. This five year period is also true for those holding a Tier 1 visa[28], however there is currently no salary threshold.

Currently there have been few pronouncements and even fewer legislative changes regarding the post-Brexit immigration policy for non-EU workers within HE or students. What changes have been announced have mostly come through the publication of the UK Government's Immigration White Paper and include the removal of the current cap on entry clearance applications and the establishment of 'low-risk' countries with less stringent requirements along with a promise to re-evaluate the current salary threshold[29].

Aside from these adjustments to the system by far the biggest change from the status quo is that European citizens will now likely need to go through this process - though the actual arrangements will depend on any agreement between the UK and EU on their future relationship. This is a marked change from the current arrangements which allow EU citizens to work, study and live in the UK without any need to gain additional permissions. It is undoubtedly this change that could lead to the biggest impact from Brexit in terms of student and staff recruitment.

[26] Home Office (2019) *Tier 4 of the Points-Based System – Policy Guidance.* Available at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/812143/T4_Migrant_Guidance_JUNE_2019_FINAL_v3.pdf (Accessed: 06/07/2019)
[27] Gov.UK (No Date). *General Work Visa (Tier 2).* Available: https://www.gov.uk/tier-2-general (Accessed: 06/07/2019)
[28] [26] UKVI (2019), *Tier 1 (Exceptional Talent) version 03/19 Tier 1 (Exceptional Talent) of the Points Based System – Policy Guidance.* Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/791803/T1_ET_Guidance_03_2019.pdf (Accessed: 06/07/2019)
[29] Gov.UK (2018), *The UK's future skills-based immigration system*. Available: https://www.gov.uk/government/publications/the-uks-future-skills-based-immigration-system (Accessed: 06/07/2019)

4.4.1 Staff Members

If post-Brexit immigration policy were to remain exactly as it is laid out in the 2018 Immigration White Paper then it is likely that not much would change for non-UK, non- EU staff given that there have been no serious changes to the current immigration eligibility criteria. However, the effect on EU staff has the potential to be huge.

At this stage it is worth stating that with any change in immigration policy it is very unlikely that those members of staff already in the UK would be forced to leave prematurely and therefore it is also highly unlikely that staff or HEIs themselves would face any immediate, or unplanned disruption. This is as true for EU staff as it is for non-EU staff. Non-EU staff will already be well aware of the limitations attached to their visas and will have made appropriate plans, and those EU staff members currently in the UK will be allowed to stay with no time limitations, as evidenced by the launch of the EU settlement Scheme[30]. The real impact of new immigration policies is therefore likely to fall on those prospective members of staff.

As things currently stand EU citizens hoping to work in the UK HE sector post-Brexit are the most likely to be impacted. With these potential workers needing to apply for a visa and pass the relevant checks there may well be a sharp decline in the number of EU citizens applying for positions in British universities. This is especially likely for non- academic fields as most Professional Services jobs do not attract sufficient salary to pass the £30,000 threshold required to apply for a Tier 2 work visa[31]. Given that currently 7% of the 429,560 members of staff within HE are EU citizens working in non- academic posts the sector could be looking at a potential, worst-case, shortfall of around 30,000 staff members. This is assuming that all current EU staff left their jobs and employers were unable to replace them from the domestic market, which is highly unlikely. A more realistic figure would be available by identifying what percentage of EU staff were likely to leave their posts in the period following Brexit and using this to calculate a hard figure. According to a UCEA report produced in 2008 the turnover rate for administrative / professional staff was 8% per year[32]. Applying this to EU citizens in this type of role it is possible to estimate that roughly 2,400 EU staff would leave their roles every year. This is a much more manageable number and it is likely that the vast majority of these posts could be absorbed by local populations, essentially leading to a small jobs boost for existing communities based around

[30]Gov.UK (no date), *Apply to the EU Settlement Scheme (settled and pre-settled status).* Available: https://www.gov.uk/settled-status-eu-citizens-families/what-settled-and-presettled-status-means?utm_campaign=EUSS&utm_medium=paid_search&utm_source=Google&utm_content=Expanded_link_what_yo ull_get&gclid=EAIaIQobChMI6-KZm6ag4wIVwprVCh1GlAcgEAAYASACEgIs0PD_BwE&gclsrc=aw.ds (Accessed: 06/07/2019)

[31] [29] Of 1920 Professional Service jobs advertised on 06/07/2019 on Jobs.ac.uk, 1184 were advertised with a salary below £30,000. Jobs.ac.uk (no date). *Professional / Managerial / Support Services Jobs*. Available: https://www.jobs.ac.uk/search/?nonAcademicDisciplineFacet[]=administrative&nonAcademicDisciplineFacet[]=financ e&n onAcademicDisciplineFacet[]=fundraising-and-alumni&nonAcademicDisciplineFacet[]=hospitality-retail-conferences-and- events&nonAcademicDisciplineFacet[]=human-resources&nonAcademicDisciplineFacet[]=international-activities&nonAcademicDisciplineFacet[]=it&nonAcademicDisciplineFacet[]=library-services-and-information-management&nonAcademicDisciplineFacet[]=pr-marketing-sales-and-communication&nonAcademicDisciplineFacet[]=property-and-maintenance&nonAcademicDisciplineFacet[]=senior-management&nonAcademicDisciplineFacet[]=sports-and-leisure&nonAcademicDisciplineFacet[]=student-services&nonAcademicDisciplineFacet[]=other (Accessed: 06/07/2019)

[32]UCEA (2008), *Recruitment and Retention of Staff in Higher Education 2008*. Available: https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2008/recruitment-and-retention-of-staff-in- he2008.pdf (Accessed: 06/07/2019).

universities. However if no domestic labour was available to fill these vacancies, either due to local labour shortages, national skills gaps or the lack of mobile staff able to move in from other areas, then institutions may find themselves in a situation where they were unable to operate at pre-Brexit levels. This likelihood would very much depend on the individual circumstances of universities and the demographic make-up of their local area.

The story for academic staff is very different, with 91% of all academic positions advertised on Jobs.ac.uk at the time of writing attracting salaries over the £30,000 threshold required to be eligible for a Tier 2 visa[33]. This would seem to indicate that EU citizens wishing to apply for academic roles within the UK would be largely able to do so. The 9% of jobs that would not attract a sufficiently high salary to enable Tier 2 sponsorship would roughly equate to 19,000 vacant posts[34]. Assuming a yearly turnover rate of 6% (UCEA, 2008) this would likely mean 1,140 posts unable to attract tier 2 workers would become vacant per year. Much as with non-academic staff, this is not a huge number, especially considering there are 376 registered HE providers of which 114 are classified as universities[35]. This would mean around 10 posts a year per university would need to be filled by domestic workers or those with indefinite leave to remain. As these positions are junior in nature they would most likely not be suitable for someone in the UK on a Tier 1 (Exceptional Talent) visa. These extra posts would present an excellent opportunity for early-career researchers and post-Docs to begin careers in academia. However, if these positions could not be filled then universities may find themselves having to increase class sizes, merge or suspend modules and re-structure programmes in order to operate with a reduced teaching body. This could have negative repercussions for students as increased class sizes and demands on lecturers' time may mean they are less able to give students the individual support they require. It would also lead to them neglecting other 'none-core' responsibilities such as outreach work thus damaging the social mobility aspect of the modern university's mission.

Whilst we've focussed here on prospective EU, and to a lesser extent UK, members of staff, prospective non-EU, non-UK members of staff could also be impacted. With EU staff forced to comply with the same immigration criteria as non-EU job seekers there could be an increase in the proportion of non-EU staff although this would depend on how competitive they were in terms of skill level, professional experience and how able they were to make the move considering their own personal circumstances.

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[33]Jobs.ac.uk (no date). *Professional / Managerial / Support Services Jobs*. Available: https://www.jobs.ac.uk/search/?keywords=&location=&placeId=&activeFacet=academicDisciplineFacet&resetFacet=academicDisciplineFacet&sortOrder=1&pageSize=25&startIndex=1&academicDisciplineFacet%5B0%5D=architecture- building-and-planning&academicDisciplineFacet%5B1%5D=biological- sciences&academicDisciplineFacet%5B2%5D=business-and-management- studies&academicDisciplineFacet%5B3%5D=computer-sciences&academicDisciplineFacet%5B4%5D=creative-arts-and-design&academicDisciplineFacet%5B5%5D=economics&academicDisciplineFacet%5B6%5D=education-studies- inc-tefl&academicDisciplineFacet%5B7%5D=engineering-and-technology&academicDisciplineFacet%5B8%5D=health- and-medical&academicDisciplineFacet%5B9%5D=historical-and-philosophical-studies&academicDisciplineFacet%5B10%5D=information-management-and-librarianship&academicDisciplineFacet%5B11%5D=languages-literature-and-culture&academicDisciplineFacet%5B12%5D=law&academicDisciplineFacet%5B13%5D=mathematics-and-statistics&academicDisciplineFacet%5B14%5D=media-and- communications&academicDisciplineFacet%5B15%5D=physical-and-environmental- sciences&academicDisciplineFacet%5B16%5D=politics-and-government&academicDisciplineFacet%5B17%5D=psychology&academicDisciplineFacet%5B18%5D=social-sciences- and-social-care&academicDisciplineFacet%5B19%5D=sport-and-leisure (Accessed: 06/07/2019)

[34]According to the latest HESA data there are 211,980 academic staff working in British HEIs. 9% of this is 19,078. HESA (2019), *Higher Education Staff Statistics: UK, 2017/18*. Available at: https://www.hesa.ac.uk/news/24-01- 2019/sb253-higher-education-staff-statistics. (Accessed: 23/05/2019)

[35] Office for Students (no date). *The OfS Register*. Available: https://www.officeforstudents.org.uk/advice-and- guidance/the-register/the-ofs-register/ Accessed: 06/07/2019

The above analysis is based on the content of the government's most recent immigration White Paper and assumes the policies contained within it will remain unchanged after Brexit. However, with Theresa May no longer Prime Minister this is far from certain. Both Conservative leadership contenders, Boris Johnson and Jeremy Hunt have been long-time supporters of reforming the immigration system to benefit skilled workers, reiterated this recently whilst on the campaign trail[36]. Exactly what shape any reforms would take is unclear, but the most pragmatic would be the reduction of the salary threshold - or at least pegging it to average salaries within disciplines - and removing the cap on numbers of visas issued in strategic areas such as HE.

Looking at the previous analysis it could be said that any change in the salary requirement would mostly benefit those in professional services roles, whose staff earn on average a salary below that of the current threshold necessary for tier 2 visas, with academic recruitment being largely unaffected given their higher average wage. Where this change would also make a real difference would be in universities' ability to hire the skilled technicians necessary for the smooth running of the labs and specialist technical equipment that underpin activities in the strategic STEM subjects the government wishes to promote through its post-Brexit Industrial Strategy[37] as well as other specialist support staff[38].

What we've seen in this section is that the current post-Brexit immigration system, as laid out in the Immigration White Paper, would change relatively little for staff members and for those job seekers from countries that already require a visa to work in the UK, with the real impact falling on EU citizens with hopes of working within the UK HE sector. We've also seen that both contenders to be Britain's next Prime Minister favour further relaxing the immigration regulations for skilled workers, making it easier for universities to recruit specialist staff to strategic areas, and that any shortfall in lower/entry-level jobs could have a beneficial effect on local populations and domestic early career researchers. Overall the effect of Brexit's influence on staffing within the UK HE sector, ranges from muted to mildly positive, with the notable exception of its impact on prospective EU staff. At least where immigration policy is concerned. As demonstrated later there are other Brexit related issues to take into consideration that could have a far more profound effect on the staff body of British HEIs and much more serious ramifications for the sector, and wider economy.

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[36]Warrell, H. (2019) *Boris Johnson and Jeremy Hunt break with May on immigration*. Available: https://www.ft.com/content/e5d67140-97f0-11e9-8cfb-30c211dcd229 (Accessed: 06/07/2019)
[37]HM Government (2017) *Industrial Strategy: Building a Britain fit for the future*. Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/664563/industrial- strategy-white-paper-web-ready-version.pdf (Accessed 06/07/2019)
[38]Russell Group (2019) *Drop 30k visa salary threshold*. Available: https://russellgroup.ac.uk/news/drop-30k-visa-salary- threshold/ (Accessed: 06/07/2019)

4.4.2 Students

Whilst the impact of current immigration reform would have a fairly muted impact on staff numbers and the diversity of the HE workforce, its impact on students is arguably the most important element to consider. Students provide direct economic benefits to universities, as previously seen, and they are also in the UK for shorter periods than staff members. Furthermore vastly greater quantities of new non-UK students enter the system every year than do new non-UK staff members. This means that any change in immigration policy that affects students would likely be more immediately and keenly felt than a change in staff immigration. Whilst it is true that a change in immigration policy would only directly affect non-UK students, most notably EU citizens, it would have serious knock-on effects for HEIs and for domestic students too.

By far the biggest change for non-UK students announced in the Immigration White Paper is the fact that EU students would be required to obtain a Tier 4 visa to study in the UK. This is important for two reasons; firstly it creates an extra administrative burden and secondly it raises the prospect of EU students paying higher fees as there would no longer be anything to differentiate them and non-EU, non-UK students. This first point is an interesting and necessary one to consider, however at the time of writing no research has been done into exactly how much of a deterrent this extra layer of administration would be to EU students wishing to study in the UK. There has currently been no official statement from governmental sources on whether or not EU students would have to pay the same fees as their non-UK, non-EU classmates, although it is widely agreed within the sector that this would likely be the case. Once again this means that no serious analysis can be undertaken on this topic as it would simply be based on hearsay and rumour. These are both important elements that could have dramatic impacts on the UK HE sector but are currently out of the scope of any robust or systematic analysis.

Instead it is possible to focus on the impact of the reforms set out in the Immigration White Paper on those students who currently do require a visa to study in the UK as there is a greater shift here than was the case for this demographic of staff. The most important element within the White Paper with regards to these students is the extension of post- study leave from four months to six for undergraduate and masters students and to twelve months for PhD students. Most of the UK's 'competitor countries' such as the US, Canada[39] and Australia[40] offer attractive post-study work schemes and international student numbers have continued to rise in these countries despite remaining static in the UK[41] which helps to demonstrate their importance in attracting lucrative international students. This is further demonstrated by the significant drop-off of Indian student enrolments in British HEIs after the post-study work scheme was scrapped by the coalition government, with enrolment figures dropping from almost 24,000 in 2010/11 to just over 12,000 two years later in 2012/13 (HESA, 2018). In the years since this figure has hardly moved and was hovering around 12,500 in 2017/18 (HESA, 2018). The planned extension of post-study leave will

[39] ICEF Monitor (2019). *Canada's foreign student enrolment took another big jump in 2018*. Available: https://monitor.icef.com/2019/02/canadas-foreign-student-enrolment-took-another-big-jump-2018/. (Accessed: 06/07/2019)
[40] ICEF Monitor (2019). *Double-digit growth for Australia's foreign enrolment in 2018*. Available: https://monitor.icef.com/2019/03/double-digit-growth-australias-foreign-enrolment-2018/. (Accessed: 06/07/2019)
[41] HESA (no date). *Where do HE students come from?* Available: https://www.hesa.ac.uk/data-and- analysis/students/where-from (Accessed 24/05/2019)

therefore likely have a positive effect on student recruitment, but it remains of a shorter duration than that offered in competitor countries and so its impact is likely to be muted. If this scheme were to prove successful and managed to increase the number of enrolments to those seen before the previous scheme was scrapped this would represent an increase in direct tuition fee income of at least £138 million from Indian students alone, assuming Lofts' (2018) average international fee of £12,000 and all of these additional students enrolling on 1 year masters courses. The true benefit would likely be higher, with at least some students enrolling on three year undergraduate courses, and taking into consideration international fees can be much higher at individual institutions and depending on subject level. This figure also does not include secondary income from accommodation, subsistence or leisure spending, nor the likely increase in enrolments from other nationalities.

Whilst it is unlikely that a two-month extension from the current arrangements is likely to produce such a rapid return to previous levels of enrolments, the current Home Secretary Sajid Javid has recently expressed his backing for a move led by former Universities Minister Jo Johnson to extend the post-study leave period to two years[42]. This would certainly help to level the playing field and maximise the economic returns from this policy, although equivalent policies in the USA, Canada and Australia range between three and four years, so the UK would have to find other ways of differentiating itself from these schemes if it wanted to take full advantage of the pulling power of post-study work schemes.

In this section it has been demonstrated that that work has already begun to liberalise the immigration policy in order to attract students and reap the associated economic benefits. However it is also possible that the current arrangements are not likely to have a huge impact and that the UK will need to go further in order to ensure real world outcomes meet its ambitions. Encouragingly there has been evidence that those in positions of power realise this and are laying the groundwork for further legislation.

4.4.3 Summary

Immigration policy is a fairly rigid element to consider in the process of emigrating to the UK either for work or study. No matter which other elements of the two decision matrices are at play, immigration policy represents the greatest hurdle to overcome due to its complexity, cost and eligibility criteria. Brexit represents the greatest opportunity for immigration reform in recent times and there has begun to be evidence of this with the publication of the Immigration White Paper in December 2018 that outlines the UK's post-Brexit approach to immigration. Despite this, immigration policy remains a thorny political issue and the policies laid out in the White paper were conceived at a time when the Prime Minister was very much concerned with reducing net migration to the UK and as such are a compromise between meeting this manifesto pledge and aiming to empower the UK economy post-Brexit. They therefore do not represent seismic changes to the current system and this is reflected in the muted effect they will have on non-UK staff and

[42]Parker, G & Warrell, H (2019). *Sajid Javid seeks to lift work restrictions on foreign students.* Available: https://www.ft.com/content/74d7920a-8835-11e9-a028-86cea8523dc2 Accessed: 06/07/2019

students - with the very notable exception of EU citizens who do not currently reside in the UK.

Though the political climate is changing and it looks as though a further liberalisation of the immigration system is on the horizon, it should not be forgotten that immigration policy remains dictated by political will and any changes could soon be reversed if they prove unpopular with the electorate. At this stage it may be tempting to conclude that Brexit's effect on the recruitment and retention of students and staff would most likely be rather understated, but there is an additional element that will play a large role no matter what the immigration policy becomes post-Brexit and has the ability to derail any gains made by a more favourable immigration regime. It is a factor more ruled by heart than legislation - Reputation.

4.5 Reputation

Whilst the UK HE sector is considered one of the best in the world, be it for teaching quality, research quality or student support and outcomes, it is undoubtedly perception of the sector that has helped bring it to the position of strength it has traditionally found itself in. Perception is a powerful tool that encourages students to study here, talented researchers to work here, an employer to believe that a candidate educated in the British system will be highly competent and world leaders to entrust the education of their children to British institutions. It is certainly important for the sector to materially *be* world-leading, by whatever measure that may be, but it is equally as important for it to *appear* to be, for often perception *is* reality. This is perhaps most evident in the retail world, where a product may not be necessarily superior to another in terms of quality or functionality but enjoys better sales simply because of the reputation of its brand. In a world of highly commercialised education, universities are becoming more and more market oriented and as such are relying more heavily on their brands to sell their products, be they courses or employment opportunities.

In order to understand the potential impact Brexit could have on external stakeholders' perception of the UK and the consequences of this for the HE sector, their reactions both to the referendum itself and how their opinions have evolved over the years since can provide clues to the post-Brexit future.

4.5.1 Students

Student opinions are easier to identify and track than those of staff members as they are generally a more popular object of study. In order to understand their future behaviour results of the survey previously used to identify driving factors in decision making can be drawn upon. As part of this survey students were also asked a range of questions in order to gain an insight into the difference between perceptions of the UK as a whole and those of the HE sector. Their answers to these questions revealed some interesting trends, for instance when asked for their opinions on the UK as a whole, 76.7% reported a positive view with 21.9% holding a neutral view and 1.4% a negative one, yet when asked the same question on the HE sector, these percentages were 68.5%, 23.3%

and 8.2% respectively.

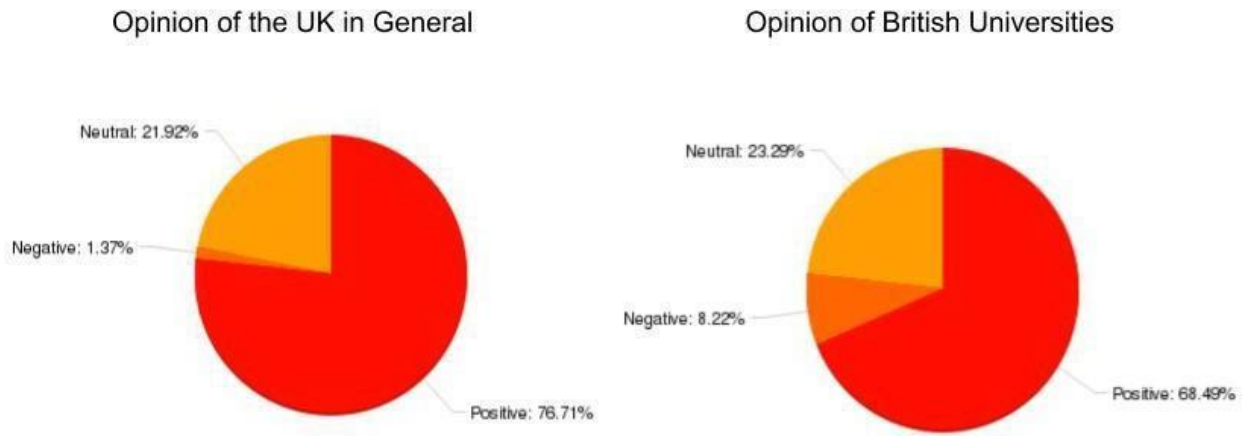

Fig.10 Pie charts showing students' opinions of the UK and UK HEIs respectively

This could show that international students view the UK in general more positively than its HEIs and if that were indeed the case it would signify that the British HE sector could be vulnerable to changes in the UK's perception on the world stage. Given the sample of students that generated these results was drawn from one institution these figures could also represent students' feelings towards Kent specifically rather than the HE sector at large. They also reflect the feelings of students already in the country rather than prospective students and so their opinions may have been skewed by their experiences of living in the UK.

However, QS Enrolment Solutions in their annual International Student Survey provide an insight into the opinions of a set of students from a much wider pool. Perhaps most importantly these students are yet to have studied in the UK and therefore represent the most important demographic when looking at the post-Brexit Future. In the 2019 edition of the survey 12% of respondents suggested that Brexit had made them less likely to study in the UK, whereas 14% stated they were now *more* likely to study in the UK because of Brexit[43]. This result is mainly propelled by the fact that those students who are now more interested believe that Brexit will make the UK a more welcoming place for international students, followed by the belief that Britain will be stronger outside the EU and that there will be better employment prospects one the UK has left the bloc. Conversely for those who are now less likely to be interested in studying in the UK financial viability is the top concern, followed by the belief that the UK is now a less welcoming place for international students and that it will be harder to find a job after graduation. The fact that the two factors in second and third place amongst both those students who are more interested in studying in the UK, and those that are less interested, shows that prospective students are not a homogenous group who are motivated by the same factors.

This trend of a slight increase in Brexit is one that has come about steadily over the years since the referendum. In 2017 only 11% of students were more interested in studying in the UK as a result of Brexit compared to 13% who were less interested and in 2018 the figures were 13% and 14% respectively (P. 11. QS Enrolment Solutions, 2019). This shows that opinions have changed,

[43]QS Enrolment Solutions (2019), *International Student Survey 2019*. Available: https://www.internationalstudentsurvey.com/international-student-survey-2019/ (Accessed: 06/07/2019)

slowly but significantly over the three- year period since the referendum. Should this aggregate increase of 2%[44] it could equate to a rise of just under 20,500 new students per year[45] which would provide a significant income boost for the sector. The level of this boost would depend on the fee type of the students, the length of course they enrolled on, the institution they chose to study at and the subject they studied. Two percent is also not a hugely significant figure from a statistical point of view and given there is no real chance of all of the respondents to the survey enrolling on courses in the UK these figures very much represent a situation in which potential students were not constrained by any of the other factors identified earlier in the decision matrix.

A more concrete, yet less contemporary, measure of likely future trend is analysing the UCAS application data from the past few years as it captures actual applications rather than the opinions of those speculatively considering applying to the UK. At the end of the 2018 application cycle the total number of applications made through UCAS stood at 636,960, down from 674,890 in 2016, representing a 5.6% drop[46]. This was mostly caused by a 7.6% drop in UK student applications with applications from EU students seeing a 3.3% drop. Non-EU student applications however recorded an increase of 8.7% in the same period. The drop in UK students is likely mostly due to the 'demographic dip' meaning there are fewer 18 year-olds than previous years, however considering EU student numbers were experiencing steady growth every year since 2012 it is likely that Brexit was partly responsible for the decline in applications from this demographic since 2016.

Brexit's influence on student recruitment then is a confusing mixture of seeming to simultaneously cause both more and less interest in the UK as a study destination amongst. The UCAS figures point to this likely being a trend based down EU/non-EU lines and this is backed up by figures from the QS Enrolment Solutions report (2019). Given that evidence for this trend is supported by two separate datasets it is plausible to conclude with relative certainty that Brexit has likely played a role in making the UK a less appealing destination for potential EU students and more appealing for potential non- EU, non-UK students. The current application trends highlighted in the UCAS and the future trends hinted at in the QS report would be best analysed by comparing them with enrolment data as this would allow us to establish a margin of error and to demonstrate their level of accuracy. This is unfortunately not possible at the time of writing as enrolment data, collected and compiled by the Higher Education Statistics Agency, lags a few years behind. The most contemporary data set available for enrolment numbers is from the 2016/17 academic year and so does not hold any utility for the purpose it would serve here.

[44]The 14% of respondents who are more likely to consider the UK as a result of Brexit less the 12% who were less likely to consider it.
[45]Given that there were 1,023,360 new non-UK students enrolled in British universities in 2017/18 and assuming a 2% increase on this number. Data pulled from HESA (no date). *Where do HE students come from?* Available: https://www.hesa.ac.uk/data-and-analysis/students/where-from (Accessed 24/05/2019)
[46]UCAS (2018). *June Deadline Analysis: Domicile.* Available: https://www.ucas.com/file/177181/download?token=Qv2kQZYj. (Accessed: 06/07/2019)

4.5.2 What does this mean for HEIs?

Given that post-Brexit arrangements are not yet clear, there are a number of ways this could play out over the years following the UK's departure from the bloc. Taking the UCAS application figures for EU and non-EU interest in the UK post-Brexit can help us to illustrate the possible economic repercussions should this application trends be mirrored in enrolment statistics.

For EU students there has already been a 3.3% overall drop in applications since 2016, equating to a 'shortfall' of 4,320 students spread across two years. Given that EU students are currently charged the same level of fees as UK students this works out at roughly a drop of £19,440,000 per year. As the UCAS figures predominantly capture undergraduate applications, over the traditional three year degree time frame the total figure of 'lost' income mounts to £58,320,000 per cohort.

This 'shortfall' would not be spread evenly over the sector as EU students make up differing percentages of student bodies at different universities. As such those universities who rely more heavily upon EU student tuition fees would likely be more keenly affected by this drop. However, this is not the full picture. As universities have adapted to the new free market conditions ushered in by the Conservative-Liberal Democrat coalition in 2012 and the removal of caps on international students in 2015, many have sought to build a strong sense of brand. Those universities with the most recognisable 'brands', including Oxbridge and some of the Russell Group institutions, are likely to better weather any decrease in EU students' interest in studying in the UK. Unfortunately due to the lack of contemporary enrolment data it is not possible to analyse this trend empirically at the moment.

Furthermore, the yearly UCAS figures tell a more nuanced story and one with important implications for the future. Between 2016 and 2017 there was a 5% drop in applications, yet between 2017 and 2018 there was a 1.8% increase. If this trend continued applications from EU students would reach pre-referendum levels in two years thus suggesting any Brexit-related downturn and associated drop in EU student tuition fee income may be short-lived. Whilst this is encouraging it should be remembered that EU students are currently still eligible for UK government loans, pay the UK rather than International fee level and do not require a visa to study here - all elements which may change after Brexit. Given the uncertainty surrounding these important elements it is impossible to state with any certainty that this recovery in EU student numbers will continue once the UK has actually left the bloc. That being said, the level of uncertainty could also demonstrate that EU students are not choosing to study in the UK for any structural reasons but because of perceptive ones and as such this recovery could signal that the initial reputational damage caused by the Brexit vote has begun to subside. This possibility would carry more weight if the recovery witnessed in 2018 applications were to continue into the 2019 figures and this is something that will be proved or disproved once the 2019 figures are released later this year.

One repercussion of the uncertainty surrounding the future status of EU students and its possible knock-on effects is that universities have a hard time accurately forecasting future income from this significant demographic. This has led to a number of strategies emerging. Some universities have more aggressively focused on recruiting non-EU international students in order to make up any future shortfall in numbers, others have doubled-down on local, or UK recruitment, diversifying their offerings to appeal to 'non- traditional' populations such as retired citizens or those in need of sector specific qualifications. Some have tried a combined approach and some have stayed course hoping that once the fog of Brexit clears there will be a clear path ahead.

Whilst the post-Brexit situation for EU students and their associated income is unclear that of non-EU international students is more so and therefore so is their importance to British HEIs. Both the International Student Survey and the UCAS data suggest numbers of these students are increasing and given the lack of the prospect of additional administrative and/or financial burdens being imposed on these students post-Brexit there is no significant reason to suggest this trend will not continue. Indeed the political landscape can already be said to be shifting in favour of these students. Between 2016 and 2018 UCAS data shows an 8.7% increase in undergraduate applications from non-EU international students equating to an average of 3,040 extra students per year compared to 2016 levels. Once again assuming Loft's (2018) average international fee of £12,000 it is possible to calculate that this would equate to an annual increase of £36,480,000 and a total increase over the duration of students' degree studies of £109,440,000 per cohort. Even after removing the possible 'shortfall' caused by a potential drop in EU students the increase seen in international student applications would generate an increase of £51,120,000 per cohort and £17,036,000 per year. This is a healthy number but not one that would be spread evenly across the sector with some universities better placed to take advantage of this upward trend than others. These figures also do not take into consideration trends within the postgraduate demographic who are the driving force behind educational migration from the UK's most important sending countries such as China and India. As there is no central application system for these students only the HESA data is able to offer insights here and unfortunately the data sets for the years relevant to this study will not be available for another two years. It is also important to remember that not all of those who apply will end up coming to the UK for various reasons and so the figures mentioned above should not be taken as a given.

However, it is likely that this upward trend in non-EU students will continue post-Brexit and given other factors at play, such as the current shortage of 18 year-olds in the UK, the Augur review recommendation to lower UK fees, British HEIs will derive a greater proportion of their tuition income from this demographic. In a perfect world this increase in fees could help universities to invest in loss-making areas, new facilities and improve the student experience helping to retain their position as some of the best in the world. However given the political and demographic context they are currently operating in, it is most likely that any excess funds from this particular source will be used to cover the losses incurred by lower domestic recruitment and a potential domestic fee cut.

4.5.3 Staff

Whilst not as headline grabbing as students, the effect Brexit has on staff morale and their desire to work in the UK is just as important. As discussed in the section on immigration, the effects of Brexit on staff members can be split into two main categories; those who are already here and those potential job seekers looking to move to the UK. Unfortunately no research has been undertaken on the perception of the UK, or its HE sector on overseas job seekers however an analysis can be conducted on the trends available for the period between the Brexit vote in 2016 and now.

According to the Office for National Statistics (ONS), between June 2016 and December 2018 overall net migration declined by 23%[47], driven mostly by a 60% drop in EU net migration. Given that the ONS (2019) data records strong growth in EU net migration from 2012 to June 2016, the data points to a strong negative reaction to the Brexit vote in June 2016 by EU citizens. The data also shows that emigration rates for EU citizens grew sharply and immigration rates declined sharply from June 2016 onwards showing that the Brexit vote was unpopular with both those who already worked here and those who were considering doing so. This is further evidenced by a 2017 British Medical Association (BMA) survey that showed that 45% of European Economic Area doctors were considering leaving the UK and that 39% had already made plans to do so[48].

There were 2.35 million EU nationals working in the UK in 2017[49] and in December 2017 144,000 emigrated from the UK giving an emigration rate of 6.1%. If this percentage were applied to the 51,770 EU citizens who were employed in the HE sector in the 2017/18 academic year (HESA 2017) then this would estimate that just over 3,100 EU members of staff would have left their jobs between late 2017 and late 2018. This is a significant decline but works out at around 27 members of staff at each of the 114 institutions classified as universities on the OfS Register. This being said, over the same time period EU net migration was still positive coming in at 99,000 people giving an increase of 2.7%. Whilst there could be a benefit to local domestic workers from those EU staff leaving their jobs this is not likely to be high given EU net migration is still a positive figure and therefore there is still a good chance that other EU citizens could take the positions left by their compatriots. However, only for those institutions in areas able to successfully attract EU immigrants would this hold true. In those areas overlooked by EU migrants there would be a higher benefit to the local community.

As far as non-EU citizens are concerned net migration increased by 18.3% over the same period. The main driver behind this was an increase in immigration as emigration rates remained stable throughout the June 2016 - December 2018 time frame. As such it is possible to theorise that the

[47]Office for National Statistics (2019), *Provisional Long-Term International Migration estimates*. Available: https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/internationalmigration/datasets/migrationstatisticsquarterlyreportprovisionallongterminternationalmigrationltimestimates (Accessed: 07/07/2019)
[48] BMA (2017), *Brexit and the Medical Workforce Briefing*. Available: https://www.bma.org.uk/-/media/files/pdfs/collective%20voice/influence/europe/bma-brexit-briefing-opposition-day-debate-may2018.docx?la=en (Accessed: 07/07/2019)
[49]Office for National Statistics (2018), *UK and non-UK People in the labour market*. Available: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/ukandnonukpeopleinthelabourmarket/february2018. (Accessed: 07/07/2019)

Brexit vote and subsequent negotiations had little in the way of an impact on the perception of the UK amongst this demographic. Given there were an estimated 1.17 million non-EU, non-UK citizens working in the UK in December 2017[50] and net migration for this demographic was recorded at 234,000 in the same month (OFS, 2019) this works out as an increase of 20%. By applying this figure to the number of non-UK, non-EU staff known to be working in the UK HE sector in the 2017/18 academic year it is possible to estimate that a further 7,169 people within this demographic were looking for work in the HE sector.

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What this demonstrates is that the perception of the UK following Brexit has sharply declined amongst EU citizens and that this has led to more of them leaving the country. However net migration from the EU has remained positive on the whole therefore avoiding any labour shortages and providing a limited boost for domestic job seekers. It is impossible to tell if there will be further damage to the UK's reputation after Brexit days itself amongst this demographic, but sparing any serious reputational damage it is unlikely that a decline in reputation would cause any serious negative consequences for the UK labour force. However, there are dangers in treating all sectors as equal and assuming overall trends are repeated at micro and sector level. We've seen early evidence of this is farmers unable to recruit sufficient seasonal workers to harvest their crops and local, domestic workers unwilling to make up this shortfall. The only way to truly analyse the effect on the HE sector would be to use sector specific data, but unfortunately this is not currently available.

This section has also shown us that non-UK, non- EU migration is increasing and was unaffected by the Brexit vote, likely meaning that UK HEIs would have no problem in attracting this demographic of workers post-Brexit - at least from a reputational point of view. The biggest barrier to effective recruitment of these workers is immigration policy and in the conclusion the interplay of reputation and immigration policy will be covered. Here again, it must be noted that national trends may not necessarily play out at sector level.

[50] Office for National Statistics (2018), *UK and non-UK People in the labour market*. Available: https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/articles/ukandnonukpeopleinthelabourmarket/february2018. (Accessed: 07/07/2019)

5 Brexit and the Generation of new Knowledge

The generation of new knowledge is no longer a purely academic pursuit undertaken for self-enrichment or through the innate curiosity of researchers. Since the Industrial Revolution universities have evolved to become centres of knowledge generation for wider economic and social benefit and as the possibility of monetising research has grown so has the importance to universities of research activity as a source of income. In this chapter the likely impact of Brexit on this complex ecosystem will be analysed.

5.1 Gathering Information

In order to identify the main stakeholders upon whom Brexit is likely to have an effect it is important to first understand exactly how much funding is available to universities to support their research activities and where it comes from. This will then help to both identify the driving factors that will be key to understanding the funding picture post-Brexit and to plot funding sources on an impact/uncertainty matrix.

As universities are all different, there is no one breakdown of university finances that would accurately reflect all institutions. Some receive a sizeable proportion of income from the commercialisation of research focused activities, whilst others receive an overwhelming proportion of their income from government-funded Research Councils and some fund the majority of their research through income gained from tuition fees. This means that there is no 'one size fits all' analysis of university finances, nor of potential effects of Brexit. To mitigate for this it is possible to first look at the breakdown for the sector as a whole and then subsequently note any possible secondary impacts for differing types of institution, for instance those who are reliant on tuition fee income and those who are not.

A 2016 report by Universities UK (UUK) provides just such a sector-wide overview of funding sources and, whilst only a snapshot of the 2014 - 15 academic year, provides a useful starting point for us when discussing the importance of differing funding sources. According to the report, entitled 'University Funding Explained'[51], 44% of income came from tuition fees, 26% came from UK Government sources, 21% from 'other sources', 8% from non-government funded research and 1% from endowment. A graphical representation of this breakdown is available in Fig. 11;

[51]Universities UK (2016), *University funding explained*. Available at: https://www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2016/university-funding-explained.pdf (Accessed: 07/05/2019)

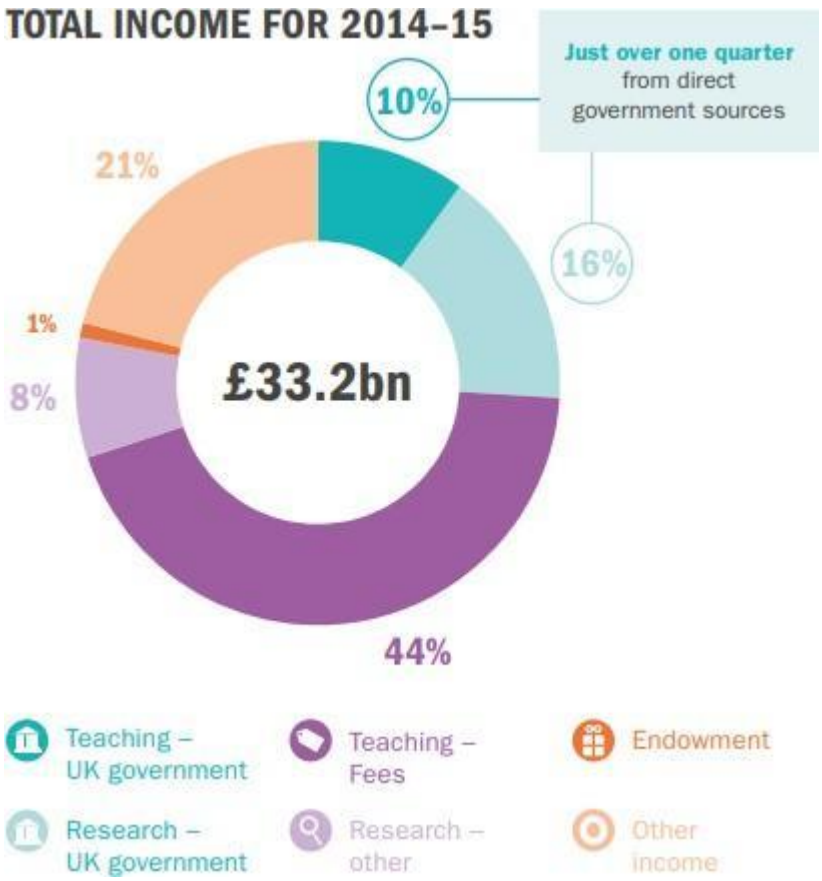

Fig.11 Chart showing total university income in the 2014/15 academic year

This shows that the British HE sector is highly reliant upon teaching income given it accounts for over 50% of universities' income when direct tuition fee income and related governmental funding is totalled. Next on the funding hierarchy is research income, with both governmental and non-governmental sources accounting for 24% of all income, however it is important to note that the category of 'Other income' can, for the most part, also be considered research income, thus increasing the proportion of research derived funds to 45% of universities' income. This is due to the way the UUK report categorises spending. The 'Research - UK Government' category covers only funding provided through Research Councils and direct government spending, with the 'Research -other' category and 'Other income' categories covering EU funding, UK Charity Funding, UK Business funding and non-EU funding sources. These categories would also cover income derived from the direct commercialisation of research by universities or university owned companies.

The Higher Education Funding Council for England (HEFCE) provides a useful annualised breakdown of University Research Income Funds which helps clarify the situation by ignoring non-research-based sources of income. This provides a better insight into the breakdown of the funds that are directly support the generation of new knowledge in Universities. A graphical representation is included in Fig 12[52].

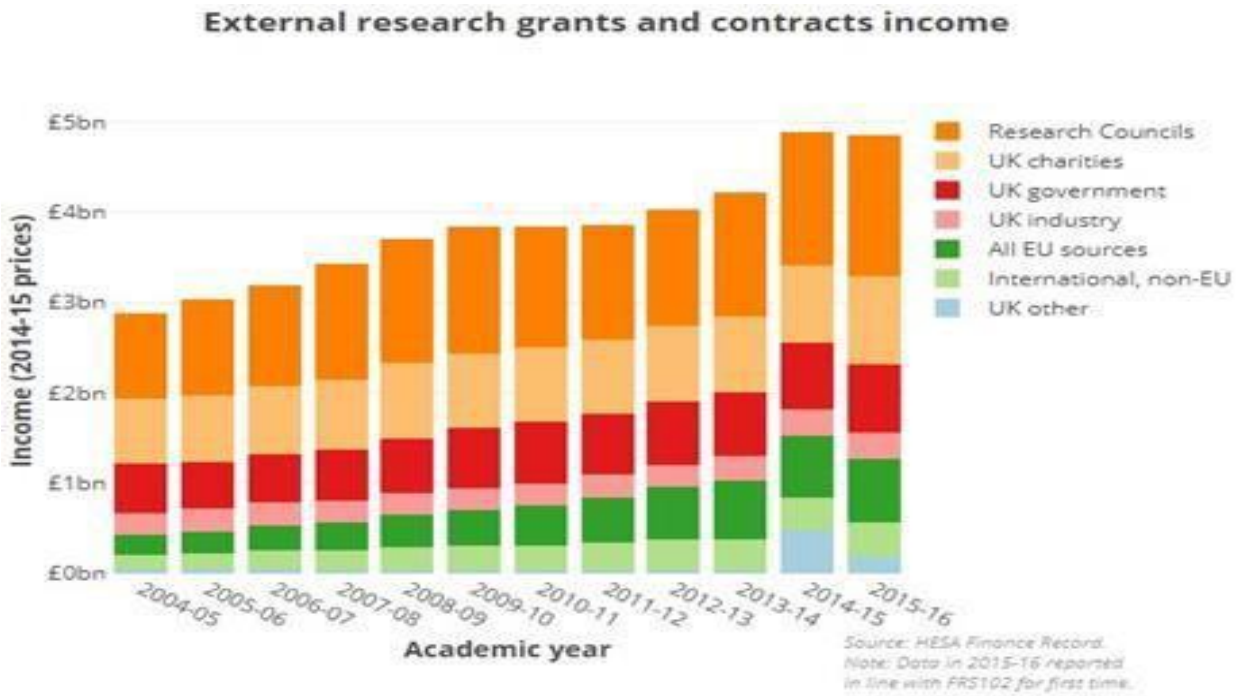

Fig.12 Chart showing the breakdown of external research grants and contract income

The graph above demonstrates that the Research Councils account for the largest source of research funding for UK universities, followed by UK charities, direct UK Government funding and All EU sources. It is worth mentioning here that Research Councils are funded mainly through the UK government's Science budget[53] and therefore UK government funding as a whole can be calculated by adding together the 'Research Councils'[54] and 'UK government' figures in the above graph. This would make the UK government by far the biggest financier of UK universities' research, accounting for around 48% of research funds in 2015/16. Charities are the next biggest rovider of funds representing a little over 20%, with the EU coming in third at 14.5%[55,56].

[52] Extracted from: HEFCE (2017), *HE in England*. Available at: http://www.hefce.ac.uk/analysis/HEinEngland/research/researchfund/ (Accessed on 13/11/2017)
[53] Research Councils (2017), *Government Funding*. Available at: http://www.rcuk.ac.uk/about/aboutrcs/governmentfunding/ (Accessed 22/11/2017)
[54] Research Councils also receive funds from other sources such as the commercialisation of research and as such the figures given here are representative reference values and not true values, given the inability to identify and quantify the other sources of Research Council funding.
[55] Reported total income was £4,794 million in the 2015/16 academic year, with Charities contributing £968 million and EU sources contributing £702 million.
[56] A more contemporary estimate can be found in The Royal Society's May 2017 publication *The role of EU funding in UK research and innovation,* where it estimates that 12% of British HEIs' research income comes directly from EU government bodies and related schemes. Royal Society (2017), *The role of EU funding in UK research and innovation.* Available at:

With this brief overview of research funding in hand it is necessary to understand who the stakeholders who stand to be affected by any changes brought about by Brexit are. The main beneficiaries of research funding are the HEIs themselves as they are the direct recipients of funds and use these to fund projects aimed at increasing their research impact, invest in equipment and building research capacity. Next are those staff members who are directly involved in undertaking or supporting research, followed by private enterprises who commercialise research. These stakeholders will be the focus.

5.2 Identifying the Driving Factors

Now that the challenge to be tackled in this part of the dissertation has been framed it is possible to attempt to place important factors onto a PEST grid in order to help identify those elements that will form the backbone of further analysis.

Political	**Economic**
– Willingness of UK government to associate with EU programmes post- – Brexit – Willingness of EU to associate with – UK post-Brexit – Willingness of UK government to negotiate research partnerships with – non-EU countries post-Brexit – Ministerial sentiment towards – universities – UK Industrial Strategy – Support for knowledge transfer partnerships and spin outs	– Access to EU research funding – Access to non-EU research funding – Access to domestic UK research – funds – Level of domestic UK research funds
Social	**Technological**
– Willingness of non-British HEIs to collaborate with British partners – Willingness of non-British businesses to work with British HEIs – Perception on UK HEIs amongst the general public	– Data transfer legislation

Fig.13 PEST analysis of the generation of new knowledge

https://royalsociety.org/~/media/policy/Publications/2017/2017-05-technopolis-role-of-EU-funding- report.PDF (Accessed: 22/11/2017)

The table shows that there are a fair number of different driving factors that could potentially be affected by Brexit and/or are trends that are currently evolving either completely independently of Brexit, or semi-independently[57] of it. All of these individual factors help us to identify larger, more general, areas of interest by grouping together similar factors, often from different strands of the PEST analysis, into broader categories allowing us to understand the impact of different, yet related, issues as a whole. In turn, this allows us to identify overarching areas of interest and to better place these on an uncertainty/impact matrix. These broader categories could be described as the following; 'Access to EU research funds', 'Access to non-EU research funds', 'UK government approach to the EU', 'UK government approach to non-EU countries', 'level of domestic research funding', 'government support for KTPs and spin outs' and 'Perception of British HEIs'.

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5.3 Identifying Critical Uncertainties

Plotting the previously identified groupings of driving factors onto an uncertainty/impact matrix allows for the identification of those areas or 'critical uncertainties' that will come to form the basis of the future scenario projections. A graphical representation of this breakdown is available in Fig.14.

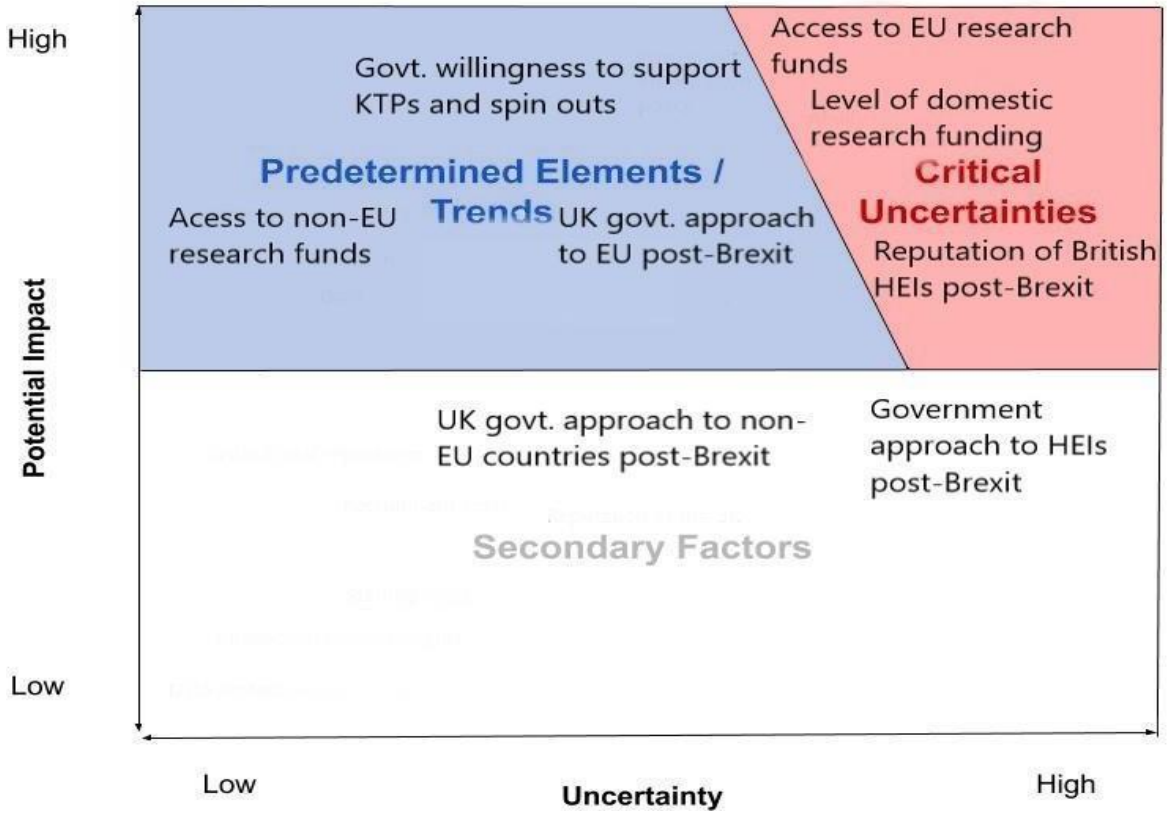

Fig.14 Impact/uncertainty matrix for the generation of new knowledge

[57] The Industrial Strategy launched in 2018 is a good example of this. Not a document that was triggered by Brexit, but one that includes policies designed with Brexit very much in mind.

The matrix highlights that the areas with the highest impact and uncertainty are 'access to EU research funds' and 'reputation of British HEIs'

5.4 Potential Repercussions of Brexit

5.4.1 Higher Education Institutions

By far the biggest impact of Brexit on research funding would come from a situation in which British HE institutions have no access to EU funds. In this situation the headline consequence would be the loss of billions in potential funding over the life of the next seven-year EU funding cycle. The current proposed budget for Horizon Europe, the EU's successor programme to Horizon 2020, stands at €100 billion[58], a €20 billion increase on the €80 billion endowment of Horizon 2020[59] and far above the €40 billion figure of Horizon 2020 funds distributed to date[60]. Combining the proposed budget of Horizon Europe with the UK's success rate in attracting Horizon 2020 funding, allows us to estimate a loss of around €13 billion for the British scientific community as a whole across the life of the Horizon Europe programme[61]. The Horizon 2020 figures also tell us that of the €5.56 billion the UK has captured during the programme, 66.8% of this figure was awarded to higher and secondary education institutions. Assuming a similar breakdown for the successor programme, the HE sector could be looking at an overall drop of €8.68 billion[62] spread across the seven years of the Horizon Europe programme. Assuming that these funds would be distributed evenly over the lifespan of the programme, it is possible to estimate that UK HE institutions would, together, lose roughly €1.24 billion per year[63].

These numbers seem dramatic and the story of their impact certainly is. To date UK HEIs have participated in 7,285 individual projects financed by the Horizon 2020 programme (Horizon 2020 Dashboard, 2019) and it is therefore reasonable to assume a similar amount of projects would not be viable if British HEIs had no access to the Horizon Europe successor programme. Unfortunately no information is currently available on how many jobs within the British HE sector were directly created through projects funded by the EU, nor on the economic impact these projects had for the wider economy and so it is not possible to properly analyse this important area of wider economic impact. This being said, it is not hard to imagine that a loss of funding of this magnitude would lead to a loss of jobs as current funded projects came to an end and

[58] European Commission (no date), *Horizon Europe - the next research and innovation framework programme.* Available: https://ec.europa.eu/info/designing-next-research-and-innovation-framework-programme/what-shapes-next- framework-programme_en (Accessed 16/05/2019)
[59] European Commission (2013), *Factsheet: Horizon 2020 Budget.* Available: https://ec.europa.eu/research/horizon2020/pdf/press/fact_sheet_on_horizon2020_budget.pdf (Accessed: 16/05/2019)
[60] European Commission (no date), *Horizon 2020 Dashboard*. Available: https://webgate.ec.europa.eu/dashboard/sense/app/93297a69-09fd-4ef5-889f-b83c4e21d33e/sheet/a879124b-bfc3- 493f-93a9-34f0e7fba124/state/analysis (Accessed 16/05/2019 - Figures correct as of this date)
[61] Between the inception of Horizon 2020 in 2013 and the 16th March 2019, the UK had attracted 13.63% of all funding awarded through the programme, coming second only to Germany.
[62] 66.8% of €13 billion
[63] €8.68 billion divided by seven.

researchers struggled to find new contracts and projects, while specialist administrative staff and lab technicians had difficulties finding alternative employment due to the slimming down of existing teams following the reduced administrative burden of application, reporting and management duties of EU grants.

This is undoubtedly the most readily identifiable, and quantifiable, consequence of a complete loss of access to EU funding, however EU grants cover more than just the direct costs of undertaking a specific research project. A number of initiatives are funded through the EU's programmes, each with an underlying goal aimed at strengthening diverse aspects of Member States' research and therefore creating the conditions for the long-term, sustainable competitivity of both the bloc as a whole and individual Member States' science sectors. These initiatives offer grants for a wide range of activities, from improving capacity and investing in infrastructure to supporting early-career researchers and meeting EU policy objectives. This pervasiveness of EU funding throughout the British HE sector means that a loss of access to this funding source represents a lot more than simply needing to shelve a large number of projects.

For instance, smaller, younger institutions would likely see their ability to compete with established research players curtailed. This is down to the fact that EU funds cover projects designed to improve the research capacity of institutions by providing funds for projects these institutions couldn't support on their own and therefore giving them the opportunity to attract established researchers, and/or by providing grants for these institutions to invest in infrastructure to support their research ambitions, be this in the form of buildings, equipment or routes to market. Loss of access to these funds is likely to mean that lesser-known institutions and those who have not previously been research intensive, or have lacked the funds to be, may struggle to attract the required investment to be competitive in the arena of scientific research. This situation would be further exacerbated if the current domestic funding regime were to remain unchanged as the structural grant that the UK government provides to all British HEIs every year varies in size depending on the level of research output of each individual institution.

This means that those institutions who produce the most research, with the highest impact, receive the most funding. In practice this means those universities who can already afford high quality equipment, infrastructure and qualified staff receive the most funding, further widening the gap between the 'haves and have-nots' of the research world.

A real-world example of the unequal reliance on EU research funds is the fact that the Russell Group institutions have attracted almost €2.8 billion between them across the six years the Horizon 2020 programme has been running to date (Horizon 2020 Dashboard, 2019). This accounts for around half of all Horizon 2020 funds distributed to UK HEIs, yet it would be inaccurate to state that these institutions are heavily reliant on EU funds. Despite being the biggest financial beneficiaries of these funds EU sources only accounted for 11% of Russell Group research funds during the 2015/16 academic year[64]. Contrast this with the fact that EU funds represent 14.5% of the total research funding within the British HE sector and it is clear that these institutions have a lower reliance on the EU as a source of research funding than the sector as a

[64] Calculations made from figures available through the following document: Russell Group (2017), *The economic impact of Russell Group universities*. Available: https://www.russellgroup.ac.uk/media/5608/the-economic-impact-of-russell- group-universities.pdf (Accessed: 20/05/2019)

whole. This could certainly be due to their ability to dominate domestic funding allocations. In the 2015/16 funding year, the Russell Group universities received combined non-EU research funds of £5.09 billion (Russell Group, 2017), representing 74% of all research funding received by HEIs in that year (Russell Group, 2017).

There were 165 registered HEIs in the UK in 2017/18[65] eligible for public funding, with the Russell Group representing 14.5% of all UK institutions but capturing 74% of all publicly available research funds. This is a clear indication of the inequality within the British research landscape and whilst EU funds are not a direct countermeasure to this - we've already seen the Russell Group institutions attract a majority of EU funds - they are a valuable resource for those institutions hoping to build their research capacity and compete with the dominant players for a bigger slice of the funding pie.

These figures begin to reveal that the impact of any loss of access to EU research funds would not be spread evenly across the sector. Not only are smaller/more recent institutions likely to more keenly feel the loss of capacity building funding and infrastructure investment than their more established, better-known counterparts, but institutions with focuses on specific academic areas are also likely to face greater losses than those institutions that focus on other subject groupings. This is due both to the way the EU funds are allocated and to inherent gaps in the UK system.

Currently the vast majority of research funds distributed by the UK government are done so through the seven Research Councils[66], with two focusing on Arts, Humanities and the Social Sciences, and the remaining five councils overseeing the allocation of funds to projects in STEM areas. From this fact alone it is possible to see that domestic UK funding is heavily weighted towards supporting science and technology based research, potentially due to the fact that any breakthroughs this type of research generates are often easier to commercialise, and also the fact that investment in these areas aligns with the policy objectives laid out in the government's recent Industrial Strategy White Paper. This inequality of funding is even more obvious when looking at the numbers involved, with only 8.9% of available UK Research Council funding distributed through the two councils dedicated to the Humanities and Social Sciences[67]. When the fact that private enterprise, and to some extent charities, are also drawn towards marketable research is considered it becomes clear that the Humanities, including Arts, and Social Sciences receive proportionally less funding than their STEM counterparts under the current domestic system of research funding.

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[65] Higher Education Statistics Agency (no date), *Higher education providers*. Available: https://www.hesa.ac.uk/support/providers (Accessed 20/05/2018)

[66] The seven Research Councils are as follows;

1. Arts & Humanities Research Council (AHRC)
2. Biotechnology & Biological Sciences Research Council (BBSRC)
3. Engineering & Physical Sciences Research Council (EPSRC)
4. Economic & Social Research Council (ESRC)
5. Medical Research Council (MRC)
6. Natural Environment Research Council (NERC)
7. Science & Technology Facilities Council (STFC)

[67] Representing £268 million from a total of £2.99 billion. Figures pulled from: Department for Business Innovation & Skills (2016), *The allocation of science and research funding.* Available: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/505308/bis-16-160- allocation-science-research-funding-2016-17-2019-20.pdf (Accessed: 24/05/2018)

The Horizon 2020 programme offered some relief to this shortfall with Social Science and Humanities research embedded into the 'general objectives' of the programme[68]. This meant that researchers within these areas could apply for funds under any of Horizon 2020's myriad programmes and objectives and not only those specifically designed for the Humanities or Social Sciences. From 2014-16 12.9% of Horizon 2020 funding was awarded to projects within the Humanities and Social Sciences[69], representing greater proportional representation of these subjects than the UK system.

Whilst the scale of financial loss if British Institutions were unable to access EU research funds post-Brexit is in itself a powerful illustrator, it is the knock-on effects of this that will have the most impact on the HE sector and the individual institutions within it. At sector level it is plausible that there could be a drop in the competitiveness of UK institutions in attracting international funding and skilled overseas researchers as there would be less funding available. Should the UK lose all access to EU funded projects post-Brexit, with no comparable increase in domestic funding, the scarcity of funding could either mean that foreign researchers would be unable to secure the grants required to work in the UK or at a significant enough level to reach the £30,000 threshold required for a visa.

This could lead to a lower percentage of the research workforce coming from non-UK backgrounds and therefore British institutions would not receive as many of the benefits that this demographic currently bring in terms of knowledge sharing and inter-country collaboration. This could have the effect of reducing the impact of British research, as measured by citations, by reducing the number of papers produced by British institutions that were co-authored by non-British based researchers and thus the citation bonus that comes with this type of collaborative research[70].

On an institutional level one concern revolves around students' reliance on rankings tables as a judge of university quality and the impact of research activity upon universities' positioning within these. There are three main league tables for universities in the UK, The Times, The Guardian and The Complete University Guide and of these three only The Guardian does not use any metrics related to research in its methodology. In The Times' ranking the research metric accounts for 30% of a university's final ranking[71] with the research metrics in The Complete University Guide

[68] European Commission (no date), *Social Sciences and Humanities*. Available: https://ec.europa.eu/programmes/horizon2020/en/area/social-sciences-and-humanities (Accessed 17/05/2019)

[69] [67] European Commission (2017), *Horizon 2020 in full swing. Three years on.* Available: https://ec.europa.eu/programmes/horizon2020/sites/horizon2020/files/h2020_threeyearson_a4_horizontal_2018_web.pdf f. (Accessed 20/05/2019)

[70] [68] Although the UK counts for just 0.9 percent of the global population, it produces 15.2 percent of the world's most highly cited research. Between 2002 and 2011 with 45.1% of all projects with at least one UK author including an author from a non-UK based institution, even surpassing the US by percentage of research conducted with a non-domestic partner.

Information pulled from: Adams, J. And Gurney,K, (2018) *Bilateral and Multilateral Coauthorship and Citation Impact: Patterns in UK and US International Collaboration*, Available: https://www.frontiersin.org/articles/10.3389/frma.2018.00012/full (Accessed 22/05/2019)

And,

Boucherie, S. and Gurney, T. (2017), *Report compares UK's research performance with key nations*. Available: https://www.elsevier.com/connect/report-compares-uks-research-performance-with-key-nations/ (Accessed: 22/05/2019)

[71] Times Higher Education (2018), *World University Rankings 2019: methodology*. Available:

accounting for almost 19%[72] of an institution's final score. The inclusion of a research metric can have a significant effect on an institution's ranking and this is nicely evidenced by Kent's positioning in each of the aforementioned tables. In the 2019 version of the rankings, Kent was placed 44th in The Complete University Guide and 55th in The Times, yet came 35th in The Guardian's ranking. There will always be some level of discrepancy between different rankings tables as they use differing methodologies and metrics, however this does show that Kent performed significantly better in the table that does not include research as a metric. Given the other metrics used in each of the rankings are similar and pulled from the same publicly available sources, this phenomenon could demonstrate that any drop in research quality or quantity due to loss of funding could have a very real impact on a university's ability to attract students and subsequently upon the income they represent.

Another potential side effect of reduced or non-existent access to EU funds could be the need for universities to find alternate funding sources. This has the potential to be a positive element of Brexit as universities could be forced to innovate in order to replace lost income. Institutions may therefore find new and resilient ways to generate income that would endure far beyond the introduction of any future relationship with the EU or change in government policy. Exactly what these measures are will depend on each individual institution's specific circumstances and its ability to leverage these into a positive impact. What is clear, however, is that the success of these initiatives is down to the institutions themselves and so any success stories are likely to be localised rather than widespread. An interim framework, preferably provided by government, would help all stakeholders to make the most of possible synergies by fixing the 'rules of the game'.

A further possible consequence of this loss of funding would be that institutions that traditionally focussed on areas such as the Humanities and Social Sciences attempt to transition into more STEM focussed activities in a bid to attract more funding. This is a high-risk strategy as these institutions are not likely to have a track record in these areas and as such would struggle to compete for funding with established players. This strategy would also involve significant up-front investment given the need for specialist equipment putting additional pressure on already strained budgets. Universities are likely to know this and so in order to mitigate the risk of transitioning to placing more emphasis on STEM work, institutions could look to increase investment in any STEM research they are already undertaking. This would certainly be a more prudent approach than an all-out shift into new areas, and would likely involve a much less significant up-front financial commitment, but it is not without its issues. Investing in research capacity is not something that has an immediate pay-off. It takes time to build reputation and establish a track record of excellence in a particular area, both of which are vital when competing for funds, especially in the context of lost access to all EU research funding. Whilst investing in STEM research could pay dividends in the long run, both in terms of increased access to domestic funding and increased income from marketable breakthroughs, it is not a quick fix, nor one that has any guarantee of success. Given the larger players are also increasing their investment in research capacity, this is a strategy that would almost certainly only add to the short-term burden of institutions for muted

https://www.timeshighereducation.com/world-university-rankings/methodology-world-university-rankings-2019 (Accessed: 08/07/2019)

[72] The total weighting of research markers is 1.5 out of a total of 8, therefore giving a percentage of 18.9. The Complete University Guide (no date), *League Table Methodology*. Available: https://www.thecompleteuniversityguide.co.uk/league- tables/university-and-subject-league-tables-methodology/ (accessed: 08/07/2019)

and ephemeral long-term gains, and one that would disproportionately affect mid to low-ranked institutions given they are already competing against each other for a smaller share of the research funding available than their more established peers.

5.4.2 Research Staff

The research-related workforce covers a wide range of roles, from academic staff, lab technicians and grant administrators working in universities to those working in the spin-off companies that spring up to capitalise on new research breakthroughs.

HESA holds data on staff working in universities and their 2017 release includes a breakdown of staff by contract type. Assuming that all of those who are employed on the 'research' contract type are actively engaged in research activity the HESA data would conclude that in 20187/18, 211,980 people were employed in positions that were related to research activity. However not all staff working within the HE research sector are employed on research contracts. If those staff employed on non-research contracts but listed as working in job categories such as 'technical occupations' - typically lab support staff - are also considered as research staff then this figure increases to 282,610 - 65.8% of the entire HE workforce.

Whilst it is unlikely that all of these staff members are employed in roles that only depend on research income, it does demonstrate the population of the workforce that would stand to be affected by and drop in research activity, potentially resulting from a loss of EU funding. Considering that EU research funds represented 14.5% of all research income in 2015/16 (HEFCE, 2016) and a worst-case scenario would lead to a similar percentage reduction in staff numbers it is possible that just under 50,000 people lose their jobs or have their hours reduced. This is a fairly crude comparison and clearly a 14.5% drop in funding will not necessarily lead to a 14.5% drop in staff numbers but unfortunately no data exists on the exact nature of the link between levels of research income and staffing levels in research facing roles and it is therefore not possible to calculate the exact impact of a complete loss of EU funds on staffing levels. Despite not knowing the exact relationship between funding and staffing levels it is likely that a drop in research funding would lead to job losses in much the same way that a drop in income in any area of enterprise could lead to job losses.

Should the UK research sector find itself needing to shed its research related staff this could have several consequences, although these would not be evenly distributed across the sector. As discussed earlier, humanities and social science disciplines will be more affected than their STEM[73] counterparts with staff working in these areas are more likely to find themselves facing increased competition for funds and/or available support positions. If a more robust and comprehensive domestic funding regime is not put in place post-Brexit, there is a risk that these staff members may be forced to give up entirely on careers in research or to move to other countries where this funding is more abundant[74]. The likelihood of researchers moving abroad to

[73] Science, Technology, Engineering and Maths
[74] Countries like France understood this early in the Brexit process and have actively been courting research staff at British HEIs

continue their research is, on the whole, quite high given the fact that European Research Council (ERC) grants are open to researchers of any nationality, including non-EU nationals[75], so long as the research is carried out at a host institution located within a Horizon 2020 participant State. If researchers were to move *en masse* to other European institutions to be able to continue their research the UK is likely to suffer a 'brain-drain'. Another element to consider here is that the EU operates a system whereby two of Horizon 2020's main research funding strands are allocated to research projects that align with the European Commission's long-term strategic goals - a top-down approach - with the remaining major funding route being reserved for researcher-led initiatives - a bottom- up approach - in any area whilst the current UK domestic funding landscape is firmly aimed at top-down initiatives. EU funding currently offers a valuable source of income for those researchers involved in areas that are not, currently, of strategic interest to the UK government. Without this funding source there is a chance that crucial discoveries could not be made simply because the government did not consider of strategic value the area of research that would have led to them.

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These are sector level repercussions of Brexit's potential effect on research staff, but behind the numbers and the effect on university finances are real lives and livelihoods and these stand to be impacted too. The personal cost to individuals of those potential Brexit impacts previously described has the potential to be high. If researchers did decide to move overseas to countries in which research funding is more abundant the proportion that did so would likely not be spread evenly over each demographic within the research community. For example It is likely that only those researchers with a high incidence of mobility would be able to do so. One of the main considerations would be financial viability however those members of staff with dependents or other serious non-work related commitments would also face more barriers to moving than would their non- encumbered colleagues. This could lead to a situation in which younger researchers, who often have less responsibilities and commitments, were proportionally more able to move and therefore they would become proportionally less well-represented in the UK HE research workforce than their older colleagues. Whilst not particularly an issue in the short-term, the effects would become more pronounced in the long-term. With a lack of younger, qualified, researchers coming through the system public institutions could have difficulty finding suitable candidates to fill advisory roles, as would private enterprise, especially if immigration policy made it hard to fill these roles with non-UK nationals. This phenomenon could lead to a loss of competitive advantage and/or poorly thought out policy decisions.

with attractive incentive packages.

[75] European Commission (no date), *European Research Council*. Available: https://www.thecompleteuniversityguide.co.uk/league-tables/university-and-subject-league-tables-methodology/ (Accessed: 26/11/2017)

5.4.3 Private Enterprise

Companies that are directly set-up to commercialise research ('spin outs[76]') as well as those that benefit from hiring qualified graduates and/or Knowledge Exchange Partnerships[77] (KTPs) with HEIs would also likely feel an impact from any post-Brexit funding gaps. An insight into the scale of this impact can be gained by looking at the number of 'spin out' companies created and the number of businesses involved in Knowledge Transfer Partnerships. According to data available in and Anderson and Law report[78] published in April 2018, 636 new university spin out companies were created between 2011 and 2017 - averaging 90 per year. As for KTPs, a 2014 Innovate UK report[79] states there were 642 Knowledge Transfer Partnership projects in progress in March of that year involving 98 HEIs.

As spin out companies are set up to commercialise research findings owned by universities, or their staff, they are directly impacted by the level and intensity of research that goes on in universities. As such it stands to reason that any slowdown in university research activity caused by a loss of funding would slow the rate of spin out creation. Unfortunately no publicly available data demonstrates the rate of spin out creation per year meaning it is not possible to compare this to the level of public research funding in those years and thus understand their exact relationship. KTPs on the other hand are mostly financed by private enterprises themselves and so are not as reliant on the levels of public funds available to HEIs, although the government does provide financial support for these initiatives. Any slow-down in spin out, or KTP creation could help to exacerbate the brain drain of qualified research staff noted earlier given the lower availability of jobs for this demographic. On a macroeconomic level, could lead to a loss of competitive advantage for the UK as a whole, with the pace of innovation slowing due to a reduction in the number of research related jobs.

However whilst the creation of spin outs might be linked to the level of university funding available their survival, along with the success of KTPs, depends heavily on investment from the private sector. Therefore the real impact on these areas is likely to be more heavily influenced by Brexit's impact on the wider economy than it is by the level of public research funds available to HEIs. If private enterprise continues to invest in spin outs and KTPs post Brexit, or increases investment as a way to retain competitive advantage, they may be able to help stem the potential flow of knowledge overseas by boosting job creation for those members of staff with highly specialised skill sets, from academics to technical support staff who have either been made redundant or have struggled to compete for funds in a post-EU funded Britain. The job creation credentials of these schemes is already well-documented with KTPs creating 450 new job posts in the 2013 - 14 period alone (Innovate UK, 2014). Assuming the spin outs highlighted in the Anderson and Law report created at least one job each then this would equate to an additional 90 jobs per year. Neither of these figures include any additional jobs created further down the supply chain as a

[76] A 'spin out' is a company that is set up by university staff, or students, specifically to capitalise on intellectual property owned by the university, or its researchers. It is essentially the same as a 'start-up' but with a university as a minority stakeholder.
[77] KTPs have been around for decades and involves bringing together a business, a recent graduate and an HEI on a particular project for a period of between one to three years.
[78] Anderson & Law (2018), *University Spinouts: An imperfect ecosystem*. Available: http://www.andlaw.eu/wp-content/uploads/2018/04/Anderson-Law-University-Spinouts-report-April-2018.pdf (Accessed: 10/07/2019)
[79] Innovate UK (2014), *Knowledge Transfer Partnerships: Achievements and Outcomes 2013 to 2014*. Available: https://static.ktponline.org.uk/assets/2015/pdf/KTP_Achievements_and_Outcomes_%202014_FINAL.pdf (Accessed: 10/07/2019)

result of the increased economic activity surrounding KTPs and spin outs. Furthermore private enterprise may also help to tackle the potential problem of an ageing research workforce by taking on recent graduates for more junior positions in order to ensure a healthy supply of talent they can mould to their specific purposes.

This is one possible outcome and relies on a whole host of other factors. For instance this option only remains viable if the UK continues to be considered a good place to operate by the business community. If the macro economic climate was not business friendly, businesses would either decide not increase their R&D expenditure in the UK, or simply move to another location with a readily available source of talent and better financial returns. On an individual level this option would not be suitable for everyone either, with some staff unable to move to take up positions in the private sector either due to economic or personal considerations and others unwilling to be bound by working practices more focused on a return on investment mind-set rather than a traditional university environment in which research is conducted to create new knowledge or understanding. This being said, with increased HEI - private sector collaboration a cornerstone of the government's Industrial Strategy there is certainly a strong possibility that there could be see increased investment directed towards KTPs and universities being encouraged to join forces with existing private entities in order to commercialise their research, along with the benefits this would bring.

6 Brexit and Social & Cultural Enrichment

The last, and arguably most modern, addition to the set of key university missions is the belief that universities should be a place where students have their horizons expanded and are introduced to viewpoints, cultures and beliefs they have not previously come across and have opportunities for personal enrichment that are unavailable or scare elsewhere. There are myriad ways universities have evolved around this mission, from encouraging sport and social groups of all dimensions, recruiting international staff and students to mix with their domestic peers and increasing social mobility programmes within local communities, but perhaps the most visible and widespread manifestation of universities commitment to the social and cultural enrichment of their stakeholders is the international mobility programme.

International mobility is an important element in what has become known as the Global Knowledge Economy, with a country's ability to make the most of the Global Knowledge Economy resting on its *"capacity to participate,..., in the process of generating, accessing and sharing knowledge"*, Guruz, K (2011), *Higher Education and International Student Mobility in the Global Knowledge Economy* (P.18)[80]. There are essentially three main stakeholders behind the process of generating, accessing and sharing knowledge within the HE context and these are staff, students and HEIs themselves. Whilst staff are mainly responsible for the generation of new knowledge through research activity, students are generally those accessing knowledge with both stakeholders sharing some responsibility for the sharing of knowledge - between academics and their students and between students and the wider population through their activities post-education. HEIs are an important link in this process as they provide the facilities necessary for both the generation and sharing of knowledge.

Recorded instances of staff mobility date as far back as the ancient Greeks (Guruz, K. 2011) with itinerant academics travelling the Greek speaking world to educate the children of wealthy families. During this time student mobility was also occurring, with aspiring scholars travelling to centres of knowledge such as Athens and Alexandria. These trends are still very much alive today, although the destinations and format of these instances of mobility have changed significantly. Furthermore, the emergence of short-term mobility programmes has effectively split the HE mobility landscape in two. The first half being dedicated to those students and staff who move abroad for long periods of time, either to teach or to study a full degree, and the second half belonging to those who undertake short term instances of mobility before returning to their countries of residence.The effect of Brexit on those students and staff who choose to work or study away from home long-term, as well as Brexit's impact on teaching and research activity, has been covered in previous chapters and as such this chapter will be dedicated to short term mobility.

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[80] Guruz, K (2011), *Higher Education and International Student Mobility in the Global Knowledge Economy*. 2nd edition. Albany: State University of New York Press

6.1 Gathering Information

Before it is possible to effectively analyse the potential impact Brexit will have on this area of interest it is first necessary to understand the current situation and how the basic structures and associated processes that underpin it tie together.

British HEIs have a wealth of mobility programmes, both academic and student focused, with universities, companies, Non-Governmental Organisations (NGOs) and other organisations across the world[81]. Between academic institutions these agreements usually take the form of reciprocal student exchanges or visiting researcher schemes, whilst with NGOs and businesses they appear in the guise of placements, both voluntary and paid.

Currently universities are free to pursue partnerships with non-UK institutions as they wish, meaning they have a great deal of independence over which universities they target and the form these partnerships take. This freedom also means the format of, and processes behind, these partnerships are diverse and often ad hoc, responding to the needs of partner institutions and the scope of the projects themselves.

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This being said, the European Union has, over the past 30 years, developed a framework of guidelines and financial processes of which institutions in Member States can take advantage. This scheme, currently known as Erasmus +, is the most comprehensive project of its type anywhere in the world, in terms of both the breadth of its remit and the depth of support it provides to participating institutions and now accounts for 46% of the total number of outwardly mobile UK students[82] . What follows is a brief breakdown of the Erasmus+ framework and a table summarising each sub- branch's function, aims and level of funding.

[81] The University of Kent has over 400 partnership links with overseas universities alone. University of Kent (2017), *International Partnerships*. Available: https://www.kent.ac.uk/global/partnerships/. Accessed: 10/07/2019

[82] Written evidence submitted by the UK Erasmus+ National Agency Data.parliament.uk (2016), *Written evidence submitted by the UK Erasmus+ National Agency*. Available: http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/education-committee/the-impact-of- exiting-the-european-union-on-higher-education/written/43105.html (Accessed: 09/11/2017)

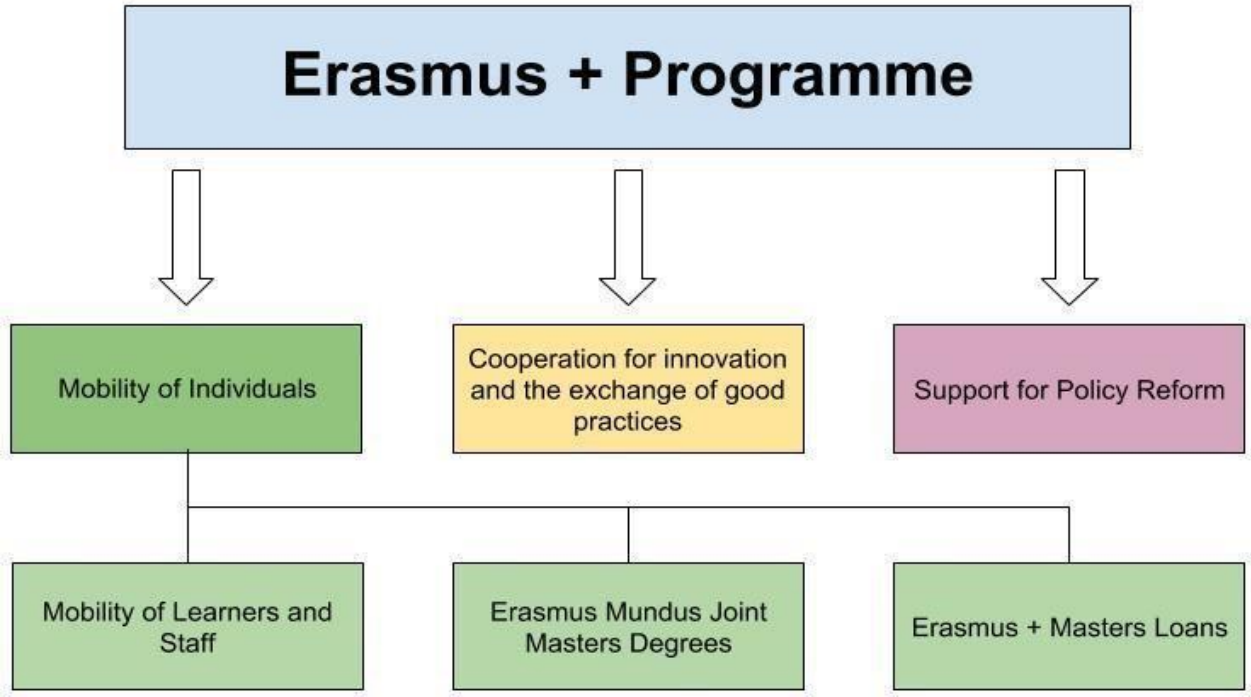

Fig.15 Diagram showing the structure of the Erasmus+ programme

The Erasmus + Scheme is broken down into three main project streams[83], known as *Key Actions*. Key Action 1 is dedicated to the mobility of individuals and therefore constitutes the main sources of funding and legal guidelines for almost all instances of mobility undertaken at, or by, institutions within EU Member States.

Key Action 2 revolves around cooperation for innovation and the exchange of good practices. To achieve its aims, this stream supports; strategic partnerships of educational providers, *Knowledge Alliances* between public and private sector, the development and delivery of joint vocational programmes as well as the modernisation and internationalisation of partner countries in the areas of 'youth' and 'education'[84].

The final Key Action, is essentially a 'catch-all' scheme aimed at providing funding to any initiative that isn't covered by the previous two streams, so long as it aids modernisation and policy reform in the areas of education, training and youth. As such, the distribution of funds associated to this stream along with the projects they relate to is either directly implemented by the Commission or via specific calls for proposals[85], rather than institutions bidding for funds for their own projects as is the case with the first two Key Actions.

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[83] Out of a total of five.
[84] European Commission (no date), *What is the structure of the Erasmus + programme?* Available: https://ec.europa.eu/programmes/erasmus-plus/programme-guide/part-a/what-is-the-structure-of-the-programme_en (Accessed: 22/08/2018)
[85] Erasmus.org, *Key action 3*. Available https://www.erasmusplus.org.uk/key-action-3 (Accessed: 22/08/2018)

Whilst the Erasmus + programme has been expanded over its 30 year lifetime to encompass almost the entirety of the EU's training, youth and sport initiatives, it is the exchange programmes that have always been the backbone of the scheme and has been directly responsible for over 9 million[86] instances of mobility either within the EU itself or any number of associated third countries[87] since its inception. Even today it is clear they are the most well-known, and well-funded, elements of the scheme. A breakdown of the funding available, at European level, through each sub-stream associated to Key Action 1 is available in figure 16.

Sub-branch	Function	Level of Funding per year
Mobility of Staff and Learners	To give individuals the opportunity to undertake a learning and / or professional experience in another country.	€1.3 Billion[88]
Erasmus Mundus Joint Masters Degrees	Joint degrees offered to exceptional students and ran by *consortia* of international educational institutions - mainly universities.	€90 million[89]
Erasmus + Masters Loans	Loans for the purpose of enabling students to study a full masters degree in a different participating country than their own.	€54 million[90]

Fig.16 Table showing Erasmus + funding available for Key Action 1

[86] European Commission (no date), *Erasmus 30th Anniversary and You*. Available: https://ec.europa.eu/programmes/erasmus-plus/anniversary/30th-anniversary-and-you_en (Accessed 28/09/2017)
[87] Countries outside the EU 28 that are associate members of the Erasmus + programme. These have included former soviet countries and others where mobility supports EU external policy aims such as China. Countries with strong research links to the EU have also been part of the programme, for example Israel.
[88] Amalgamated figures from page 39 of the *2017 annual work programme*
[89] Taken from page 41 of the *2017 annual work programme*
[90] Taken from page 46 of the *2017 annual work programme*

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6.2 Identifying the Driving Factors

With this understanding of how mobility programmes are formed and operate it is now possible to begin to identify the driving factors that will determine the future of these programmes and initiatives post Brexit. As per the methodology a PEST analysis will be used for this purpose.

Political	Economic
– Government will to financially support mobility – International political will to encourage interaction with UK HEIs	– Access to adequate funds – Students' ability to 'self-fund'
Social	**Technological**
– International HEIs feelings towards UK HEIs – International students' feelings towards the UK – UK students feelings towards mobility programmes	– Data protection regulation – Restrictions on the transfer of commercially sensitive information – Restrictions on the transfer of sensitive national security information

Fig.17 PEST analysis for Social and Cultural Enrichment

The table in Fig.17 demonstrates that although the driving factors identified are spread fairly evenly across all aspects of the PEST analysis they can be grouped into larger areas of impact such as 'funding' and 'reputation'. Using these macro areas in the next stage when plotting the driving factors onto an improbability - impact matrix allows for a more clear-cut view of the elements at play.

6.3 Identifying Critical Uncertainties

With the driving factors mapped onto the matrix in Fig.18 it is clear to see that the critical uncertainties in this case are 'access to funding' and 'reputation of British HEIs post- Brexit' and it is therefore these areas that will form the basis of analysis of the impact of Brexit on the previously identified stakeholders – students, staff and HEIs themselves.

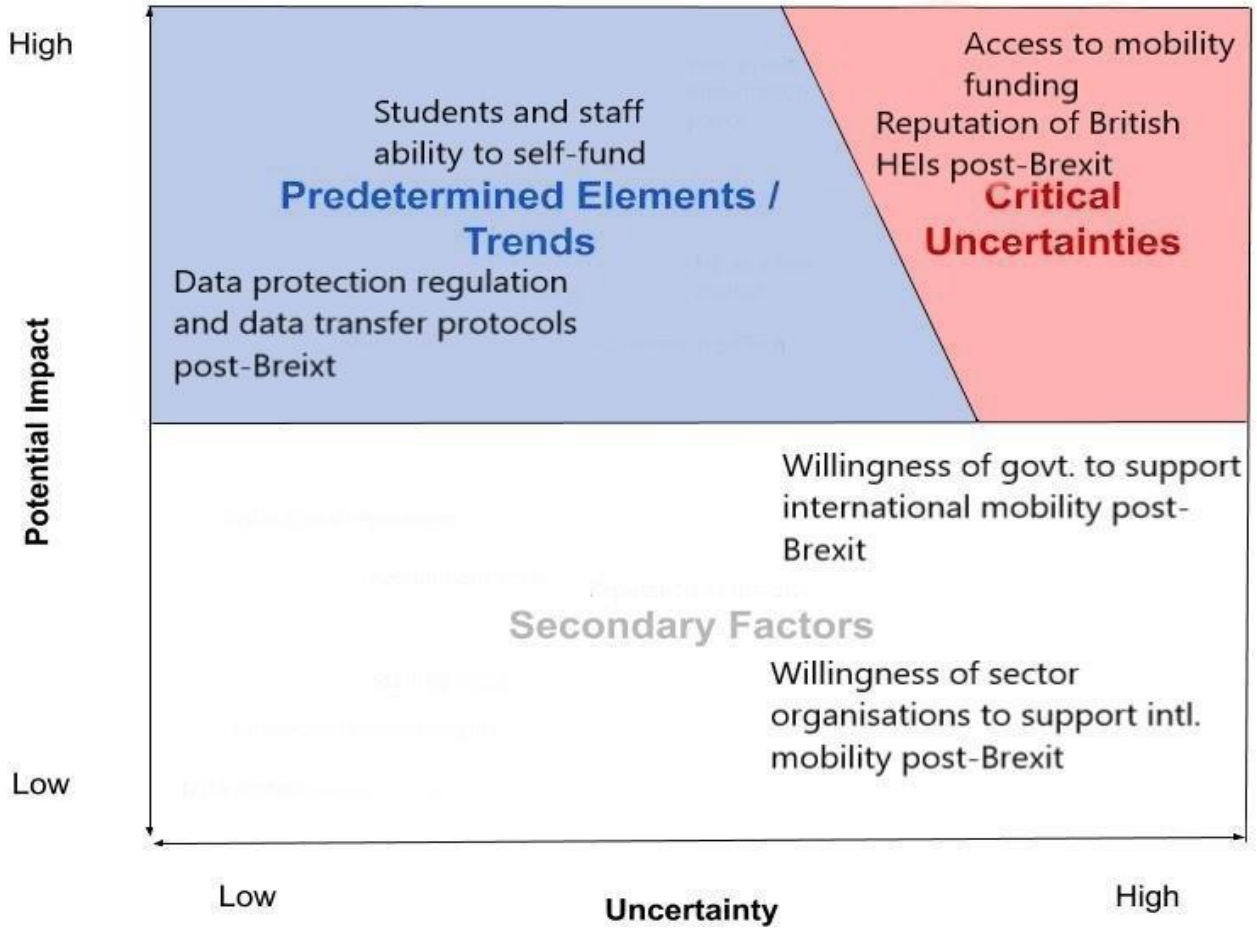

Fig.18 Impact/uncertainty matrix for Social and Cultural Enrichment

6.4 Potential repercussions of Brexit

6.4.1 Students

In the 2017/18 academic year alone 16,463 students undertook a short term mobility programme under the Erasmus + programme[91]. Unfortunately there is no systematic collection of non-Erasmus mobility data and therefore analysis on this demographic of students is difficult. However, a rough estimate of the total number of students involved in mobility schemes can be calculated by looking at the available Erasmus + data. As previously seen, 46% of mobility was conducted under the Erasmus + programme. It is therefore possible to work out that in the 2017/18 academic year roughly 36,000 students took part in overseas mobility of some kind.

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The most obvious effect on students would come from a complete loss of access to Erasmus + post-Brexit as this would lead to a situation in which all projects currently funded entirely through the programme to be scrapped and those projects partially funded through the scheme would need to be scaled back should no other funding regime be put in place to cover these costs. In real terms this could lead to over 16,000 students missing out on experiences abroad per year. Given that students who have undertaken a period of international mobility often achieve higher grades, are less likely to be unemployed and enjoy higher starting salaries than those who do not undertake such an experience[92], such a loss would have a profound impact on these student's lives. It would also likely impact the UK's ability to exert soft power and slow the creation of social and economic relations in much the same way that a slowdown of full- time international students would. This is especially true when the effect of Brexit on incoming students is taken into consideration too. In the 2016/17 academic year 31,727 students came to the UK either to study or to undertake a traineeship[93], almost double the figure of UK students that went abroad. Given the volume of incoming students, they represent a significant source of income for local businesses as well as for HEIs themselves and any reduction in incoming student numbers is likely to have a negative impact of economic activity in university towns and cities. To counteract this is considerably more difficult that replacing funding for outgoing students as sources of additional funding will be dependent on each partner institutions own financial standing as well as individual member States' willingness to support mobility to the UK and the extra financial burden cost this would entail.

The effects described above are only likely to happen if the UK lost access to the Erasmus + scheme as a result of Brexit and did not replace the funding domestically. The UK's ability to access the Erasmus + scheme post- Brexit depends on its approach to immigration as one of the requirements for participation is the free movement of people. The Swiss demonstrated this in

[91] Data drawn from the *Erasmus + UK Higher Education Mobility Statistics 2014 - 17* database downloadable from: Erasmus+ (No Date), *Statistics*. Available: https://www.erasmusplus.org.uk/statistics. Accessed 10/07/2019

[92] Universities UK International (no date), *Mobile students and their outcomes: Report on the 2012/13 graduating cohort*. Available: http://go.international.ac.uk/sites/default/files/Gone%20International%20mobile%20students%20and%20their%20outco mes.pdf, (Accessed 30/10/2017)

[93] From the *Erasmus + 2017 in Numbers* factsheet available to download from: European Commission (2017), *Erasmus+ Annual Report Factsheets United Kingdom*. Available: https://ec.europa.eu/programmes/erasmus-plus/resources/documents/erasmus-annual-report-factsheets-united-kingdom_en

2014 when they were kicked out of the programme for voting to re-introduce immigration quotas for EU citizens. With the creation of the European Settlement Scheme and the intention to make EU citizens apply for visas post-Brexit as laid out in the Immigration White paper, it certainly looks to be the case that UK students will miss out on future Erasmus + mobility opportunities.

However, the Swiss case also presents potential solutions. After it was kicked out of the scheme in 2014 the Swiss government created its own mobility programme and replaced EU funding with domestic funding. This may be an option for the UK too, especially given that the UK government has provided an annual grant to universities in order to support their mobility activity since 2012[94]. This grant is designed to help support institutions and by association, students, who undertake a period of mobility whether through the Erasmus + scheme or not.

The second route additional government funding could take is through the British Council (BC). The BC currently acts as the National Agency for the Erasmus+ project in the UK and as such has the required expertise to ensure both that funds are distributed correctly and that they are being used responsibly by institutions. The vast majority of the BC's funds are generated through teaching and examination activity with only around 15% coming directly from the UK government, with these funds being used to support activity in countries where it is not possible to generate income commercially[95]. Therefore additional funding of the level required to replace the Erasmus + programme would require a significant change in the BC's funding model and the British government's attitude to funding what is currently an independent organisation. In many ways this would be the most practical way of distributing any additional funds the government decided to allocate to mobility funding given the British Council's existing mechanisms and experience distributing Erasmus + funds.

There is another source of potential funding but this would have a larger impact on individual students than the other funding routes - charging individuals to undertake mobility programmes. This is already often the case with non- Erasmus mobility and so could easily be spread to include mobility that was previously covered by EU funding. This would shift the financial burden from institutions and/or government to individuals. Whilst an 'easier' solution than the other two it could risk ingraining and exacerbating a class system within HEIs with only those students from wealthier backgrounds able to undertake mobility and reap the associated benefits. Given mobility's proven benefits for graduates in the workplace this approach to funding could also reinforce inequality between those from poorer and wealthier backgrounds within wider society. In the current climate of widening participation and closing the class divide, this approach is not likely to be championed by government, students or universities themselves. If no other sources of funding were available to combat this phenomenon, universities would be forced to dig into their own pockets to offer subsidised mobility placements for those students from poorer backgrounds. Just how this would be done, and how these students would be identified, remains to be seen, however some universities do already operate comparable schemes for non-Erasmus mobility which could be extended.

[94] Page 12, point 13. Office for Students (2018), *Funding overview and budgets for April 2018 to July 2019*. Available: https://www.officeforstudents.org.uk/media/1360/bd-2018-mar-51-funding-overview-and-budgets-for-18-19.pdf (Accessed: 03/05/2018)

[95] British Council (no date), *Finance*. Available: https://www.britishcouncil.org/about-us/how-we-work/finance (Accessed 03/05/2018)

Given all of this is happening in a context in which big sector players such as Universities UK international, and former Ministers in the British parliament, supporting an initiative by Universities UK to double the percentage of students who spend time abroad as part of their degree by 2020[96], the pros and cons of any post-Brexit mobility funding scheme are likely to become even more visible as increasing numbers of students look to spend time abroad as part of their studies.

6.4.2 Staff

As with students the biggest impact for staff stems from a reduction in access to mobility related funds. There are currently few domestic government grants aimed at supporting staff mobility, with institutions themselves shouldering the bill in the vast majority of cases. For academic staff a good proportion of their funding for international mobility comes through research grants they receive from the seven Research Councils, but as this funding is not compartmentalised it is up to individual staff members how much of this funding they use for international mobility. This is also not a resource available to all academic staff and not accessible at all for non-research facing staff. The Erasmus + 2017 Factsheet reports that 3,238 staff members at British HEIs undertook mobility supported by the scheme in the 2016/17 academic year and that a further 4,786 non-UK staff came to the UK in the same year. This represents a total of over 8,000 individual instances of staff mobility and helps to highlight the scale of opportunity for collaboration and knowledge sharing this element of Erasmus + represents. Should staff be unable to access these opportunities there could be reduced opportunities for knowledge exchange and sharing of best practice, particularly within administrative fields given their lack of alternative sources of funding. This could lead to UK universities falling behind their European counterparts in advances within areas such as student administration, research administration, accessibility and curriculum development techniques which would have a detrimental effect on students and on their outcomes.

The 62 million Euro figure mentioned earlier, representing the total amount of Erasmus + funding the UK received in 2016/17, also covers the funding available for staff mobility and so staff would also be affected by the shortfall and need for alternate funding arrangements. If the UK government decided not to increase funding to support these initiatives and staff members were required to cover the complete costs of mobility it is likely only those on a sufficiently high salary, and/or those with few or no responsibilities or commitments outside of work, would be able to do so. It is also likely that non- academic staff would be the most affected as they earn less on average than their academic colleagues[97]. Any drop in staff mobility could lead to reduced opportunities for knowledge exchange and sharing of best practice, particularly within administrative fields. Additionally the scheme funds a number of specific programmes for early-

[96] The Pie News (2018), *UK Universities minister supports study abroad*. Available: https://thepienews.com/news/uk- universities-minister-pledges-support-study-abroad-campaign/ (Accessed: 08/08/2018)
[97] Times Higher Education (2016), *In the money?: UK university salaries 2015-16*. Avalable: https://www.timeshighereducation.com/sites/default/files/breaking_news_files/uk_university_salaries_2015-16.pdf. Accessed: 10/07/2019

career researchers to help them experience mobility and gain international experience. Should access to these programmes be cut, this demographic of researcher would lose a valuable source of opportunities to gain new knowledge, to expand their network of contacts and to increase the visibility of their work, potentially leading to reduced career opportunities in the future.

6.4.3 Higher Education Institutions

Through the discussion of the potential effects of Brexit on student and staff access to short-term mobility it is clear that HEIs themselves have a crucial role to play in the provision of these opportunities in the future. Their importance in this area can be loosely categorised into two areas; funding, and ensuring the survival of existing relationships along with identifying new opportunities for collaboration.

In the discussion on Brexit's effects on student mobility the potential need for alternative funding sources to replace funds lost through a potential withdrawal from the Erasmus + programme was highlighted. Whilst government and students themselves could act as sources of funding, so could HEIs. Erasmus funds do not currently cover the staffing costs associated with the administration of Erasmus + programmes and as such individual institutions would mostly only be required to cover the costs of the grants given to students to support them whilst overseas. Assuming the yearly funding shortfall the UK would experience if it left the Erasmus + programme is equivalent to the funding it received in 2017 - €62 million[98] - is distributed evenly between all UK HEIs eligible for funding it is possible to estimate the average additional cost British HEIs would have to shoulder per year. There are currently 209 HEIs in the United Kingdom who are eligible for Erasmus + funding[99] giving an average additional financial burden of around €296,650 per year. This is not an insignificant amount and so it is likely that only the most financially robust institutions would be able to take on this level of extra spending. This does raise an interesting dimension regarding the equity of access to these opportunities for students from differing demographics.

The UK government itself could step-in to help universities to shoulder this burden, as indeed they have proven themselves open to doing in the past. In 2012 the government allowed universities to charge a reduced tuition fee to students during their year, or semester abroad, something they had not been allowed to do up until that point. The government also began topping- up this fee income up with a government grant. In total direct payments from tuition fees and the government grant[100] now constitute 40% of the cost of a standard year's tuition[101]. In theory the government could increase this contribution to make up for the €62 million annual shortfall, allowing universities to then distribute this income to students undertaking a mobility programme within

[98] From the *Erasmus + 2017 in Numbers* factsheet available to download from: European Commission (2017), *Erasmus+ Annual Report Factsheets United Kingdom*. Avalable: https://ec.europa.eu/programmes/erasmus-plus/resources/documents/erasmus-annual-report-factsheets-united-kingdom_en(Accessed: 10/07/2019)
[99] Document extracted from: European Commission (2019), *Erasmus + - Key Action 1 - Erasmus Charter for Higher Education 2014-2020*. Available: https://eacea.ec.europa.eu/erasmus-plus/actions/erasmus-charter_en (Accessed: 23/05/2019)
[100] Given that tuition fees are paid to providers directly by government, the government is essentially providing 100% of this funding.
[101] Page 12, point 13. Office for Students (2018), *Funding overview and budgets for April 2018 to July 2019*. Available: https://www.officeforstudents.org.uk/media/1360/bd-2018-mar-51-funding-overview-and-budgets-for-18-19.pdf (Accessed: 03/05/2018)

Europe and therefore avoiding the associated impacts on the accessibility of these programmes along institutional and/or demographic lines. The danger here is that there would be fewer checks on how this money was being spent than under the current Erasmus + scheme which has robust reporting mechanisms in place to ensure the funding is being used for the correct purpose. There is a danger that some institutions would take this money and use it for other purposes, to the detriment of their mobility programmes.

Additionally, those universities that could withstand the added financial pressures of funding these programmes on their own would stand to be in a privileged position and could use any additional funds for investment in other areas, whereas those institutions with poorer financial outlooks would not be in a position to make additional investments.

This is certainly not an issue caused directly by this potential funding mechanism - universities are responsible for their own financial management - but it would reinforce the existing imbalances within the sector. Another consideration here is that these grants are calculated based on student numbers. The positive side of this is that the scheme caters for all sizes of institutions and funds them accordingly, however given the fact that universities will only be able to accurately report the number of students after the students have begun their mobility universities will still need to stump up a large amount of cash upfront before being reimbursed by the government. Institutions could spread this cost across the year, however this would require a change to how the current Erasmus + grants are distributed. Currently students receive two payments, one at the beginning of their mobility and one halfway through, if they are abroad for an entire year. Institutions could move to a monthly payment process but this is likely to incur higher admin and foreign exchange fees.

The next area universities have a strong role to play is in ensuring the continuation of current agreements and the creation of new ones to ensure students and staff have the best opportunities to reap the benefits of mobility. It is not clear how Brexit would affect this area of a HEIs activity in any material way as the likelihood of international collaboration depends more on the reputation of the institution or individual staff member leading a specific project. It could be said that should staff members lose the ability to undertake mobility there could be less of a chance of them being sufficiently well-known amongst their peers to attract new international partners, but this is impossible to prove without data on the number of new agreements signed per year or the number of instances of staff mobility in the same period. Where the UK leaving the EU, and subsequently the Erasmus + programme would have an impact, would be on the governance structure that underpins the operation of Erasmus exchange agreements, but this would only be an issue when signing agreements with institutions in the remaining Erasmus + participant countries. This is because currently no large- scale mobility frameworks aimed at supporting non-EU mobility exist. The function, finance and purpose of these non-EU programmes is determined by the institutions themselves, giving rise to a large amount of variation from institution to institution.

Sources of finance for these mobility programmes can range from the participant themselves to institutional, governmental or third party scholarships.

The EU currently operates a centralised framework in which the ‘rules of the game’ are laid out and so institutions wishing to form partnerships with those in other Erasmus + countries know that there is a common way of going about this. The effect of this standardisation is to make the

partnership process more efficient by allowing more targeted communications between the relevant administrative staff and speeding-up other administrative tasks such as Quality Assurance and Due Diligence. Should the UK lose access to the Erasmus + programme it would also lose access to this framework although British institutions could continue using it unofficially. This would make sense from a practical point of view for maintaining existing projects agreed under the Erasmus + scheme but could also be rolled out further to encompass agreements with institutions in non-Erasmus + countries. The British Council already plays a role in the management of inter-university partnerships by acting as an intermediary, providing introductions between parties interested in forming partnerships and providing advice and guidance to those UK institutions that are new to partnerships in general or to working in a specific region and this area of its activity could be expanded post-Brexit to provide a more standardised framework for institutions from all countries wishing to enter into agreements with British institutions. However, a UK-wide standardised process could limit the flexibility of the agreements universities could make by removing some of their ability to tailor agreements based on the scope of the project at hand and the particular characteristics of the institution(s) involved.

This governance issue is also very much a student-centric problem as staff mobility generally does not rely upon existing agreements. There are bilateral agreements in place that allow for regular mobility of academic staff, usually to give lectures at a partner institution, but the vast majority of staff mobility is undertaken on an ad-hoc basis or through specially arranged training programmes that are often open to staff at any institution rather than those with which the host has a specific agreement[102].

Therefore there is unlikely to be any significant increase in costs for those institutions who wish to host British staff post-Brexit.

So far in the discussion on the impact of Brexit on HEIs has focused on instances of temporary mobility, however the Erasmus + programme also funds the Erasmus Mundus project which allows for groups of institutions within the EU to come together to offer joint masters degrees with students studying for one year at one institution and a further year at another institution. These schemes generally are equally as important to the institutions as they are to the students that study them given their financial benefit and their reputational benefit - these schemes are regarded as highly prestigious within HE circles. At the time of writing there were 27 opportunities involving British institutions advertised[103]. There is a possibility that British HEIs would be able to access these programmes post-Brexit as they do not require all members of the group to be within the EU but the likelihood of this very much depends on the reputation of the UK and its HEI sector post-Brexit and the willingness of EU institutions to engage with British HEIs.

[102] Although these programmes will often express a preference for colleagues from a partner institution and some will be reserved for only this type of staff member.
[103] European Commission (no date), *EMJMD Catalogue*. Available: Office for Students (2018), *Funding overview and budgets for April 2018 to July 2019*. Available: https://www.officeforstudents.org.uk/media/1360/bd-2018-mar-51- funding-overview-and-budgets-for-18-19.pdf (Accessed: 03/05/2018)

7 Conclusion

This dissertation set out to gain an insight into the effect of Brexit on key areas within the HE sector and the key stakeholders within it. In order to do this three major areas of university activity were identified; the transfer of academic knowledge, research, and social & cultural enrichment. A bespoke methodology was then employed, drawing upon techniques laid down in the field of Scenario Planning by Fox (2018), Raspin et al. (2007), Schwartz (1998) and Wade (2012), to identify the areas of most importance, characterised as being those with the most impact and most uncertainty, within the three main trends of university activity.

The methodology was subsequently re-deployed in each chapter and a narrative was created to bring together the results generated by the methodology and generate understandable insights. What the chapters above have provided is a set of insights specific to each area of university activity and here they are summarised and distilled into their core messages. There is also a comment on work still to be done.

7.1 Brexit and the Transfer of Knowledge

In this chapter, it was demonstrated that the main stakeholders involved in the generation and transfer of knowledge are staff and students and that there are three main factors that will influence the HE sector's ability to recruit and retain the best and brightest post-Brexit - immigration, reputation and cost. At the time of writing it was not possible to provide any robust analysis of the potential post-Brexit cost of HE provision beyond a cursory acknowledgement that the cost of a British degree had become proportionally cheaper in the years after Brexit due to the declining power of the British Pound. This was due to the lack of any consistent, reliable, signposts on which to base an analysis as well as the fact that the biggest change to the cost of a degree would come from the implementation of the Augur review, which was beyond the scope of this study. The analysis within this chapter subsequently focused on the impact of a future immigration policy - given that Brexit would have little direct impact on domestic students and what impact it would have would stem from any impact upon the influx of non-UK students - and any effects a change in reputation of the UK or its HE sector may have.

The cues for analysis of the question of immigration were taken from the government's Immigration Whitepaper, published in December 2018, which sets out the government's view of the implementation of a skills-based immigration system post-Brexit. During the analysis it became apparent that European staff and students stand to be the most affected by this change as they will, most likely, be subjected to a visa regime instead of being able to freely travel and work within the United Kingdom as they are now. The reworking of the immigration system laid out within the White Paper does not present a large change for non-EU, non-UK citizens as it

stands but does have the potential to dramatically impact this demographic - particularly staff - through a further review of immigration prerequisites which has been promised by the Home Secretary.

Even within the European staff demographic there were differences - between those already working in British HEIs and those wishing to work here but currently based outside the UK. The establishment of the EU Settlement Scheme has all but guaranteed the rights of those EU citizens already living and working in the UK and as such any post-Brexit immigration scheme is unlikely to affect this type of worker. Those that stand to be the hardest hit are those EU citizens who do not currently live or work in the UK but who wish to do so. The application of current immigration policies to EU citizens would disproportionately affect those working in administrative or professional service roles given these generally do not attract sufficient salary to pass the £30,000 threshold required to be eligible for a work visa. Academic salaries do, on average, pass this level and so shouldn't cause a barrier to any EU academics who wished to work in the British HE sector. However junior academics from EU countries would stand to be adversely affected as the majority of entry-level positions do not attract a salary upwards of £30,000. It was estimated that, should all EU immigration to the UK for positions that currently pay less than the £30,000 visa threshold cease and turnover rate within the sector remain stable, there could be a total shortfall of 3,540 staff per year across the sector. Given that there are 114 institutions currently recognised as universities by the Office for Students this would amount to an average shortfall of 25 staff per institution per year if this phenomenon were spread evenly across the sector. This is unlikely to be the case as some universities will experience greater levels of loss than others due to additional external factors, but what is obvious is that this level of staffing would be fairly easy to replace from within local populations. Given their specific skill sets, academic and technical staff would be harder to replace from within the local workforce pool, however most of these positions attract a salary of over £30,000 meaning any shortfall here could be compensated for by recruitment of non- UK candidates.

The picture for students is somewhat different given that there is no salary threshold for the issuance of a Tier 4 study visa. Whilst the greatest impact yet again will fall on EU citizens due to the need to obtain a visa where none was previously required, there are no signposts available to help guide the analysis on exactly what the impact on these students would be. The scope of analysis in this area was therefore limited on the effect of White Paper reforms on those students that do currently need a visa to study here.

Unlike work visas some immediate work has been done on reforming the student visa, with students starting courses in September 2019 receiving four months leave after the completion of their studies, rather than the three they receive currently. Post study work arrangements are incredibly popular amongst students and they are prolific amongst the UK's competitor countries in the arena of international HE, with countries such as Australia, Canada and the USA all offering schemes allowing students to stay and work for a number of years after their studies. In comparison the UK's four months seems rather paltry and is unlikely to significantly boost student numbers. However Boris Johnson, Jeremy Hunt and Sajid Javid have all previously expressed a desire to extend the scheme further, potentially restoring the scheme that was in place until 2012 that allowed students to work in the UK for a period of two years post-graduation. Should this be brought back in it is likely to have a positive impact on the number of students enrolling in UK

institutions rather than those in competitor countries, although the scale of such a benefit is unclear.

Given the above it could be possible to believe that there will be no problem post-Brexit with either the recruitment or retention of both staff and students, however immigration is only one side of the coin. It is one thing for people to legally be able to come here but it is another entirely for them to want to. Reputation is therefore a key driver for both staff and students, of all nationalities wishing to study or work abroad. At the time of writing Brexit it has not happened and so no data is available on its 'true' effect on migration. As such migration trends post-referendum were used to help identify any post-Brexit possibilities. Once again the analysis showed that the effects could be split down EU/non-EU lines, although this time both students and staff showed remarkable similar trends.

In the years since the referendum vote net migration to the UK by EU nationals fell sharply but still remained positive even increasingly slightly in 2018. If this trend continued post-Brexit then it stands to reason HEIs would have little trouble recruiting sufficient staff to replace those that left, although as previously demonstrated, immigration policy would have a large effect here. In a survey of potential students, their desire to choose the UK as a study destination had also fallen dramatically since the 2016 referendum, however application figures from UCAS showed a recovery within the EU demographic in the 2018/19 academic year. What the data from these sources seem to show us is that there was a strong reaction to the initial vote to leave the EU but that this has subsided somewhat in the years since. Given this trend is visible in all available data it could be assumed that this dip and recovery could also happen post- Brexit, however the key difference between the post-referendum and post-Brexit years will be the implementation of an immigration policy for EU citizens and so the post-referendum trend may not prove true.

For those non-EU citizens, either those wishing to study here or to work here, not much has changed since the referendum. Net migration continued to rise, with emigration rates remaining stable throughout the 2016 - 2019 period. Interest in studying in the UK actually rose in this demographic after the Brexit vote, although this did not transfer into actual applications, as evidenced by UCAS figures. What this would seem to demonstrate is that whilst non-EU immigration is rising, this is mainly due to people coming to work in the UK rather than study. This may be due to prohibitive student immigration policies, the cost of a UK education or the fact that more enticing destinations exist.

The future of knowledge transfer within HE looks secure with staffing levels likely remaining consistent, at least at sector level, with any shortfall in administrative positions easily being made up by recruiting domestic workers and the flow of non-EU students also looks to be healthy, though growth is still below that of competitor countries. The impact on EU students is likely to be the most noticeable with student numbers likely dropping off significantly after the introduction of a visa regime. This could pose a problem for universities who derive a larger proportion of their teaching income from EU students than the sector average. Any major challenges to the maintenance of staffing and student levels, come from the current domestic demographic dip, increased competition as a study destination from other countries and the implementation of the Augur review recommendations - all elements that are not directly related to Brexit.

7.2 Brexit and the Generation of new Knowledge

Kerr (2001) believes that the generation of new knowledge is the most important activity of a university's mission to increase economic output, be it of a local area, region or country. Almost all new knowledge generated by universities is done so through research activity and so it was upon this specific activity the analysis focused when weighing up the effect of Brexit on this particular strand of university activity.

Stakeholders within this process were identified as HEIs themselves, research focused staff, and private enterprise.

Universities are the main stakeholder within the process as they are the places that bring together the elements for research activity to take place; funds, equipment and staff. Engaging in research activity is in a university's own interest as well as it helps prove a direct benefit for the local community - something that is becoming more and more important in the current socio-political climate - it helps to attract the most talented researchers which in turn helps to build a reputation for producing well-informed graduates thus increasing revenue from teaching. Universities currently receive a large proportion of their research income from government funding and this is likely to increase given the government pledge to increase Research and Development funding as laid out in their Industrial Strategy White Paper from 2017. These governmental funds are currently distributed through seven Research Councils each focused on supporting specific areas of scientific study and innovation. Each university currently receives a yearly grant to support research infrastructure with the rest of the funds being distributed through a bidding process by which individual academics, research groups or institutions submit proposals to the Councils.

Given the government's pledge to increase research spending post-Brexit, the biggest impact of Brexit would come from a lack of access to EU research programmes and infrastructure. In 2015/16 EU research funding accounted for 14.5% of all research income from British universities and being cut off from this level of funding could equate to 1.24 billion euros of funding, assuming British HEIs continued their past success rate in bidding for EU funds. This could severely limit their ability to fund research activity and could lead to a shortage in the research-related workforce as academics head overseas, either to continue to bid for EU funds or to other countries where funding is more abundant. Not all universities in the UK are successful in attracting research funding, with Oxbridge and the Russell Group taking the lion's share of all available domestic and EU funding, yet being proportionally less reliant on it than other institutions due to their higher rate of alternative income sources. Should this remain unaddressed post-Brexit this disparity between traditionally research- intensive institutions and those newer, or teaching focused institutions, could continue to grow.

For staff members this potential shortfall in funding would be more keenly felt. The government has agreed to underwrite any funds allocated to UK institutions under the EU's Horizon 2020 programme in the case of a no deal Brexit, but only until the end of 2020. After this date if the government increase in funding did not match the loss of EU funds then competition for domestic funding would become fiercer and it is likely that some staff would lose their jobs. Though most

research staff these days are employed on split teaching/research contracts it is unlikely that universities would be able to give them enough teaching activity to keep them busy especially during a sector-wide fall in student numbers due to the demographic dip.

Private enterprise mainly benefits through research in two ways. The first of which is by existing solely for the purpose of commercialising university research through what are known as 'spin out' companies and the second of which is more widespread and involves universities, graduates and existing companies to come together to share knowledge and thus create an economic benefit through initiatives known as Knowledge Transfer Partnerships (KTPs). It is possible that, should UK universities lose a significant proportion of their research income post-Brexit and their research intensity fall as a result, the level of spin out company creation would also slow. As these companies grow, they create employment and both direct and indirect economic benefits throughout the supply chain and local area and therefore any slowdown in their creation could have wider knock-on effects. As a large proportion of the intellectual property behind the products or services these companies commercialise is owed by universities their profits also help to generate income for universities themselves which can then be used to fund other research projects. A slowdown in economic activity surrounding spin outs could also therefore lead to a slowdown in university income from the commercialisation of research. KTPs on the other hand have been around for decades and are likely to take on further importance post-Brexit with one of the cornerstones of the Industrial Strategy White Paper being deeper cooperation between HE and private enterprise. As these schemes are mostly funded by the company involved, with the UK government covering the administrative costs, the prevalence of these schemes is more closely tied to the performance of the economy as a whole post-Brexit than it is on the level of research funding available.

Overall the generation of new knowledge is facing challenges post-Brexit, mainly in relation to the retention of specialised staff as other countries try to tempt them away with attractive packages and as researchers move to EU States to bid for EU funds - eligibility for these is tied to the country of the institution carrying out the research rather than the nationality of the lead researcher. HEIs could be facing a shortfall of funding post-Brexit if access to EU funding schemes is not secured, although the UK government has pledged to step-up its funding which could counteract any negative effects of the loss of EU funds. The success of this will depend not only on the level of funding available, but how it is distributed to universities and which disciplines it targets. Predominantly the challenges faced by those involved in research-related activity stem from systemic issues in current funding processes with Brexit-related effects adding to these pressures.

7.3 Brexit and Social & Cultural Enrichment.

In the exploration of the social and cultural enrichment activities universities provide it was suggested that perhaps the most 'concentrated' manifestation of these was the international mobility programme. These programmes come in all shapes and sizes and combined they allow for an estimated 36,000 students to go abroad every year on a recognised scheme and for over 3,000 staff to do the same. They also represent an opportunity for those students and staff who do not, or cannot, take part in an exchange programme themselves to come into contact with students from abroad with over 31,000 students and 4,000 staff coming to the UK through EU funded programmes alone.

Whilst EU student mobility only accounts for 46% of all outward mobility the European Union does provide the most comprehensive system of administration and funding of mobility programmes for students and staff anywhere in the world. Over 1.3 billion Euros of funding is available across the European Union every year specifically for student and staff mobility projects helping to open up these possibilities to those who would not otherwise have been able to afford it. Given its place as the pre-eminent international mobility programme globally, access to the Erasmus + scheme post-Brexit is one of the most important elements to consider when determining the impact of Brexit on social and cultural enrichment.

Given the volume of student exchange programmes it is students rather than staff who stand to be most affected by any loss of access to the Erasmus + programme.

Currently there is no national or international framework to support non-EU exchanges, either administrative or otherwise. Individual institutions are responsible for deciding where the financial burden of these lies, with some taking it upon themselves to provide grants to ensure disadvantaged students are equally as able as their more well-off peers to undertake mobility programmes outside of the Erasmus + programme, whereas others expect students to fully fund the cost of their international experience. The Erasmus + scheme proves a valuable levelling force by ensuring those from all walks of life and socio-economic backgrounds have access to the funds to access and benefit from international mobility. Should access to these funds disappear it is likely those students from the most disadvantaged backgrounds would suffer the most as they would be the least likely to be able to fund such an experience themselves. As international mobility has proven benefits in terms of academic performance and post- graduation earnings this would have a detrimental effect on their lives post-university and exacerbate the gap between them and students who could shoulder the cost of international mobility. The choice of destinations students would have to choose from is not likely to be significantly affected by Brexit as institutions in EU countries are still allowed to make bilateral agreements with institutions both within and outside the EU and many have been ensuring their relationships with existing British partners are shifted to this model in readiness for Brexit. This being said, once the funding disappears it may be hard to keep these exchanges going as they depend not only on British students being able to afford to go abroad, but also international students' ability to afford to come to the UK.

HEIs themselves would also be affected by a withdrawal from the Erasmus + programme. Whilst British universities are free to use the framework laid down by the Erasmus + scheme to administer their partnerships with other universities they would not be able to access any of the associated funds, nor officially take part in Erasmus + agreements with other institutions. This means they could either shift the funding burden on to students, with the socio-economic consequences that particular route of action threatens, try to find the funds themselves or lobby the UK government to put in place a domestic system much like the Swiss government did when they were suspended from the Erasmus programme in 2014. Per year this would equate to a spend of around 64 million Euros for the government or just over £200,000 per university.

As far as staff are concerned, the effects of losing access to Erasmus funding are comparable to those of students. Though no research has been done on the career benefits to staff members of undertaking international mobility it is logical to surmise that any reduction in funding would lead to a reduction in numbers of staff going abroad - for much the same reason it would with students - and as such reduced opportunities for knowledge exchange and the sharing of best practice.

In short, the future for this most prominent manifestation of cultural and social enrichment looks rocky, especially for those from the most disadvantaged backgrounds, be they staff or students. Much depends on the willingness of the UK government to recognise the benefits of these programmes and to fill the funding void left by any withdrawal from the Erasmus + scheme or for universities to do the same. Either way, no clear indication has been given from the government nor any individual institution that extra funding will be provided to support international mobility activities post-Brexit.

7.4 Brexit and the HE sector

Over the past few chapters a potential future for HE has begun to emerge, based on an analysis of the three core activities of modern universities. Overall it seems that people stand to be most affected by the post-Brexit future, students and staff in this context, with HEIs themselves also keenly feeling any impacts. Local communities and private enterprise also have a stake in the future of the HE sector.

The effects of the possible post-Brexit impacts discussed in these pages have tended to treat the stakeholders involved as separate entities, as this helps to more clearly illustrate possible effects of leaving the European Union upon any particular stakeholder group, however the real picture is much less clear-cut with each set of stakeholders affecting the others in much the same way that ripples on a lake interact and influence each other. Creating a coherent picture of a post-Brexit future is not an easy task and the potential impacts laid out in the chapters above do not pretend to be a perfect vision of the future, but rather a glimpse into what may be based on what has already come.

The context in which this study was written - during the demographic dip of 18 year- olds, in the era of the Office for Students playing hardball with universities in financial distress, the pending implementation of the Augur review recommendations and the appointment of a new Prime Minister - will have much more of an impact on the UK HE sector than Brexit will. That is not to say that the effects of Brexit should be ignored, but rather that they should be taken into consideration as part of a wider context and plans should be made accordingly to combat those areas in which Brexit exacerbates existing imbalances or creates new issues.

Over the three years it has taken to write this study a series of new events have happened and a wealth of new information has become available. Brexit-day has come and gone with the UK finding itself in a 'transition period' during which it remains for all intents and purposes an EU Member State without legally being classed as one. The country is now led by a Conservative majority government with a fondness for research spending, international students and HE in general and, most recently, finds itself in the midst of a global pandemic which has brought normal life to a standstill. These latter two factors will play a huge role in shaping post-Brexit Britain, not least because the global pandemic caused by Covid-19 has slowed negotiations between the UK and the EU on their future relationship to a crawl.

There is much still to be learnt about the effect of Brexit on the British HE sector, though it seems sensible to wait until after the future relationship between the UK and EU is settled and has played out for a few years before attempting to look at how the UK's departure from the European Union affected the HE sector. The effect of the global pandemic will be hard to unpick too, with travel restrictions in place and deep economic pain felt across the globe international student and staff numbers will suffer and universities with them. Any future studies looking to understand Brexit's impact will have a hard time doing so, indeed the effect of Brexit may be so subtle compared to that of Covid-19 that it may never be possible to truly be sure how much Brexit has affected the HE sector.

The eruption of a pandemic stands as testament to the inherent unpredictability of the future. The analyses laid out in the pages above never considered the possibility of the global spread of a new virus and whilst its existence will certainly impact the British HE sector the insights generated by this study may still prove useful. Only time will prove the ultimate judge.

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9. Appendix 1 - Surveys

Exchange Student Survey

This Survey is sponsored jointly by the University of Kent's School of Politics & International Relations & Unit for the Enhancement of Learning and Teaching

Research Project Overview
This survey forms part of a research project looking at the effect of recent political and social developments within the UK on the Higher Education Sector with the aim of creating a directional framework to allow British Universities to best navigate the challenges and opportunities presented by these developments. In order for this to be possible, the challenges facing the sector need to be identified and this survey forms part of this initial stage of research. Guidelines and Example Questions This survey should only be answered by those students who are on an exchange programme.

The questions asked in this survey will be either 'Yes' or 'No', multiple choice or operate on a scale of 1 - 5, for example;

Do you currently study at the University of Kent?

Yes No

How long have you been studying at Kent?

I'm a first year student
I'm a second year student I'm a final year student
I am a PGT/PGR student (1-2 years) I'm a PGR student (3-6 years)

There will also be the opportunity to leave any comments on the survey or subject of the questions at the end of the questionnaire.

1. Privacy Disclaimer
The information provided in this questionnaire will be used solely for the purpose of statistical analysis and will only be shared with relevant parties within the University of Kent (The School of Politics and International Relations, Unit for the Enhancement of Learning and Teaching and the International Teams (Partnerships & Recruitment)). The information provided in section 4 will not be shared with anyone other than the researcher (myself) and will only be used for the purpose of ensuring the validity of the responses received. You will not be individually identified at any point and the answers given will be analysed as a whole. Should you wish to receive a summary of the findings please indicate this in the 'Questions/Comments' section that follows. You have the right to withdraw from, and return to, the study at any point and can do so by emailing me personally at sdp31@kent.ac.uk

1. Do you agree to participate in the survey? * *
yes no

2. How would you describe your general opinion of the UK *
Positive Negative Neutral

3. How would you describe your general opinion of British Universities? *
Positive Negative Neutral

4. Before choosing to study in the UK, did you consider studying in another country? *
yes no

5. Which countries did you consider studying in? *
Australia USA
Canada
Another EU Country Not Applicable Other (please state)

6. What is the main reason you decided to study in the UK? *
Cost
Culture (e.g Cultural similarities, language, interest in British culture etc) Quality of Education / Teaching
Links with Family / Friends Other (please state)

7. Before you came to study in the UK did you have any doubts about studying in the UK? *

yes no

8. If Yes, could you explain what doubts you had?

9. Have you recently become more concerned about safety issues in the UK? *
yes no

10. If yes, when did the increase begin?
Within the past 3 months Within the past 6 months Within the past year Within the past 18 months 2 or more years ago Other

11. Are you particularly concerned with any of the following? *
No - Not at all No - Not really Unsure Yes - a little Yes - a lot Terrorism
Race related crimes / attacks Generally being made to feel unwelcome

12. Had you decided to do your semester/ year abroad in the UK before the Brexit vote? *
yes no

13. Did the Brexit vote make you think about not coming to the UK? *
yes no

14. Had you decided to do your semester/ year abroad in the UK before the recent terror attacks? *
yes no

15. Did the recent terror attacks make you think about not coming to the UK? *
yes no

16. Overall, If you had the chance to make the decision to study abroad again, would you still choose to study in the UK? *
yes no

17. If you answered 'no' to the previous question, can you explain why you would no longer choose to study in the UK and if you would choose to study in a different country?

18. Through which types of media is the UK/British Life/Politics/Society portrayed in your country (select all that apply) ? *
The News
Movies / Films
Documentaries / Factual Programmes
Fictional TV Shows
Reality TV Shows

19. How often would you say the UK is mentioned in your country's media? *
Daily
Every couple of days
Weekly
Every couple of weeks
Other/ Don't Know

20. In your opinion how is the UK generally portrayed in your country? *
In a positive way In a negative way In a neutral way

21. How would you say British Universities are viewed in your country? *
In a positive way In a negative way In a neutral way Don't Know

22. How often are the following topics mentioned in your country's media? *
Daily

Every couple of days
Weekly Every couple of weeks
Other
Don't know
Terror attacks in the UK
The recent UK election
Brexit

23. How much would you say your decision to study in the UK was influenced by the media you consume? *
Not at all A little
A lot
It was a major factor in my decision

24. How would you describe your general opinion of the European Union (EU) *
Positive Negative Neutral

25. How much do you feel a country needs to show the following values in order to be a member of the European Union? *
It is essential
It is very important
It is important
It is not very important
It is not necessary at all
Not Sure

Dignity
Freedom
Equality
Solidarity
Civil rights
Justice

26. How much do you feel the UK will perform in the following areas once it leaves the European Union? *
Better than now
The same as now
Worse than now
Unsure

Dignity
Freedom
Equality
Solidarity
Civil rights
Justice

27. What kind of effect do you believe leaving the European Union (EU) will have on the UK in general? *

A positive effect
A negative effect Neutral
Don't Know

28. Which of the following best describes you? *

I am a current Erasmus Student
I have just finished my Erasmus Year/Semester I am a non-Erasmus exchange student
I have just finished my non-Erasmus exchange programme I am not an exchange student

29. What country are you from?

30. Any comments?

International Student Survey

This Survey is sponsored jointly by the University of Kent's School of Politics & International Relations & Unit for the Enhancement of Learning and Teaching

Research Project Overview

This survey forms part of a research project looking at the effect of recent political and social developments within the UK on the Higher Education Sector with the aim of creating a directional framework to allow British Universities to best navigate the challenges and opportunities presented by these developments. In order for this to be possible, the challenges facing the sector need to be identified and this survey forms part of this initial stage of research.

Guidelines and Example Questions

This survey should only be answered by those students who are classed as full-time and non-EU.

The questions asked in this survey will be either 'Yes' or 'No', multiple choice or operate on a scale of 1 - 5, for example;

Do you currently study at the University of Kent? Yes No

How long have you been studying at Kent?
I'm a first year student
I'm a second year student
I'm a final year student
I am a PGT/PGR student (1-2 years)
I'm a PGR student (3-6 years)

There will also be the opportunity to leave any comments on the survey or subject of the questions at the end of the questionnaire.

1. Privacy Disclaimer
The information provided in this questionnaire will be used solely for the purpose of statistical analysis and will only be shared with relevant parties within the University of Kent (The School of Politics and International Relations, Unit for the Enhancement of Learning and Teaching and the International Recruitment Team). The information provided in section 4 will not be shared with anyone other than the researcher (myself) and will only be used for the purpose of ensuring the validity of the responses received. You will not be individually identified at any point and the answers given will be analysed as a whole. Should you wish to receive a summary of the findings please indicate this in the 'Questions/Comments' section that follows. You have the right to withdraw from, and return to, the study at any point and can do so my emailing me

personally at sdp30@kent.ac.uk.

Do you agree to participate in the survey? *
yes no

2. How would you describe your general opinion of the UK *
Positive Negative Neutral

3. How would you describe your general opinion of British Universities? *
Positive Negative Neutral

4. Before choosing to study in the UK, did you consider studying in another country? *
yes no

5. Which countries did you consider studying in?
Australia USA
Canada
Another EU Country
Not Applicable
Other (please state)

6. What is the main reason you decided to study in the UK? *
Cost
Culture (e.g Cultural similarities, language, interest in British culture etc)
Quality of Education / Teaching
Links with Family / Friends Other (please state)

7. How would you describe your general opinion of the European Union (EU) *
Positive
Negative
Neutral / No Opinion

8. How much do you feel a country needs to show the following values in order to be a member of the European Union? *
It is Essential
It is very important
It is important
It is not very important
It is not necessary at all
Don't Know

Dignity
Freedom
Equality
Solidarity

Civil Rights
Justice

9. How much do you feel the UK will perform in the following areas once it leaves the European Union? *
Better than now
The same as now
Worse than now
Unsure

Dignity
Freedom
Solidarity
Civil Rights
Justice

10. What kind of effect do you believe leaving the European Union (EU) will have on the UK in general? *
A positive effect
A negative effect
Neutral
Don't Know

11. Before you came to study in the UK did you have any doubts about studying in the UK? *
yes no

12. Have you recently become more concerned about safety issues in the UK? *
yes no

13. If yes, when did the increase begin?
Within the past 3 months
Within the past 6 months
Within the past year
Within the past 18 months
2 or more years ago
Other

14. Are you particularly concerned with any of the following? *
No - Not at all
No - Not really
Unsure
Yes - a little
Yes - a lot

Terrorism
Race related crimes / attacks
Generally being made to feel unwelcome

15. If you had the chance to make the decision to study abroad again, would you still choose to study in the UK? *
yes no

16. If you answered 'no' to the previous question, can you explain why you would no longer choose to study in the UK and if you would choose to study in a different country?

17. Through which types of media is the UK/British Life/Politics/Society portrayed in your country (select all that apply) ? *
The News Movies / Films
Documentaries / Factual Programmes
Fictional TV Shows
Reality TV Shows

18. How often would you say the UK is mentioned in your country's media? *
Daily
Every couple of days
Weekly
Every couple of weeks
Other/ Don't Know

19. In your opinion how is the UK generally portrayed in your country? *
In a positive way
In a negative way
In a neutral way

20. How would you say British Universities are viewed in your country? *
In a positive way
In a negative way
In a neutral way

21. How often are the following topics mentioned in your country's media? *
Daily
Every couple of days
Weekly
Every couple of weeks
Other
Don't know

Terror attacks in the UK
The recent UK election
Brexit

22. How much would you say your decision to study in the UK was influenced by the media you consume? *
Not at all
A little
A lot
It was a major factor in my decision

23. Which of the following best describes you? *
I am a full time, overseas fee paying student
I am a part time, overseas fee paying student
I am a full time Home/EU fee paying student
I am a part time Home/EU fee paying student
Other

24. What is your current study level? *
Year 1 Undergraduate
Year 2 Undergraduate
Final Year Undergraduate
Taught Masters Student
Research Masters Student
PhD Student
Currently on a Year Abroad/Industrial Placement Other

25. What was your country of residence before coming to the UK?

26. Any comments?

10. Appendix 2 – List of Figures and their titles