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Catalysts in the West Midlands 2009–2015

Classic Knowledge Transfer Partnership
Programme (cKTP) & Knowledge Exchange and
Enterprise Network (KEEN) programme

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Foreword



The West Midlands does have important assets. There are considerable universities with an international reputation – Aston University, Birmingham City University, Coventry University, Staffordshire University, University of Wolverhampton and University of Worcester – hotspots of inward investment and some resilient and innovative multinationals such as GKN, Jaguar Land Rover, Carillion, Specialist Computer Holdings, IMI, Mitchells and Butlers and Titan Europe. These are potential building blocks for economic advance.

The West Midlands economy is relatively larger in manufacturing and public services than the national average, but smaller in the contribution from knowledge intensive business services and primary industries. The good news is also that despite pockets of high unemployment, falls in unemployment in the West Midlands have recently been at record rates, combined with an upturn in the private investment in manufacturing and transport sectors.

However, the West Midlands faces several regional challenges, with an employment rate at almost ten per cent below the UK average. The region has one of the country's lowest proportions of residents with high-level qualifications combined with one of the highest proportions of residents with no formal qualifications. There is only a modest business start-up to population ratio (less than half of that of London's) and the GVA (gross value added) per worker is among the lowest in the country. Clusters of economic activity have been thinning out.

To regenerate the engine of the innovative hotspots in the region requires 'thick' and iterative relationships between the top universities and top businesses in the region. The proposed collective investment vehicle must be fit-for-purpose for the region and sufficiently smart to establish new growth and/or hold on to the existing firms. Local SMEs need a smart network accessing markets, supplier networks, financial and other innovative resources, plus a pool of local skills animated by real ambition.

The under-utilised universities can integrate and act as growth catalysts supporting local development, as well as regional state agencies that are more enterprise-focused. This was the ambition of two interconnected regional development initiatives – the 'classic' Knowledge Transfer Partnership (cKTP) and Knowledge Exchange and Enterprise Network (KEEN) – which catalysed businesses in the West Midlands between 2009 and 2015.

In this report on 'Catalysts in the West Midlands 2009–2015' we report how adopting a business-centric approach and 'joint action' can vigorously promote and deliver business innovation and co-investment, skill development and job creation. This meant working with local graduates, and pulling in development funds and academics from award-winning local universities.

There is still scope for such programmes to do more to encourage start-ups and scale-ups, or boost an industry or technology, or spark the universities to become more entrepreneurial.

The imperative now is to implement a strategy that takes advantage of the enormous opportunities, animating the resources the programmes have generated over the last six years. How can we now better take advantage of emerging technologies in those areas likely to bring the greatest dividends in growth and jobs in the region? It is time to decide on the long-term ambition for the West Midlands.



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EXECUTIVE SUMMARY

Two connected regional development initiatives – the ‘classic’ Knowledge Transfer Partnership (cKTP) and Knowledge Exchange and Enterprise Network (KEEN) – catalysed businesses in the West Midlands to improve their competitiveness, innovative capability, productivity and performance through the understanding, sharing and use of new knowledge, technology and skills. The core aim was to incite smart, sustainable and inclusive growth in the West Midlands region.

The cKTP programme operated during the period 2009–2013 while KEEN operated during the period 2012–2015. Both were funded by the European Regional Development Fund (ERDF) and cKTP was also co-funded by the Technology Strategy Board (now Innovate UK). Participating companies were to co-fund the initiative by around 25% in the cKTP context and 50% in the KEEN context, depending on their individual size.

In the spirit of a people-oriented approach to building the ecosystem, the programmes were implemented by developing a three-way knowledge transfer partnership between the following groups:

- Private or public business enterprises including third sector and public sector organisations. In this report we refer to them as Businesses.
- Postgraduates, university graduates, or individuals qualified to at least National Vocational Qualification (NVQ) Level 4 or equivalent, employed by an academic institution primarily to undertake a cKTP or KEEN programme. In this report we refer to them as Graduates.
- University academics at the universities in this region. In this report we refer to them as Academics.

In this context the cKTP and KEEN initiatives worked as graduate recruitment programmes designed to give bright and ambitious graduates and individual affiliates a platform to launch their careers, while gaining sought-after experience.

In terms of practical implementation, the programmes involved Aston University, Birmingham City University, Coventry University, Staffordshire University, University of Wolverhampton and University of Worcester. These six universities supported 166 businesses across 14 industry sectors across the two programmes which involved almost 200 graduates.

Both programmes worked by putting a recent graduate into a business to work on a strategic growth project, with ongoing support from experienced university experts. Companies would benefit from funding, allowing them to recruit talented graduates and access cutting edge

university knowledge throughout the duration of the project. There was no such thing as a typical project, but they all had their own characteristics. cKTP projects were normally one to three years, while KEEN projects were shorter, from 6 to 24 months.

The selection criteria for the type of project being approved are slightly different for both types of programme. Where cKTP focused more on technological and innovation based projects with any type of business, KEEN also included pre-innovation projects with SMEs and micro businesses so the focus shifted to high-level research-intensive technologies.

Knowledge Exchange and Enterprise Network (KEEN)	'classic' Knowledge Transfer Partnership programme (cKTP)
<ul style="list-style-type: none"> • Total investment by funding agency: £2,384,541 • Project's average length: 14 months • Number of projects running: 125 • KEEN's management fees: £1,625,000 • For every £1 investment made by the funding agency, companies invested around £0.98 for the KEEN project on average. 	<ul style="list-style-type: none"> • Total investment by funding agencies: £4,483,245 • Project's average length: 24 months • Number of projects running: 57 • cKTP's management fees: £746,817 • For every £1 investment made by the funding agencies, companies invested around £0.14 for the cKTP project on average.

EVALUATION

Big Innovation Centre has been commissioned by University of Wolverhampton, which led the key regional programmes, to independently assess the programmes' achievements and lessons learnt. This evaluation report takes into account economic impact as well as beneficiary and partner feedback and experiences, and provides evidence based suggestions on how the programme can continue to add value in the future.

Evaluation of the cKTP and KEEN programmes has been conducted against the national KTP programme targets. The programmes' performance and impact is also measured in terms of benefits related to research, knowledge, innovation, markets, finance, and strategic networking. The method was a questionnaire and survey targeted at all participating partners (businesses, academics and graduates), plus we also conducted 34 in-depth interviews with KEEN participants across the three groups.

We find that both cKTP and KEEN made a difference in the West Midlands in terms of economic contribution, job creation, increased usefulness of academic knowledge, and strong

interactions between local universities and businesses.

BUSINESSES

Typically, businesses reported that the dedicated knowledge transfer partnership projects enabled an opportunity for business leaders to increase their knowledge, skills and strategies and improve their innovative capabilities especially. This included a range of areas, from R&D to operations, business processes and market facing customer insights. In addition, working alongside academics in the KEEN programme offered businesses the opportunity to expand their network and continue to benefit from getting input from the academics beyond the programme. In a similar vein, cKTP found that the programme helped them to form valuable relationships with other local businesses, particularly through events and enterprise activities organised by universities. For some businesses it also became beneficial, from a market competition point of view, to signal a strong university link to both competitors and clients or consumers of their products and services. Clearly, for businesses involved in such knowledge transfer partnerships financial benefit was an important factor, but was not regarded as the most crucial benefit. In today's competitive landscape, businesses try to balance between short-term financial lifts with bigger long-term benefits.

Knowledge Exchange and Enterprise Network (KEEN)	'classic' Knowledge Transfer Partnership programme (cKTP)
<ul style="list-style-type: none"> • Average increase in sales in the last year of project attributed to KEEN is £261,294 • Average increase in profit (pre-tax) in the last year of project attributed to KEEN is £25,761 <p>For every £1 investment in the KEEN (including management fees):</p> <ul style="list-style-type: none"> • £4.79 increase in sales in the final year of the project • £0.47 increase in profit in the final year of the project 	<ul style="list-style-type: none"> • Average increase in sales in the last year of project attributed to cKTP is £261,736 • Average increase in profit (pre-tax) in the last year of project attributed to cKTP is £40,333 <p>For every £1 investment in the cKTP (including management fees)</p> <ul style="list-style-type: none"> • £2.84 increase in sales in the final year of the project • £0.43 increase in profit in the final year of the project

ACADEMICS

Academics reported how KEEN and cKTP have been key catalysts in building linkages with business and enhancing their university profession. The exposure directly to business challenges increased the impact of their research and knowledge, and built more informed academic teaching and research programmes as a result. In particular, KEEN and cKTP enabled them to develop industry knowledge with respect to business operations, competition and markets. Their theoretical research became refined through direct engagement with business challenges, and as a result academics became better at communicating academic

knowledge using real-life examples in teaching. KEEN and cKTP also gave academics an opportunity to build business networks, allowing them to create impact from their research and develop their own professional network outside the university lasting beyond the project.

Knowledge Exchange and Enterprise Network (KEEN)	'classic' Knowledge Transfer Partnership programme (cKTP)
<ul style="list-style-type: none"> • 90% of academics involved with KEEN report increase in knowledge and skills • 78% of academics involved with KEEN report benefits to strategic networking • 70% of academics involved with KEEN report increase in willingness to participate in commercial projects 	<ul style="list-style-type: none"> • 95% of academics involved with cKTP report benefits to teaching • 82% of academics involved with cKTP report benefits to research • cKTP helps academics build strong relationships with local businesses with 68% of academics reporting a potential collaboration beyond the partnership project

GRADUATES

Both KEEN and cKTP opened up employment opportunities and attracted talent into the region. It also attracted mature graduates as the programme provided a platform to change their career path.

Graduates developed higher qualifications, project management skills, and increased confidence levels. It provided them opportunities for building personal networks across academia and industry. The biggest skills achievements among KEEN graduates were in three areas: product development and design, R&D, and sales and marketing. The next big areas were skills achievements in ICT, business operations, as well as manufacturing processes and operations.

Knowledge Exchange and Enterprise Network (KEEN)	'classic' Knowledge Transfer Partnership programme (cKTP)
<ul style="list-style-type: none"> • 90% of graduates involved with KEEN report receiving or will receive a job offer from the KEEN company • gained an average salary of £22,058 after completing KEEN 	<ul style="list-style-type: none"> • 73% of graduates involved with cKTP report receiving a job offer from the cKTP company • 78% of graduates involved with cKTP were recruited by companies based in the West Midlands

TRANSFER OF THE PROGRAMME TO OTHER REGIONS

As we can see from the above co-investment from businesses and financial returns to the region including job creation – plus a range of other benefits to businesses, universities and graduates – there are many good reasons to adopt the programme again and also to transfer the model to other regions. In such circumstances there are lessons learnt which can improve the programme further in a range of areas:

- Improve the administrative process: Make it less bureaucratic. *[Action: funding agency and Knowledge Transfer Manager]*
- Reduce the time it takes for businesses to hire a graduate with the scheme. *[Action: funding agency and Knowledge Transfer Manager]*
- Provide a support mechanism and training provision beyond graduates: Support to the business individuals taking part, particularly for small and micro businesses. *[Action: business community, growth hubs, and senior academics]*. Support from senior academics to mentor junior academics in order to have a bigger pool of academics doing knowledge transfer was perceived to be useful. *[Action: senior academics]*. Academics need to improve their communication skills with businesses. Universities must become entrepreneurial universities adopting better incentive structures to work with businesses. *[Action: University Vice Chancellors]*
- Introduce post project support: Continue support until the changes the project has catalysed have been implemented. *[Action: Academics and businesses leaders]*
- Improve the selection criterion to focus more on businesses that need help to grow: Small businesses found it challenging to put aside staff time to participate in the programme, so could not reap the full benefits. *[Action: funding agency]*
- Improve awareness among graduates: Better advertisement of the scheme, as well as use the opportunity to focus on final year students who could be interested. *[Action: funding agency and academics]*
- Collaboration requires a different mindset, as too much of the knowledge transfer partnership deal rests on the graduate: The graduate is not the only knowledge transfer element determining success, but all three parties (business, university, graduate) need to collaborate. *[Action: Knowledge Transfer Manager plus all people involved, including buy-in from company CEOs and University Vice Chancellors]*

OVERALL SUCCESS

For all parties – businesses, academics and graduates – involved in the initiatives, between 80% and 90% perceived the knowledge transfer programmes to be a success, and most would be likely to participate in such initiatives again.

Evaluation Approach

Evaluation of the cKTP and KEEN programmes is against the national KTP programme targets. The programmes' performance and impact is also measured in terms of benefits related to research, knowledge, innovation, markets, finance, and strategic networking.

We assess the programmes' achievements and lessons learnt, taking into account stakeholder beneficiaries and participant feedback. This allows us to provide suggestions on how similar types of programmes could be implemented in other regions.

QUESTIONNAIRE AND SURVEY

Three types of questionnaires on the current and future impact of cKTP and KEEN were constructed, each targeting a different stakeholder: academic supervisor, business supervisor, or graduate. Please see **Appendix 1** for a full list of the data (variables and measurement) which was collected through the questionnaires.

Due to the different programme objectives and also timespan of both programmes, we collated the datasets for this research using different approaches.

- Approach for Classic Knowledge Transfer Partnership Programme (cKTP): Information was collected through content analysis from confidential final reports produced by each of the stakeholders involved in each project. We used the information to populate the three types of questionnaires with answers. This includes 45 cKTP projects out of 57 in total.
- Approach for Knowledge Exchange and Enterprise Network (KEEN): Again, we targeted the participant academic and business supervisors and graduate students. Using the three types of questionnaires, we surveyed 120 KEEN projects, with 32 responses from the academics (response rate 26%), 42 responses from businesses (response rate 34%) and 41 responses from the graduates (response rate 33%).

INTERVIEWS

We also conducted 34 in-depth interviews with KEEN participants, comprising 8 academics, 13 businesses and 10 graduates, and 3 interviews with the Knowledge Transfer Manager (person who manages the projects within the universities).

EVIDENCE ANALYSIS AND VALIDATION EVENT

Data and information collected through the approaches above were analysed independently and separately across both programmes. The results were later compared.

A validation event was held at the University of Wolverhampton on 7 September 2015. Validators included participants from the knowledge transfer project consortiums, including academics, businesses, knowledge transfer managers, graduates, plus funding agencies.

1. Classic Knowledge Transfer Partnership Programme (cKTP)

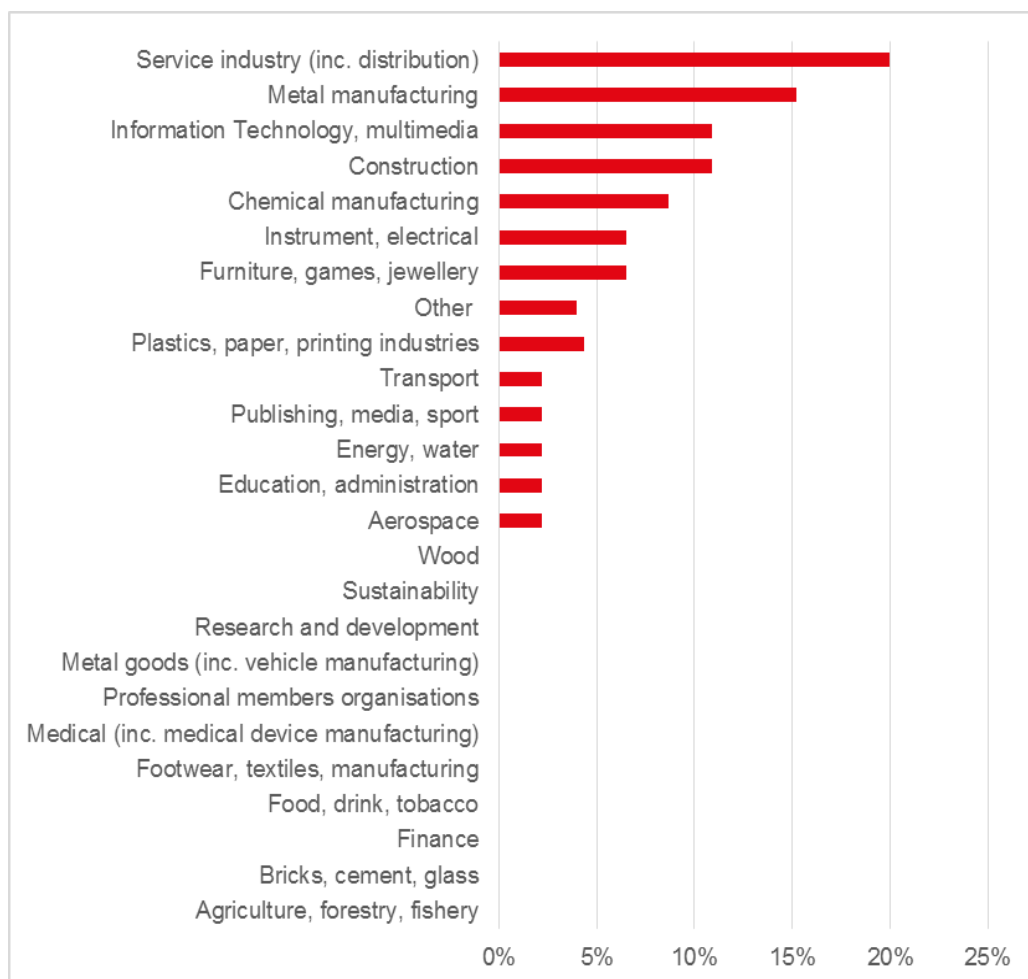
1.1 Business impacts

1.1.1 Characteristics of businesses involved

cKTP across the West Midlands

Businesses involved with cKTP were from a diverse group of sectors, although businesses trading in the Service, Metal Manufacturing and ICT sectors make up the largest proportion of active cKTPs in the region, namely about 45% (see Figure 1.1). This is similar to the reported KTP national figure in 2013 and 2014 (Innovate UK, 2014). Furthermore, the distribution of partnerships by sector aligns with the regional priorities of the West Midlands, especially with respect to Metal Manufacturing, Information Technology, Multimedia and Construction.

Figure 1.1. Sector distribution (100% in total) of businesses involved in the programme

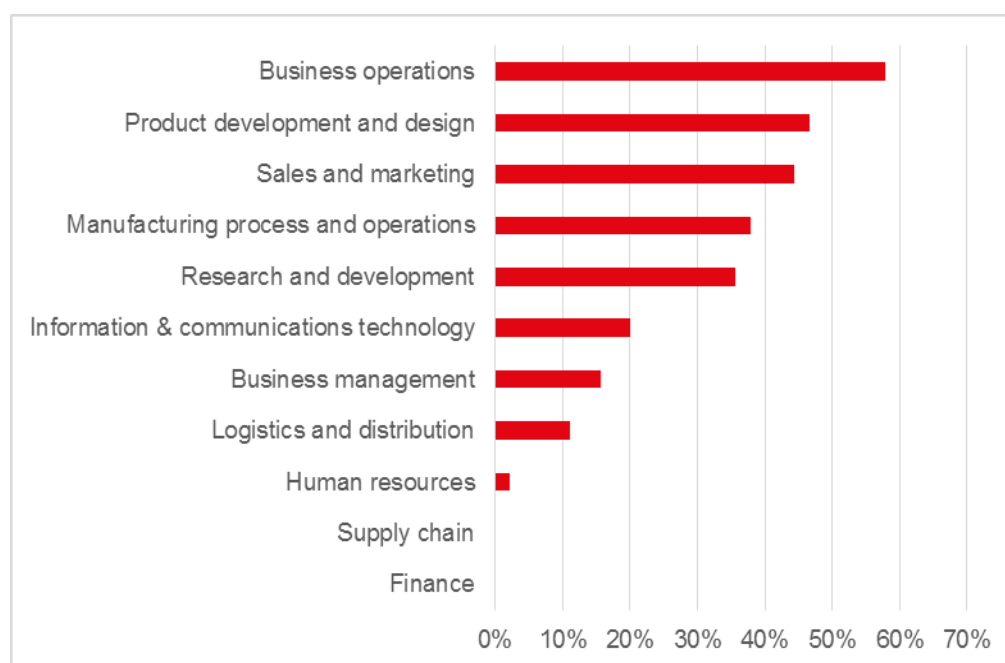


The importance of business process innovation

Most projects in the cKTP aimed to help businesses with their business process innovation, where the type of cKTP projects undertaken were mostly based in business operations departments (more than 50%), product development and design (more than 45%) and also sales and marketing (45%). Figure 1.2 below outlines the types of business departments that the cKTP project has been associated with. In interviews, businesses emphasised that cKTP projects enabled them to increase their innovative capability, which helped their competitiveness, and also allowed them to increase their operational effectiveness. For example, businesses were supported by the academics and the graduates to develop more efficient systems with clear rules and methods that enabled them to grow further.

Figure 1.2. Business department at which the cKTP was based

Please note that the distribution of business departments in the figure does not add up to 100% as some of the projects involved more than one business area.



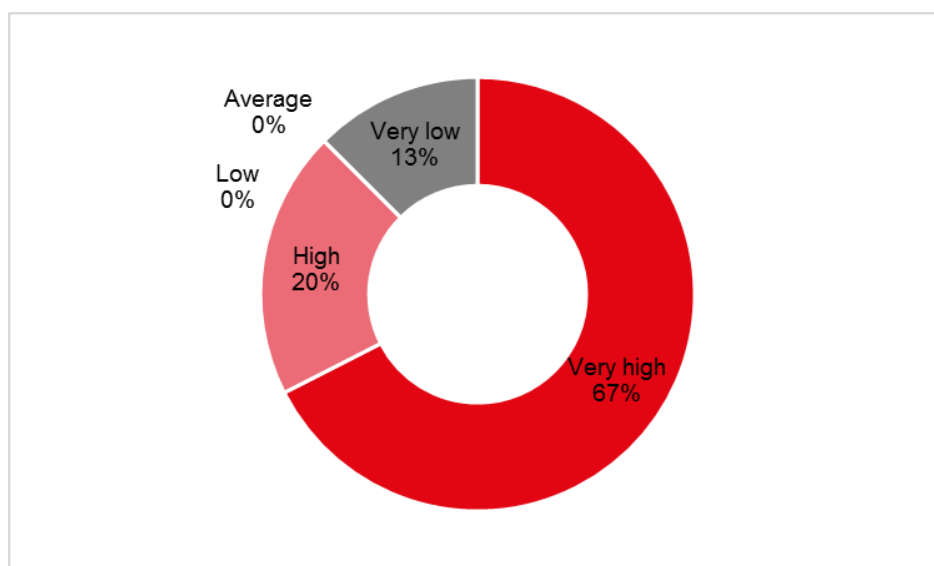
1.1.2 Overall success

The cKTP programme has been recognised as rewarding by the businesses. 96% of businesses perceived the programme to have been successful; 66% of them acknowledged it to have been very successful. (See Figure 1.4) More than 80% of businesses are likely to engage in a cKTP intervention in the future.

Figure 1.3. Overall success of the programme (Business perspective)



Figure 1.4. Likelihood of businesses engaging in a cKTP intervention in the future



1.1.3 Increase in business performance and regional contribution

How has cKTP helped businesses grow?

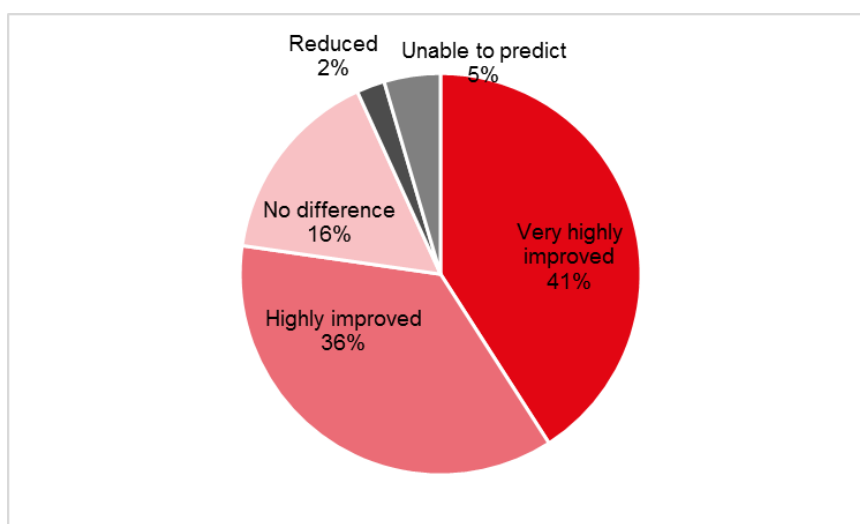
Between 2009 and 2014, for every £1 invested in cKTP projects:

- Each company generated on average an increase of £3.32 in sales during the final year of the cKTP project, with an anticipated increase in sales after 3 years of £14.
- Each company generated on average an increase of £0.51 (pre-tax) in the final year of the cKTP project, with an anticipated increase in profit after 3 years of £17.70.
- Each company generated on average an increase of £0.59 in exports in the final year of the cKTP project, with a £2.84 increase in exports predicted after 3 years.

Thus, the region benefited through the programme, not only from the financial contribution, but also in relation to job creation and level of further investment being made.

It was reported that 77% of businesses perceived that the results they achieved through participation in cKTP would play a significant part in improving the future performance of their business. 41% stated their performance to be very highly improved and 36% stated it to be highly improved. This is consistent (although at a higher value of 90%) with the Innovate UK 2014 report 'Knowledge Transfer Partnerships: Achievements and outcomes 2013 to 2014'. There are only 2% that have a reduced performance.

Figure 1.5 State of financial performance after cKTP involvement



Knowledge transfer activities took off due to the co-investments made by Technology Strategy Board (now Innovate UK) and the European Regional Development Fund (ERDF) with a total grant contribution of £4,483,245 (excluding the management fees) for the cKTP. There are 57 companies in total involved in the programme and they invested around £746,817 in total. On average, the investment made to each business by both funding agencies was £78,653. This shows that for every £1 investment made by the funding agencies, companies invested around £0.14 in the cKTP project. The average length for each cKTP is 24 months and the management fees for each project are £13,000. Overall the businesses benefit considerably

**For every £1 investment to the cKTP
(excluding management fees)**

£3.33 increase in sales in the final year
of the project

£0.51 increase in profit in the final year
of the project

£0.59 increase in export revenue in the
final year of the project

**For every £1 investment to the cKTP
(including management fees)**

£2.84 increase in sales in the final year
of the project

£0.43 increase in profit in the final year
of the project

£0.50 increase in export in the final year
of the project

from the investment and generally continuous growth in their sales, exports and profits can be seen across the duration of the programme. The businesses anticipate an average increase of around £1.1 million in sales three years after the cKTP project has ended.

For each £1 investment made by the funding agencies, each business has seen an increase in sales of £3.33 in the final year of the cKTP project, and on average, a business anticipates an increase in sales of £14 after 3 years. For every £1 investment, each business has also seen an increase in profit of £0.51, and on average, a business anticipates an increase in profit of £17.70 3 years after the project has ended. For every £1 investment, each business has seen an increase in export revenue of £0.59 in the final year of the project, and anticipates an increase in export revenue of £2.84 after 3 years.

1.1.4 A full collection of benefits

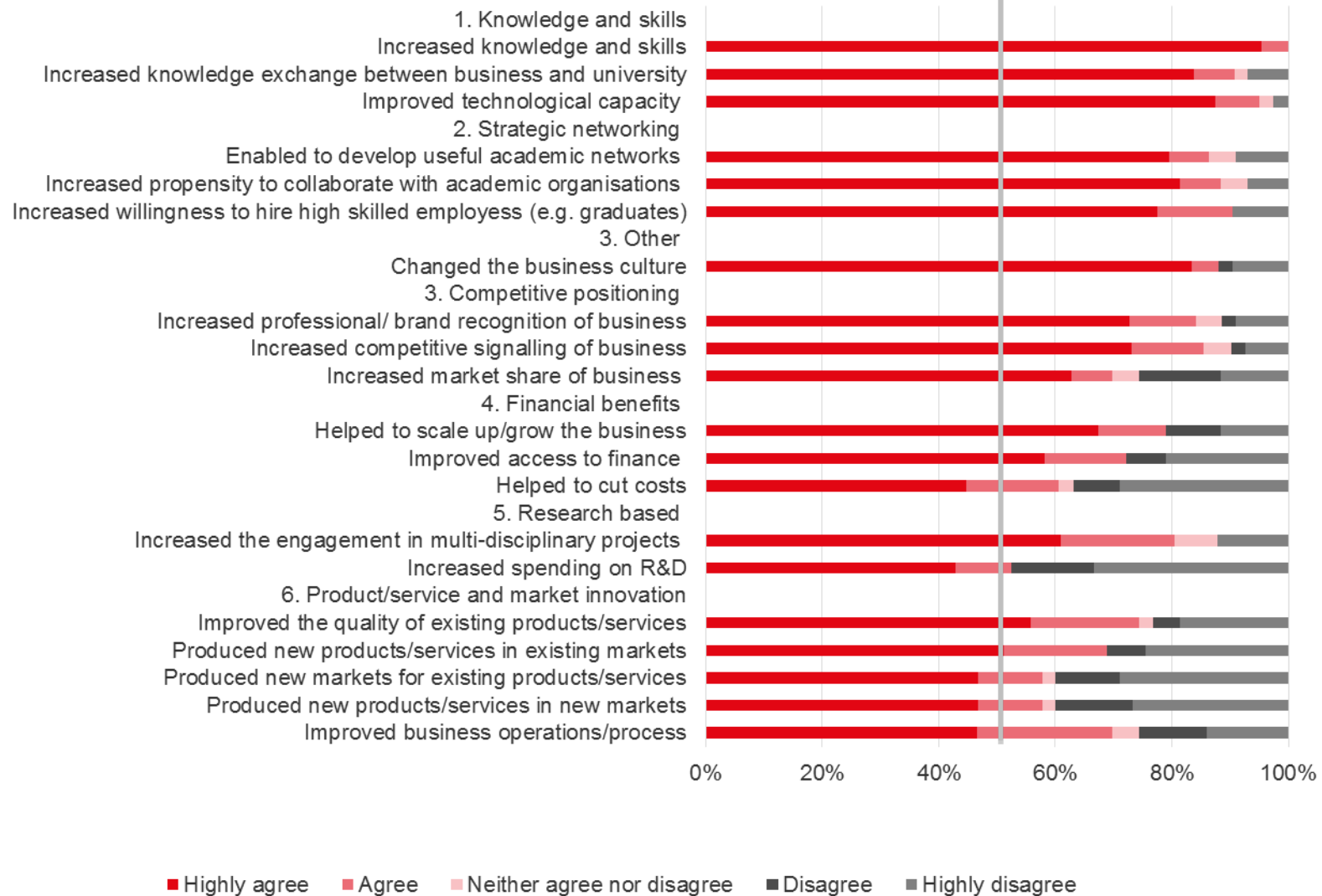
cKTP has generated a range of benefits including knowledge and skills, strategic networking, competitive positioning, financial, cultural change, research based, as well as product/service and market innovation. cKTP is distinctive in emphasising the need for partnerships that are led by business needs. Figure 1.6 summarises the benefits the businesses gain through engaging in the cKTP and forms the basis for the subsequent discussion in this section. Businesses benefit in particular from knowledge and skills (more than 80% of them), strategic networking (more than 70%) and competitive positioning (more than 60%). On average, around 50% of businesses found financial benefits to be important, as well as research based benefits and product/service and market innovation.

Quick win and long-term impact

“During the Knowledge Transfer Partnership we were able to turn around some 'quick win' projects that generated immediate sales. However the majority of the financial benefit from the partnership and the processes and products developed during the partnership is expected in our sales turnover during the next three years.”

Business involved with cKTP

Figure 1.6 Summary of the benefits gained by the businesses through engaging in the cKTP



Achieving financial benefit is important but it was not the top priority

On average around 50% of businesses experience financial benefits through the engagement. The financial performance has been highlighted earlier in Section 1.1.3. Figure 1.6 outlines a range of benefits the businesses engaged in cKTP gain. It shows that although finance is an important factor, it is not the only benefit accrued by the businesses. For example, less than 45% of businesses benefited through cost saving. This also highlights that businesses engage in the cKTP programme not merely to solve their operational problems through cost cutting measures, but also to make changes at the strategic level through strategically and competitively positioning themselves in the market. Hence, in today's competitive landscape, businesses try to strike a balance between smaller quick-win initiatives and activities with greater long-term impact, and cKTP allows that to happen.

Increase capabilities and self-awareness

"For the time being we have cut cost of transport by £312k because of the system. It's a major saving to us."

Business involved with cKTP

Improved technological capacity

"The company has moved into a more technically competent position for product and process development as a result of the KTP project. The technology now being employed is state-of-the-art; which ensures innovation is fostered and hence competitive advantage is maximised. The new capabilities we have could also open up not yet explored markets in areas that we have never even considered operating in."

Business involved with cKTP

Improved Knowledge and Skills

On average, 80% of businesses value the cKTP engagement as it increases their own knowledge and skills, provides them with avenues to exchange knowledge with a university and also improves their technological capacity. This also highlights the importance of knowledge exchange through the collaboration process, which helps increase the capability and competency of employees in the businesses.

Businesses found that the engagement process is beneficial in enhancing their competitive advantage, and also increasing their self-awareness. They also felt more confident to further develop their own capabilities after the cKTP engagement. For example, there is one instance whereby businesses were able to use state-of-the-art technology after engaging with the cKTP, which enabled them to challenge competitors and enter a new market. The training programme during the cKTP engagement had helped them to achieve the business growth plan.

Useful contacts and valuable relationships formed

On average, around 80% of businesses see cKTP as helping to build their network and develop a close relationship with the University, and other local industries. cKTP provides an avenue for businesses to establish further links with academic learning, which in turn helps them to build stronger relationships with local businesses, particularly through events and enterprise activities organised by universities.

Businesses see cKTP as an avenue to collaborate closely with each other, build trust and commitment, and to focus on the important tasks and challenges. Moreover, having useful contacts with academics has allowed useful relationships to be developed across both parties.

New market share

"As previously noted, [the company] is aggressively seeking opportunities in new markets / new products / applications. Our [product] is currently being used in the energy industry (cable manufacture). New applications in construction, agriculture, etc are being introduced. The KTP has been a major contributor to this effort."

Business involved with cKTP

Useful contacts with academics

"Working with a company which is pro-active in marketing the relationship formed to other local businesses and subsequently encouraging more engagement between the University and industry. KTP has allowed for further close relationships to develop between the University, this company and other local industries - another key driver in the University's strategic development plans. All parties have gained trust and commitment from each other, enabling a strong focus on the important tasks and challenges. "

Business involved with CKTP

Signalling: It is good to be associated with universities

On average, around 70% of businesses value cKTP as it helps them to improve their position in the market and reinforce their knowledge. For example, several businesses actively refer to having taken part in the cKTP in order to signal their innovativeness and connections.

Increased brand and professional recognition and signalling

"Prior to the KTP on average we signed up 5-6 new support contracts a year. Following the KTP we are now more confident in our ability to target and win new business and are starting to see a slow but steady increase in the number of businesses we are speaking with, which I am sure will result in higher sales. Our aim is to win 36 customers over the next 3 years, which based on our average customer spend will contribute an increase of approximately £306,000 in sales turnover over the next 3 years."

Business involved in CKTP

This has also been used to support businesses' branding effectiveness, especially in trying to protect their own market share.

The 'company-centric' reputation building exercise (Ettenson & Knowles, 2008) serves as a signal for continued excellence. Businesses also value cKTP as it helps them to signal their research capabilities to others, and also build respect from others through associating themselves with a university. Businesses see that having a form of collaboration with a university provides them with recognition and helps them to be perceived as an organisation that values research.

cKTP facilitates organisational change

More than 80% of businesses believe that the cKTP manages to influence and change their company's culture. The partnership clearly has managed to embed a cultural change, particularly since the graduate is able to work alongside other employees to solve a challenge. Businesses claim that embedding a culture of learning new things and sharing knowledge across the business is not an easy task. So having the graduate provide an avenue for face to face interaction brings numerous benefits in terms of building personal relationships and trust. Not only that, the legacy of change enables companies to focus on the strategic level, and not simply on operations and production. Having a dedicated individual driving the change project helps managers to focus on other important aspects of their business.

Culture of learning

"The partnership has embedded a culture of learning and sharing within [the company]. So much so that we have added this to the core values that [the company] is founded on and it has its own space in our company credentials... At [the company], we openly encourage each other to share and explore personal interests. We learn from one another and grow together as an agency."

Business involved in cKTP

Legacy

"Prior to the project the company was very much led by operations and production. During the project the value of sales and marketing has been learnt and the company is now very much market led. It is believed that this legacy will remain and will help ensure the continued success of the company as it develops new commercial initiatives... The marketing approach acquired will be paramount as these targets have to be delivered in a mature established market and without this new approach the company is unlikely to succeed."

Business involved in cKTP

cKTP as a new source of input for R&D

Around 52% of businesses derived significant benefits from the engagement through research. The knowledge generated through the partnership is seen as an input to a business's own R&D, which builds their credibility and competitiveness. It also showcases a business's level of innovativeness. Other organisations (such as banks and venture capitalists) may prefer to invest in and work with businesses that are able to demonstrate innovative output through investment in research (Engel and Keilbach, 2007).

Expand R&D activities

"We will certainly be engaging in R&D activities over the coming months/years. These will focus on supporting new emerging technologies from our cloud based services. I would estimate that at least £100,000 will be invested in this area in the next 12 months."

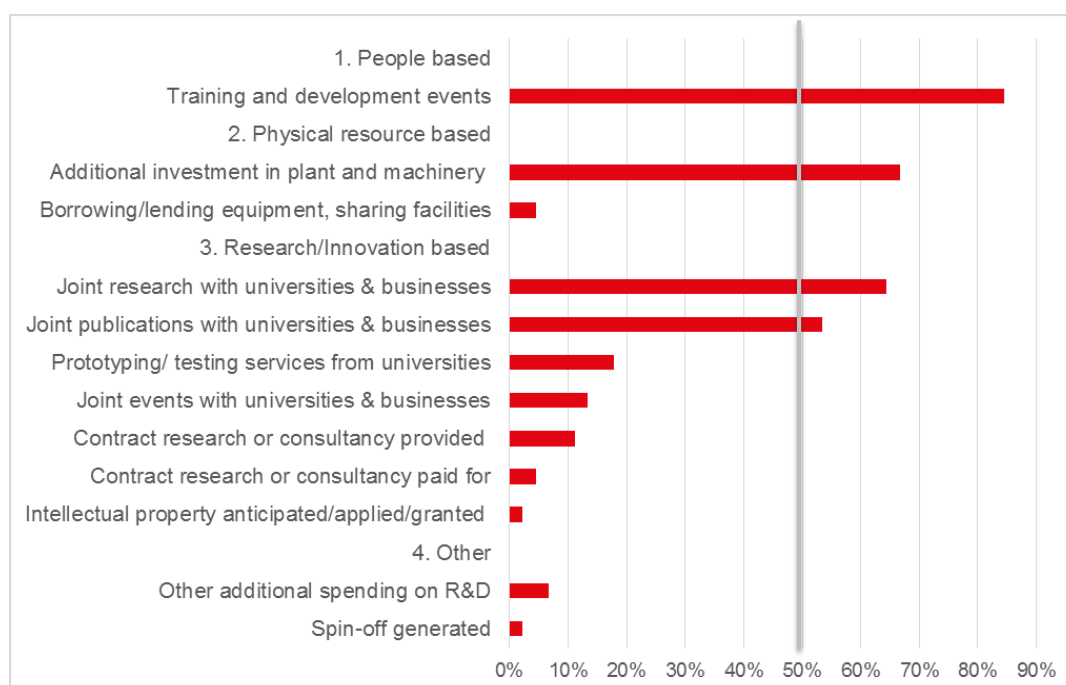
Business involved in cKTP

1.1.5 Future value

cKTP not only generated value during the project lifetime, but also resulted in benefits beyond the end of the project. This value was mainly in terms of training and development, R&D investment and research collaborations with universities. This section highlights the future value generated through business involvement in cKTP.

Figure 1.7 Future value for business arising from cKTP

Please note that distribution of future value illustrated in the figure below does not add up to



100% as some of the businesses benefited in multiple ways.

Around 85% of businesses feel that training and development events, generated through the cKTP, created the most value beyond the project. This has to do with developing new competences and gaining new experience, and with accessing new sources of knowledge that were previously out of reach.

Businesses value having help with long-term issues including access to highly skilled research teams, the possibility of shaping the knowledge produced within academia, the identification of new R&D projects, the selection or direction of firms' research projects, technology licences and patents, and access to university research and discoveries. Moreover, 60% of businesses continue to collaborate with the university, not only for collaborative research, but also through joint publications. For small businesses, this is important for growth.

Physical resource investment

"Research and development has taken place in identifying and producing prototype [products] for X Systems. A project to automate a pointing machine is currently being planned. In total it is expected that £85,000 will be invested in R&D [machinery]. It is also planned that a project to develop a biomass range will be undertaken within the next 2 years."

Business involved in cKTP

Research investment

"We will certainly be engaging in R&D activities over the coming months/years. These will focus on supporting new emerging technologies from our cloud based services. I would estimate that at least £100,000 will be invested in this area in the next 12 months."

Business involved in cKTP

Apart from that, 60% of businesses started to invest in plant and machinery after getting involved in cKTP. This type of capital can be used for a long period and support the long-term growth of the business.

Having access to academics enables businesses to seek help in relation to short-term issues such as access to

new human resources, the use of resources available at the university to perform tests and quality control, access to different approaches for problem solving, and contributions to the completion of existing projects.

In terms of future engagement and job creation, 92% of businesses said that additional investments were made in this area as a result of cKTP in the region, which highlights regional level impact. The programme helps job creation in the region, with 92.5% of businesses saying that they either hired or intended to hire the graduate on completion of the project. And a further 76.3% of businesses said that they either created or intended to create

Training and development

"Further opportunities are to be explored in relation to the ongoing development of the [...] toolkit and training programme. This could be built into either internally or externally funded research projects that partner both organisations. Part of the action plan would be for the respective Business Development Officers to review funding opportunities related to [...] or other common areas of interest and expertise."

Business involved in cKTP

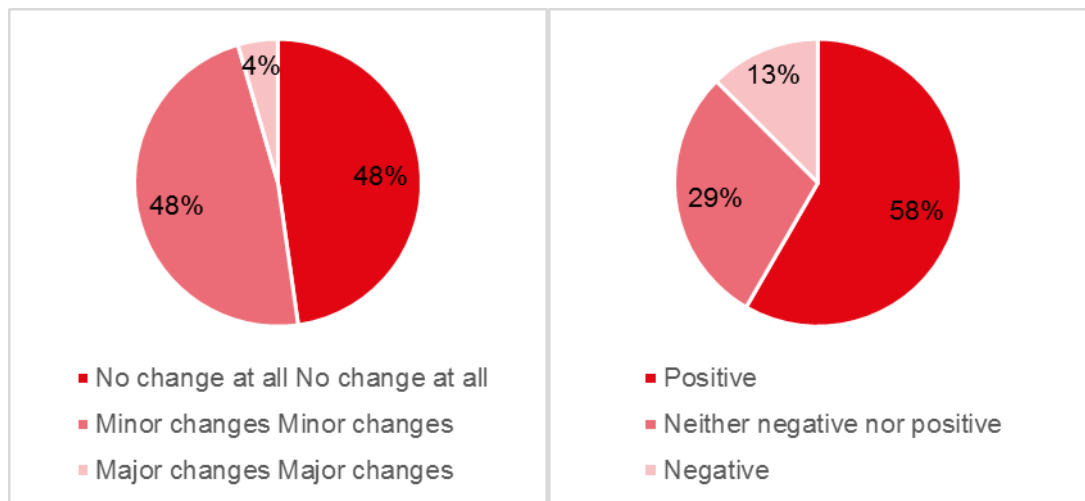
new jobs as a result of the cKTP. With more new jobs created or going to be created, it demonstrates the contribution of cKTP to helping graduates secure jobs within the region.

1.1.6 Re-evaluation of cKTP objectives

The process of re-evaluating the original project objective was initiated as around half the businesses changed their objectives during the project, and it seems that the changes occurred for several reasons.

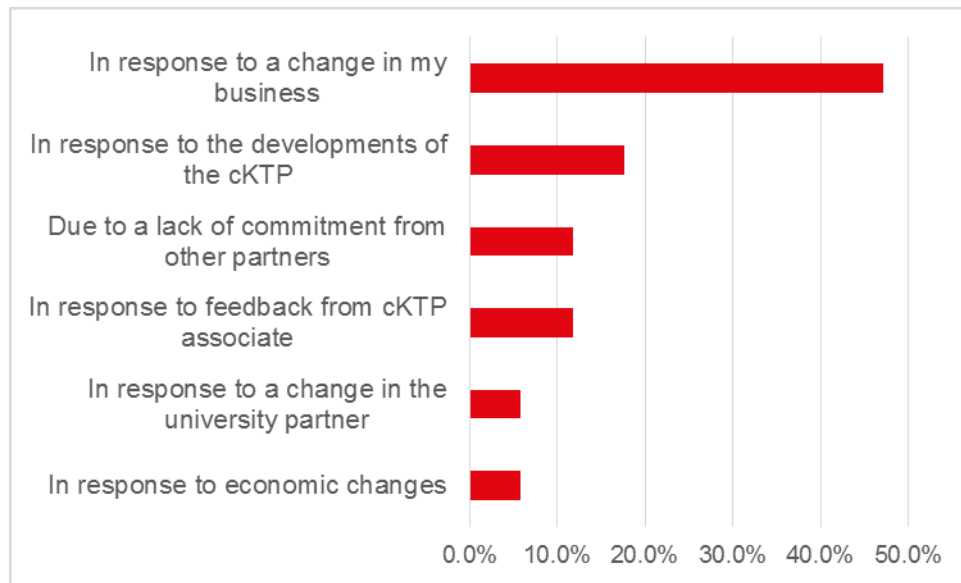
Around 47% of businesses feel the re-evaluation was necessary in response to changes within the business, such as staff changes, restructuring or even recruitment of a new manager. Although re-evaluation of the project objective may help to improve the outcome of the project, only 58% of businesses see the re-evaluation of the original objective as a positive step in ensuring the success of the project.

Figure 1.8 Percentage of changes in original objective and its impact



More than 15% of businesses experience changes in response to the development of the cKTP itself. As the project progresses, more ideas develop and these may re-shape the project. Constant mapping of the project's progress against its objective is crucial, particularly since around 48% of businesses indicated a constant need to clarify the project requirements due to the ever-changing business climate.

Figure 1.9 Reason for re-evaluation of project objective



1.2 Academic impacts

1.2.1 Universities involved and the academics' characteristics

The University of Wolverhampton accounted for 51% of the overall distribution of cKTP academics. Staffordshire University was second with 22% of academics involved in the cKTP programme, while 13% of academics came from Birmingham City University. Although University of Worcester is part of the consortium, the academics did not actively engage in cKTP. Figure 1.10 illustrates the distribution of the academics.

Figure 1.10 Percentage of cKTP academics from 5 universities

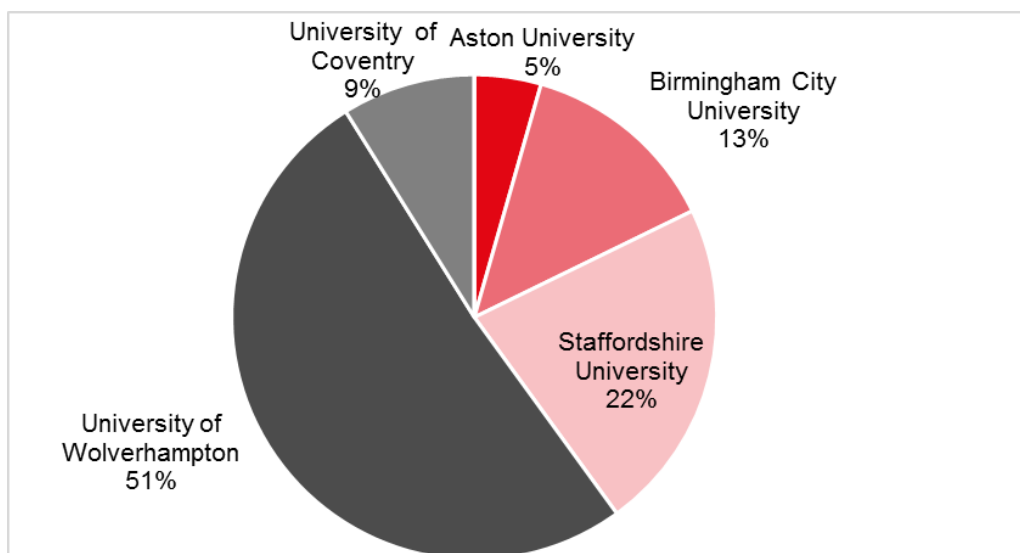


Figure 1.11 Job roles of the cKTP academics

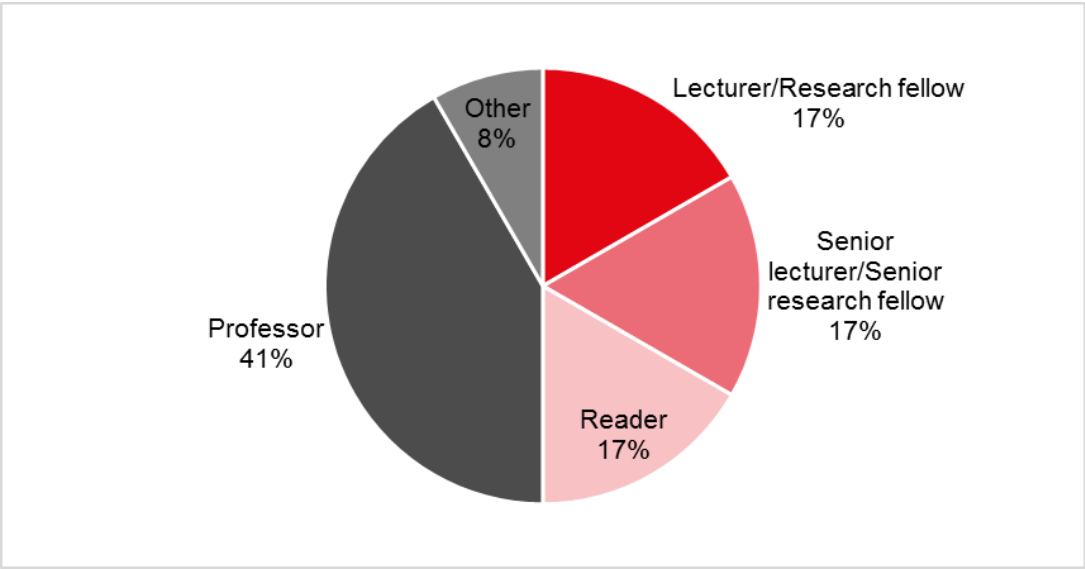
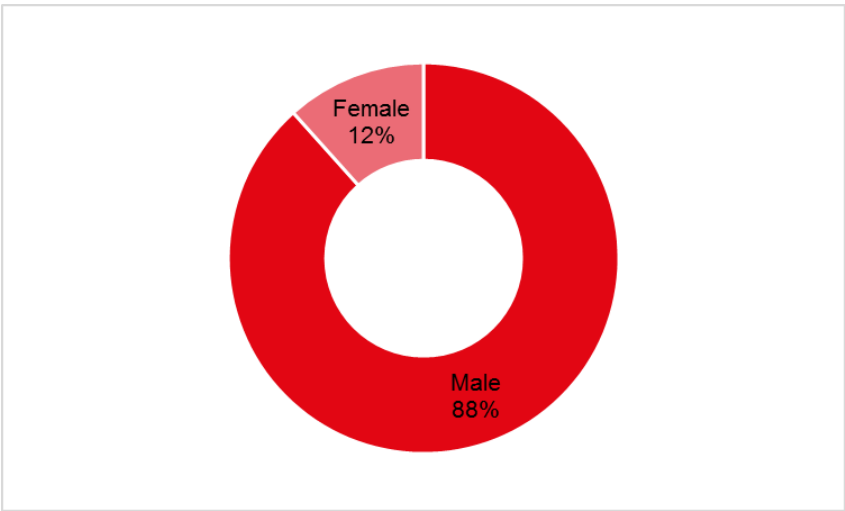


Figure 1.11 illustrates the job title of the academics that engage with cKTP. The highest level of involvement in the cKTP programme was from academics at professor level. Others, such as reader, senior lecturer/senior research fellow and lecturer/research fellow, each account for 17% of academics involved. Interestingly, 88% of academics involved in cKTP are male.

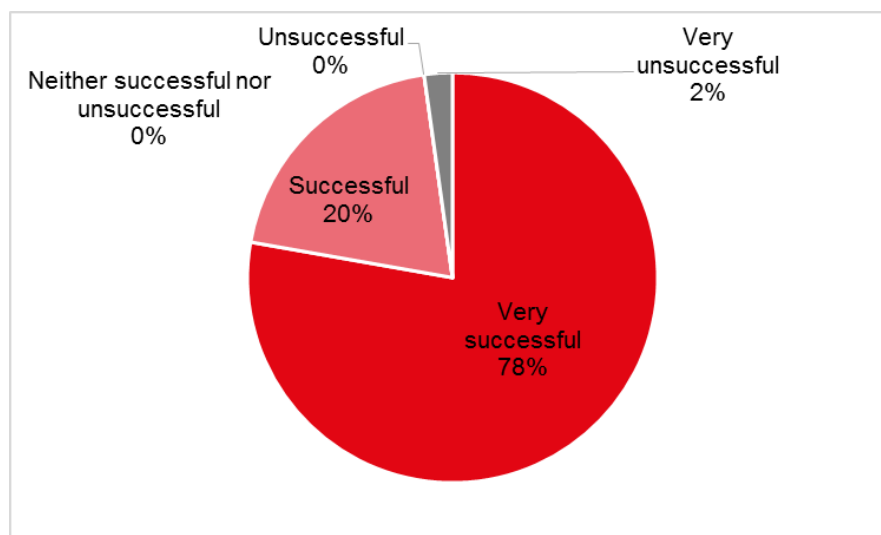
Figure 1.12 Gender distributions for academics



1.2.2 Overall success

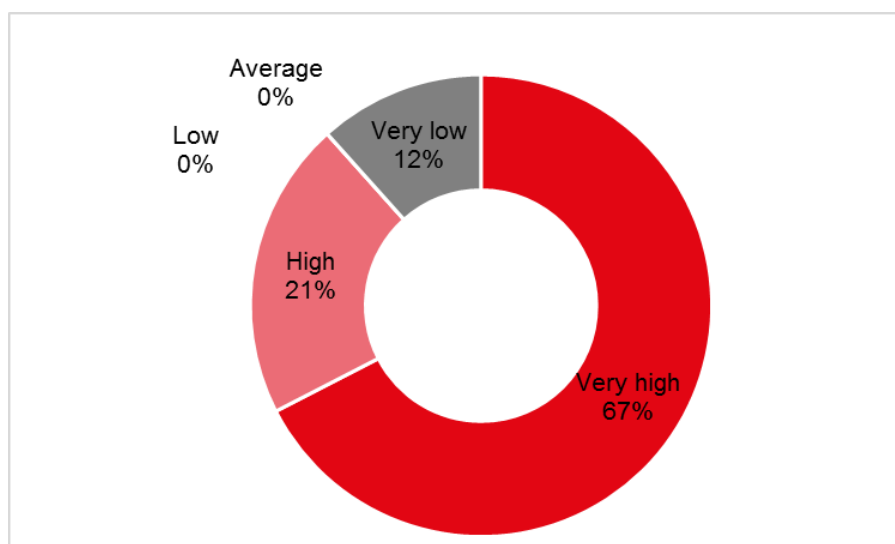
The cKTP programme has been recognised by academics as rewarding – 78% of academics perceived the programme to be very successful. Also, 20% of academics recognised the programme as successful, with only 2% perceiving it to have been very unsuccessful (See Figure 1.13).

Figure 1.13 Overall success of the programme (Academic perspective)



But even though 98% of academics perceived the programme to be successful, only 67% are very highly likely and 21% are highly likely to engage in a cKTP programme in the future. 12% of academics are not likely to engage in the programme again.

Figure 1.14 Likelihood of academics engaging in a cKTP intervention in the future



Real life examples used in classes

“Case studies have also been published for use in teaching subjects such as B2B Marketing, and HR subjects linked to staff motivation, training and development. Witnessing the successful practical application of theory and principles gives powerful examples for use in teaching.”

Academic involved in cKTP

1.2.3 A full collection of benefits

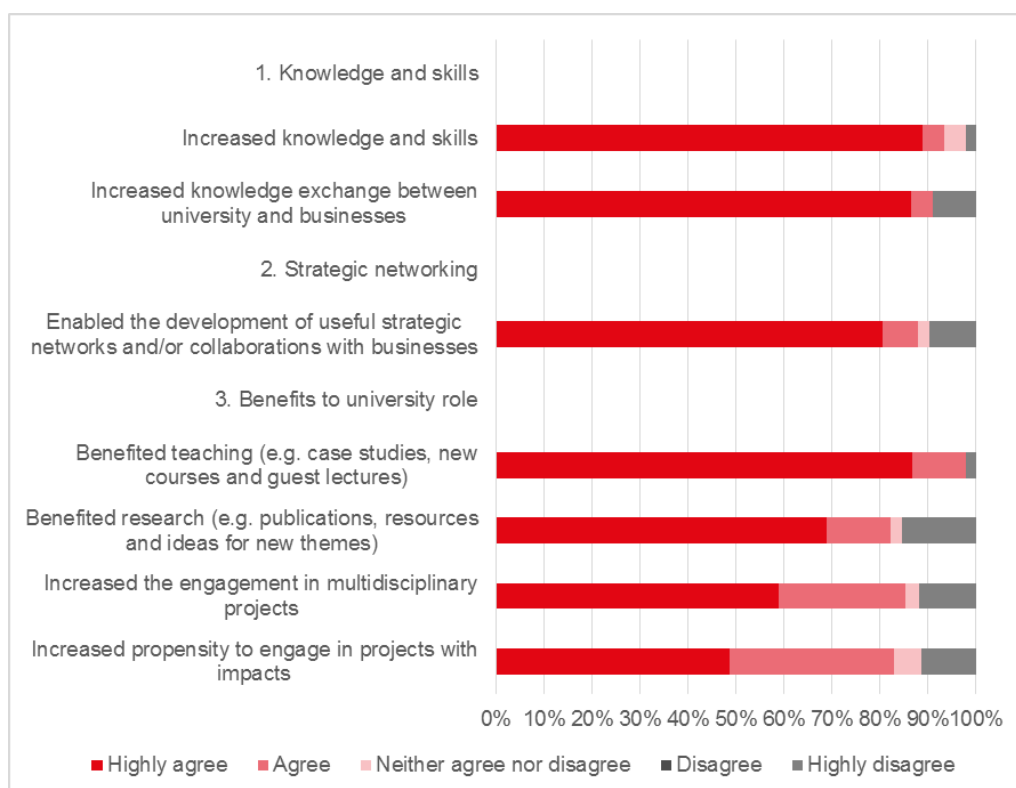
How cKTP helped academics:

- 95% reported benefits to teaching
- 82% reported benefits to research
- 88% built strong relationships with local businesses
- 68% have potential future collaborations with businesses

Academics have particularly experienced benefits in relation to their knowledge and skills, strategic networking and teaching and learning. This demonstrates that the programme's aim to develop and strengthen long-term relationships between academics and businesses is being met, with 90% of academics agreeing that there has been an increased knowledge exchange between university and business.

cKTP allows a great deal of development in terms of applying knowledge in industry and acquiring skills through interactions with business.

Figure 1.15 Summary of the benefits gained by the academics through engaging in the cKTP



Through the programme academics developed strong relationships with business by proactively engaging with other local businesses. This benefited the students as well, as it allowed the courses to be very close to practitioner requirements. Academics reported long-term benefits for their teaching activities, particularly in relation to developing new courses,

Increased knowledge exchange

“The partnership gained a lot from this process; certainly a great deal of development knowledge was embedded at this stage...The University has formed a number of useful relationships through the project, for example [Prof. Y] is now a Visiting Professor and forthcoming bids will enhance the University’s reputation and attract further funding.”

Academic involved in cKTP

new curricula and new and practical teaching materials. Having the knowledge bases of diverse partners is found to create more value (Mindruta, 2013), as this provides new perspectives from which to approach industry problems.

The academics involved in our sampled cKTPs have a higher likelihood of impact on their research and publication compared with cKTP impact at the national level based on 2010 data.

1.2.4 Future value

This section highlights the future value generated from cKTP for academics. The majority of the future value arises from two themes related to people based and research based activities. 80% of academics rated training and development as one of the long term benefits arising from cKTP, and around 65% of academics believed that the cKTP would provide a base for a future collaboration with businesses including research and joint publications.

Potential for future projects

“There is potential for a further project with the company – they have a need for marketing input as they now start to see the potential to attract more clients through the website.”

Academic involved in cKTP

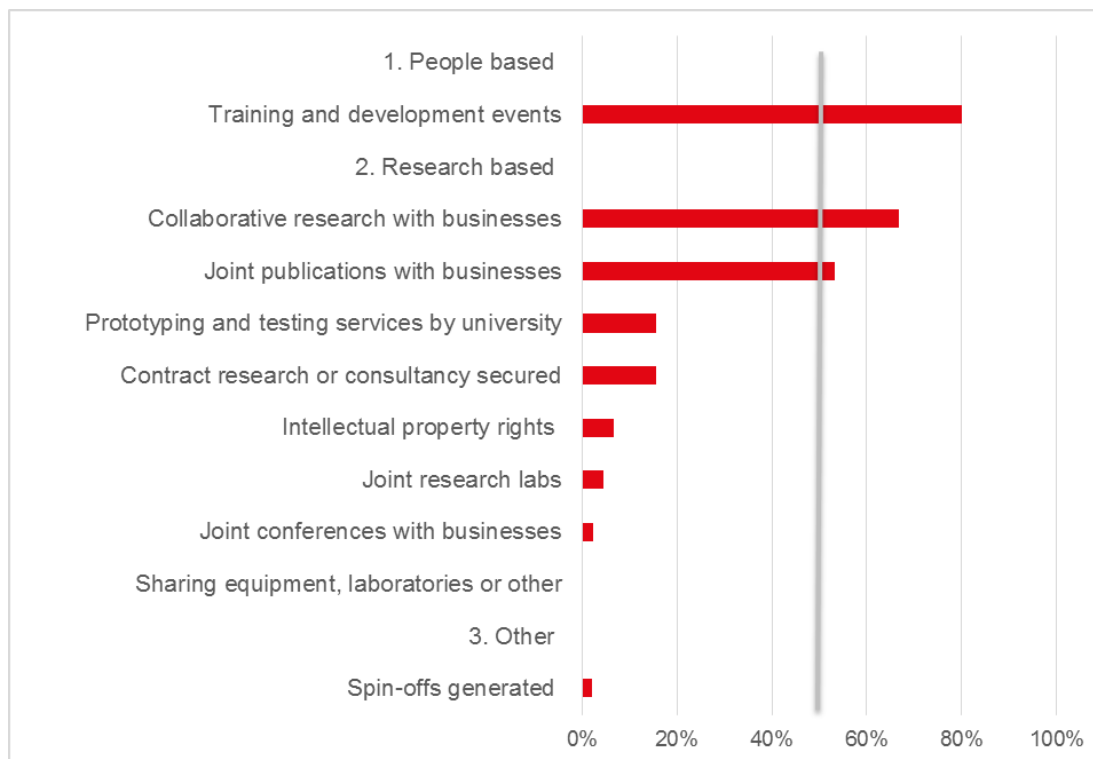
Strong relationship with local businesses

“In line with the University’s strategic direction we have formed a strong relationship with a local company and established further links between academic learning, company needs and enterprise activity. Working with a company that is pro-active in marketing the relationship to other local businesses subsequently encourages more to get involved.”

Academic involved in cKTP

Figure 1.16 Future value to university arising from cKTP

Please note that distribution of future value illustrated in the figure below does not add up to 100% as some of the businesses benefited in multiple ways



55% of academics value the ongoing support for university research by businesses, as joint bids for research funding may be made after the cKTP programme has finished. Having access to businesses is seen as a valuable asset for academics, particularly as it provides them access to ideas for publication and future research, to test applications of their theories, derive new perspectives from which to approach industry problems, secure funds for their laboratories and to supplement funds for their own academic research. However, most of these benefits materialise over the long term (Arza 2010) and also require continuous engagement beyond the cKTP programme.

Training and development

"[There is] potential to offer accredited courses to [company] staff. Currently under consideration are both the Foundation Degree and MSc programmes in Assistive Technology Extending hoarding work: Further opportunities to be explored in relation to the ongoing development of the hoarding toolkit and training programme. This could be built into either internally or externally funded research projects that partner both organisations."

Academic involved in cKTP

1.2.5 Re-evaluation of cKTP objective

The process of re-evaluating the project objective was found by 56% of academics to be positive. 55% of academics experienced a change to their original project objectives over the course of the programme, see Figure 1.17.

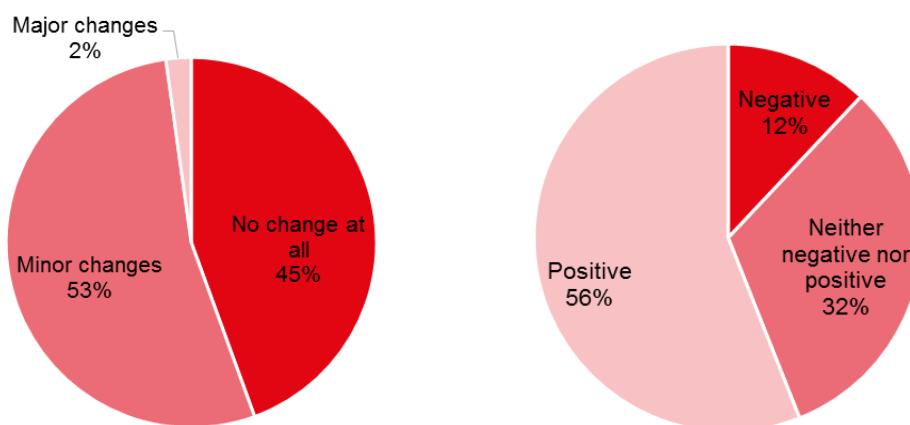
Future collaborative work

“The links between the [University] and the Company will continue initially in the joint authoring of journal papers associated with this work. In addition, projects will be developed for use with final year undergraduate and masters level students. This work will be used to look at the development of future research projects, it is anticipated these may take the form of PhD projects or post-doctorate level funded work.”

Academic involved in cKTP

Figure 1.18 illustrates that changes to the project objective seem to occur for several reasons. Around 32% of academics feel the re-evaluation was necessary in response to the development of the cKTP project. Re-evaluation of the project objective a few months after the project has started provided insights into the current situation and helped to ensure a successful completion of the project. More than 25% of academics believe that the project objective changes in response to the development of the cKTP itself (such as more ideas suggested after doing the initial work on the aim of the project) while more than 25% of academics perceived the change in objective to be due to feedback from the graduate.

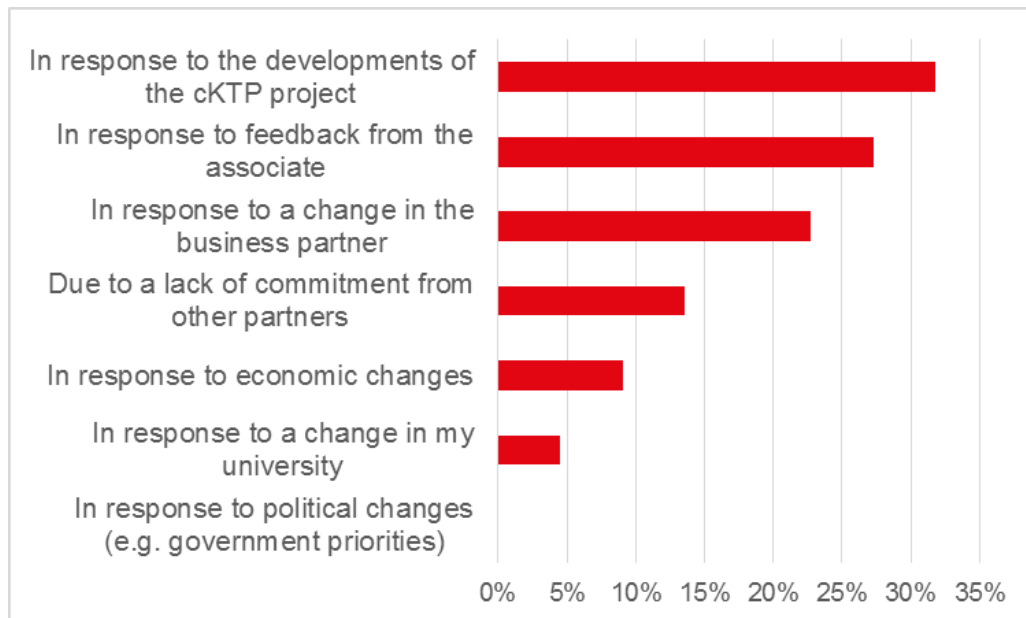
Figure 1.17 Percentage of changes in original objective and its impact



As the targeted objective changed, whatever the reason, academics decided to put even more

emphasis on supporting the graduate.

Figure 1.18 Reason for re-evaluation of project objective

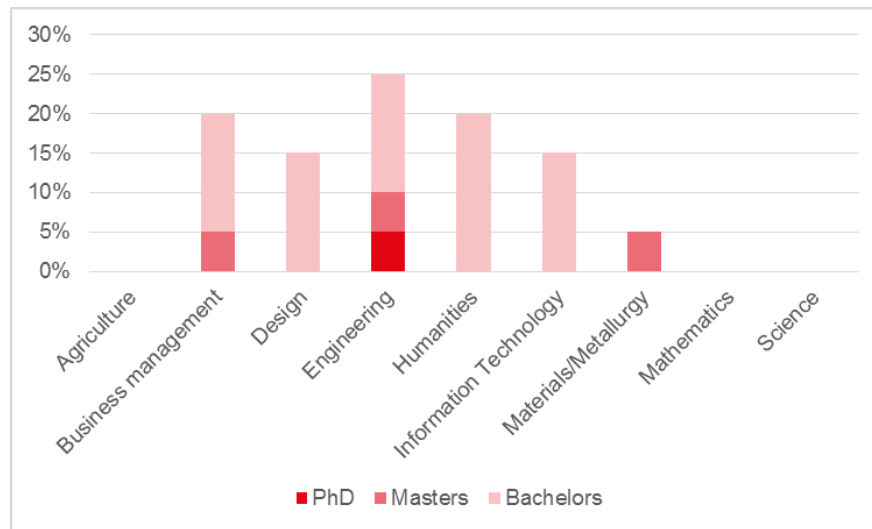


1.3 cKTP as graduate employer

1.3.1 Characteristics of graduates involved

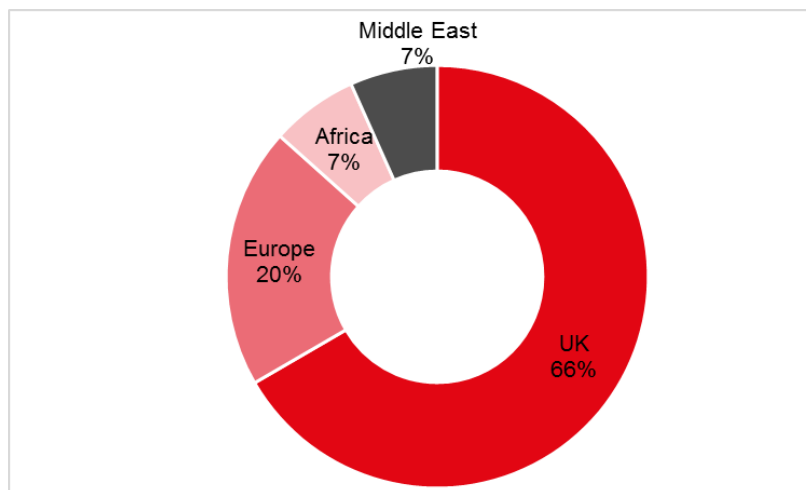
The majority of the graduates involved in the 45 cKTPs in our sample have a degree qualification, particularly in engineering (25%), business and management (20%) and humanities (20%). The rest of the graduates come with a background in information technology (15%), design (15%) and materials/metallurgy (5%). Interestingly, only 15% hold a master's degree and only 5% hold a PhD.

Figure 1.19 Qualification of graduates



66% of the graduates involved in our cKTP sample have UK nationality, with only 20% from other European countries. cKTP also recruited foreign graduates – 7% of them have African nationality and 7% Middle Eastern. This shows that cKTP attracts graduates from diverse backgrounds.

Figure 1.20 Graduate's nationality at the time of cKTP



The graduates that participated in the cKTP programme were all below 35 years old, with 80% of them male. 69% of the graduates were less than 30 years old when they participated in the cKTP, 38% were aged 20–25 years old, and 31% were aged 25–30 years old. So the majority of graduates were young and highly skilled, with 80% of them male.

Figure 1.21 Graduate's gender

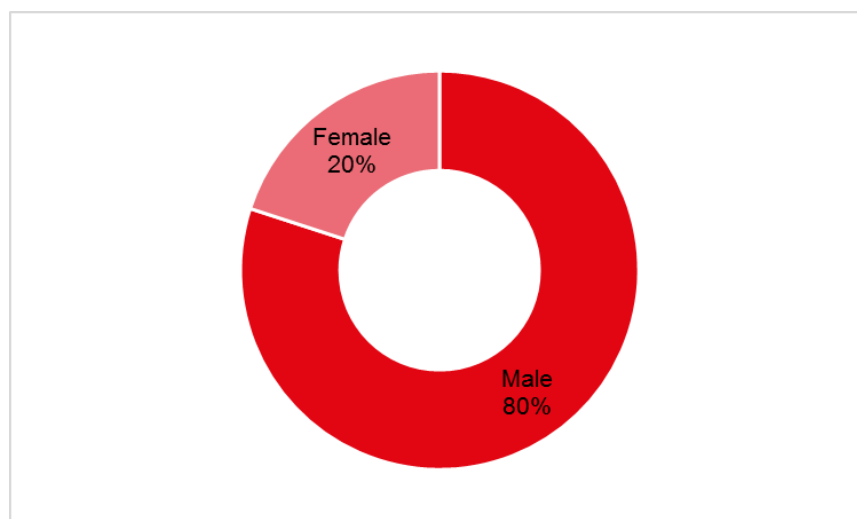
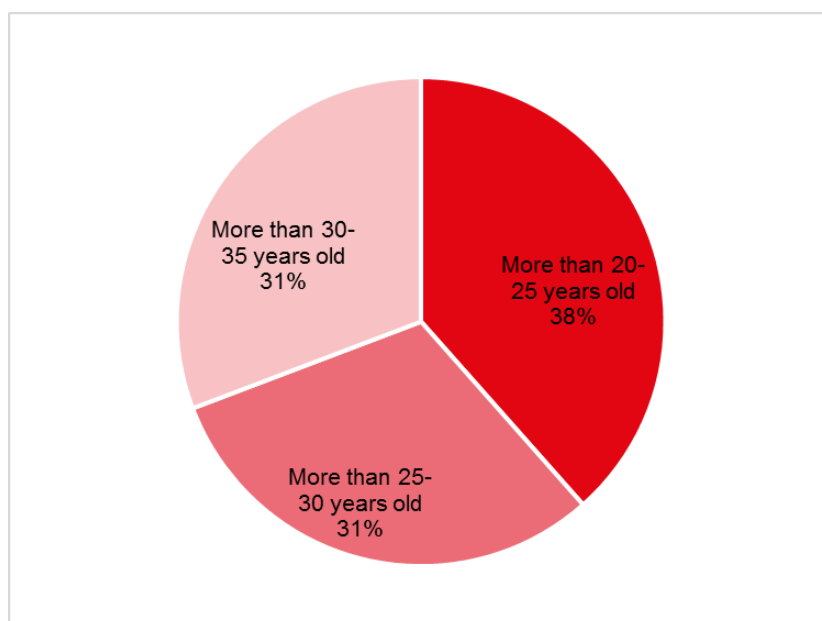


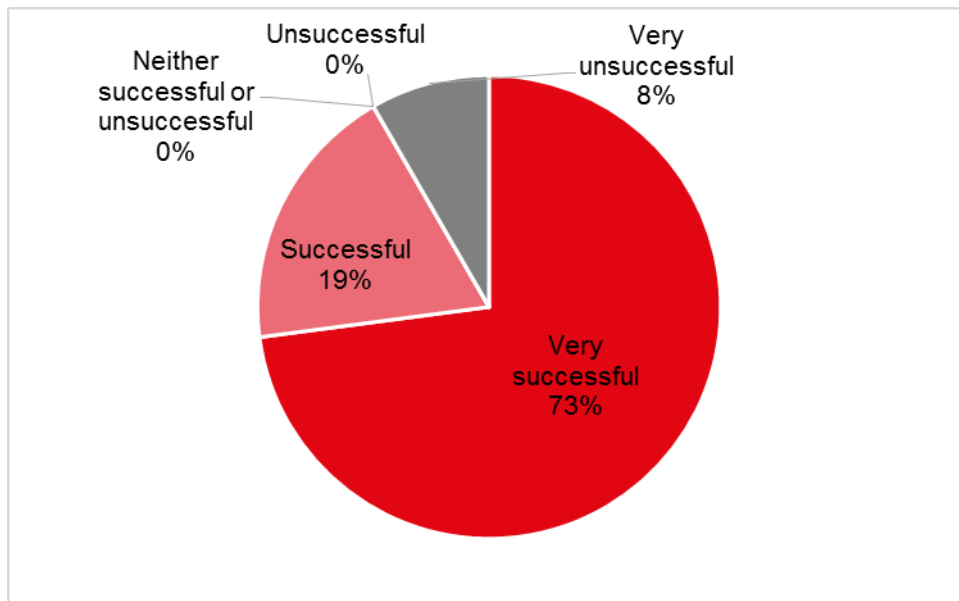
Figure 1.22 Graduate's age



1.3.2 Overall success

The cKTP programme has been very rewarding for the graduates, who mediate between businesses and universities. 73% of graduates perceived the programme to have been very successful. Also, 19% of graduates saw the programme as successful, with only 8% perceiving it to have been very unsuccessful (See Figure 1.23). This shows that the majority of graduates were involved in a successful programme with impact.

Figure 1.23 Overall success of the programme (Graduate's perspective)



1.3.3 A full range of new skills

Figure 1.24 reflects the type of skills the graduates acquired, based on the department of a business they were based in.

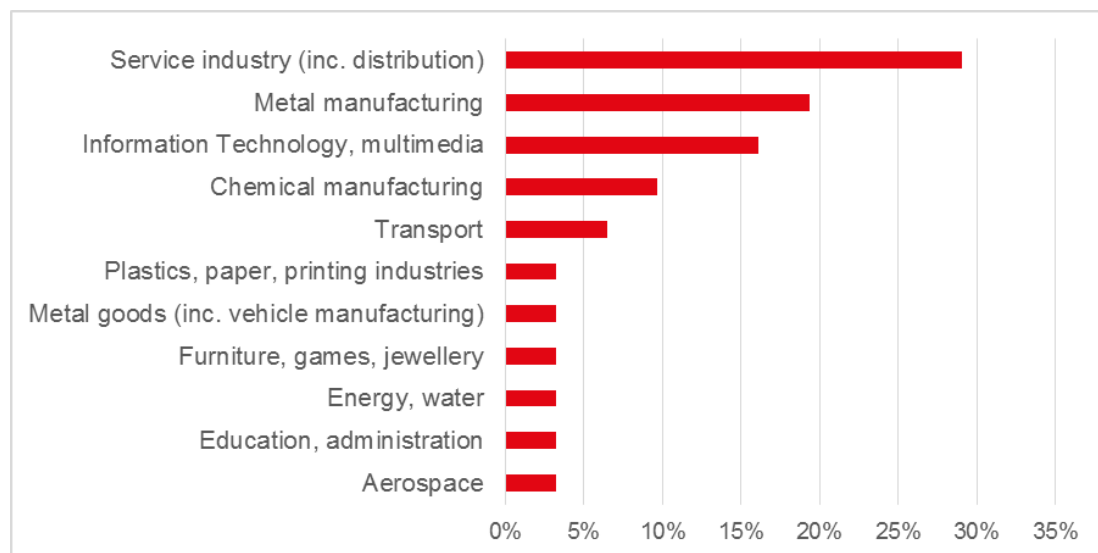
Figure 1.24 A reflection of the type of skills graduates acquired



75% of graduates acquired skills based on product development and design while 66% of graduates acquired skills in business operations. Sales and marketing (56%) and research and development (56%) are the next most acquired skills. So it is clear that graduates benefited from the cKTPs through training and upskilling. Graduates value the development of new skills through the cKTP.

Looking at the sector of the business where the graduate was based, we can also see in which sectors their talent was best developed during a cKTP. Based on the survey, we can conclude that most graduates developed their skillset in the service sector (including distribution) (28%), while 18% did so in metal manufacturing. 16% progressed their skills in the information technology and multimedia sectors respectively, and 10% in chemical manufacturing.

Figure 1.25. The sector where graduate skills were acquired



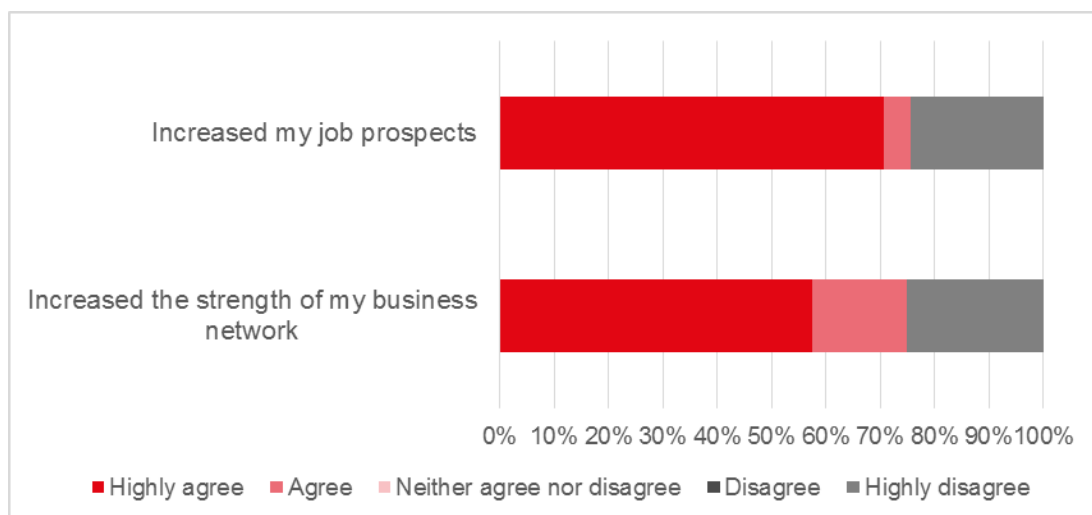
1.3.4 Job prospects

How cKTP helped graduates:

- 70% reported benefits to their job prospects
- 73% received a job offer from the cKTP company
- 78% were recruited by companies based in the West Midlands

70% of graduates felt that the cKTP increased their job prospects. This is because the involvement of the graduates in a collaborative programme enabled regular interaction and a strong sense of common interest, especially within the business itself. As a mediator between university and business, 58% of graduates also benefited through an increase in the strength of their business network.

Figure 1.26 Benefit of cKTP to graduates



Increasing job prospects and attracting talent to the region

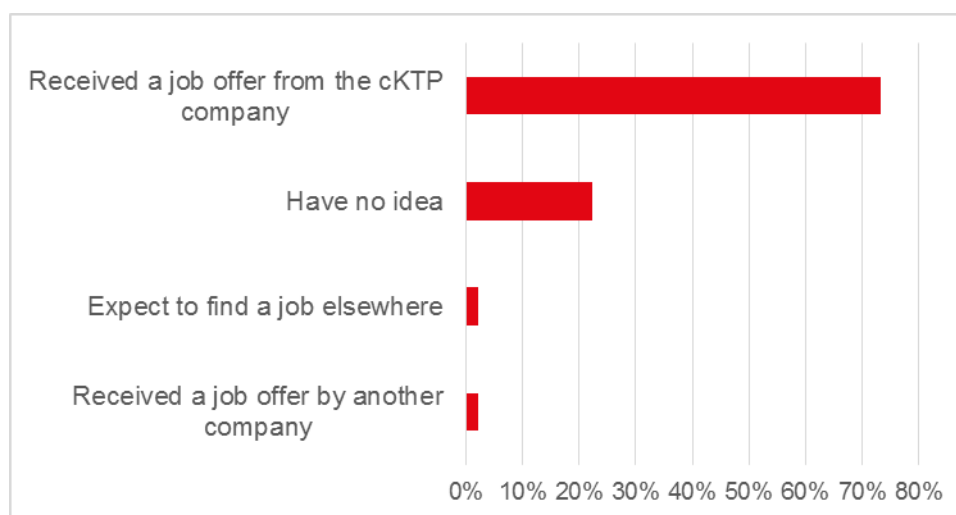
Figure 1.27 highlights that more than 70% of graduates received a job offer from the business they worked with during the cKTP programme. In addition, around 5% expected to find jobs elsewhere and approximately 5% received an offer from other businesses. If the cKTPs succeed and the graduates perform well in the cKTP, the businesses move forward and grow. And if the businesses are recruiting, it also means there is the possibility that they will recruit more people from the local area. With 22% of graduates having enrolled to complete a higher degree while taking part in the cKTP, which could add to their job prospects.

Willingness to hire skilled graduates

“This has been one of the most satisfying KTPs. The work of the associate has been outstanding with some exceptional solutions to difficult technical problems being achieved. The relationship with the company’s Group Operations Director has also been totally positive and he has given his full support to the associate, the management team and also the University as he has proactively publicised the benefits of this collaboration.”

Academic involved with cKTP

Figure 1.27 Increasing job prospects



The programme has also attracted graduates into the region, where around 30% of graduates have moved from a different region to the West Midlands for the cKTP. The job creation aspect of the programme is good, as 78% of graduates were recruited by a company based in the West Midlands (i.e. only 22% of the cKTP graduates haven't secured a job yet).

1.4 cKTP Impact: Overview of the programme

As a result of cKTP investment in the region, businesses which participated in the programme benefited from a **£40,333 increase** in their annual profit, with over 75% of businesses creating or intending to create jobs for the region.

66% of **businesses** perceived the programme to have been very successful. cKTP helps to:

- improve their knowledge and skills
- form useful contacts and valuable relationships
- improve R&D
- signal to competitors and customers their association with universities
- facilitate organisational change

78% of **academics** perceived the programme to have been very successful. cKTP helps to:

- build strong relationships with local businesses
- increase knowledge exchange
- increase the use of practical and applied examples in classes

○

73% of **graduates** perceived the programme to have been very successful: cKTP helps graduates to:

- have better job prospects

2. Knowledge Exchange Enterprise Network (KEEN)

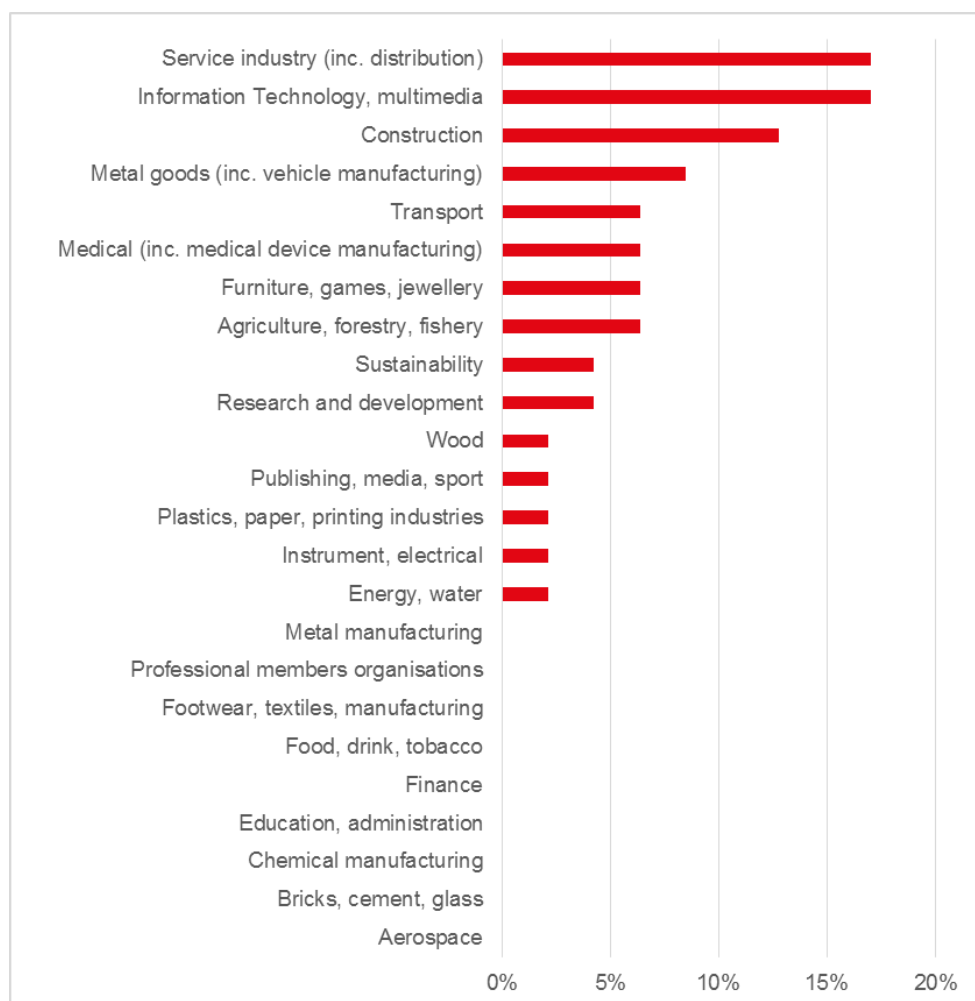
2.1 Business impact

2.1.1 Characteristics of Businesses involved

KEEN across the West Midlands

Businesses trading in the service sector and the information technology and multimedia sector make up the largest proportion of active KEEN projects, with both accounting for 17%. Figure 2.1 illustrates the sector of businesses involved in the KEEN programme. Mapping the sector distribution, as shown in the figure below, against the cKTP, we can see that KEEN was able to tap into industries that cKTP was not, such as agriculture, forestry and fishery; medical (devices etc); wood and sustainability. The pre-innovation focus for KEEN helps to widen the business sectors for the programme and opens the door for different types of businesses to join.

Figure 2.1. Sector distribution (100% in total) of businesses involved in the programme



The importance of operational excellence in business

Most projects in the KEEN programme aim to help businesses with their sales and marketing issues, (around 20%), research and development (around 15%), business management (around 13%) and also product development and design (around 10%). Interestingly, the KEEN programme opens up projects within finance departments, usually considered to be a fairly conservative area, and broadens the scope of the programme. Figure 2.2 below outlines all the business departments where a KEEN project has been undertaken.

Figure 2.2. Business department at which the KEEN is based

Please note that distribution of business departments in the figure does not add up to 100% as some of the projects are involved in more than one business area.



2.1.2 Overall success

The KEEN programme is rewarding for local businesses. More than 78% of businesses are likely to engage in a KEEN programme in the future, partly because 89% of businesses perceived the programme as having been successful; 42% of them acknowledged it as very successful. Only 11% of businesses consider it to have been unsuccessful (See Figure 2.3).

Figure 2.3. Overall success of the KEEN programme (Business perspective)

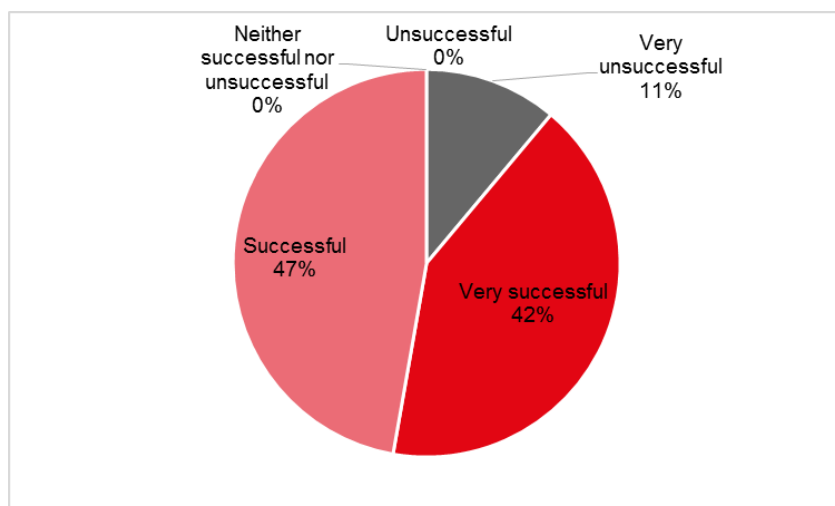
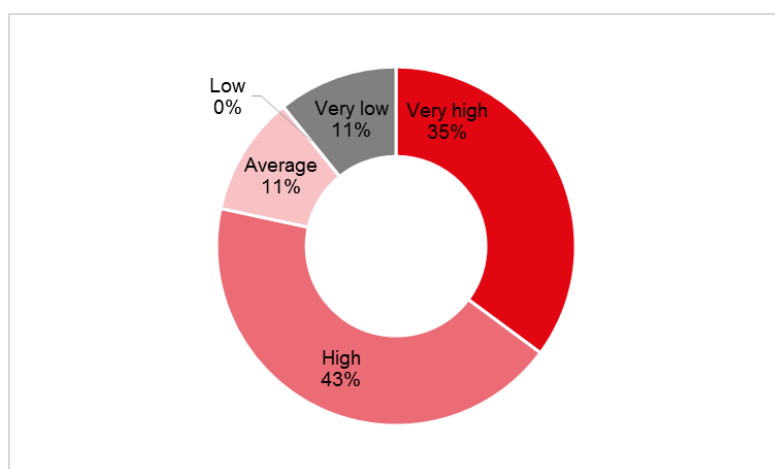


Figure 2.4. Likelihood of businesses engaging in a KEEN intervention in the future



2.1.3 Increase in business performance and regional contribution

How has KEEN helped businesses grow?

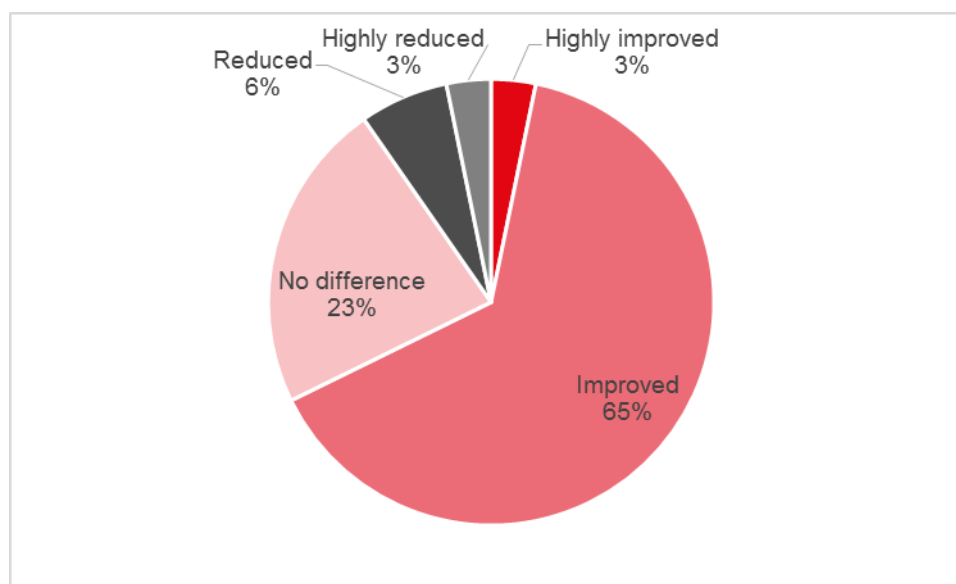
Between 2012 and 2015, for every £1 invested in the KEEN projects:

- Average £8.05 increase in sales
- Average £0.79 increase in (pre-tax) profit generated per company
- 82.8% of businesses reported additional investments made to the business as a result of KEEN

Various non-traditional business sectors (such as agriculture, forestry and fishery) benefited from KEEN, not only from the financial contribution, but also in relation to other benefits gained immediately and also expected in the future.

It was reported that 68% of businesses felt that the results they achieved through the KEEN programme would play a significant part in improving the future performance of their business. Only a small number of businesses (3%) stated their performance as very highly improved. Also, only 9% of businesses experienced reduced financial performance.

Figure 2.5 State of financial performance after KEEN involvement



Knowledge transfer activities followed the investment made by ERDF with a grant contribution of £2,384,541¹ for the KEEN. 125 companies in total got involved in the programme and they invested around £2,344,590. On average, the investment made to each business by ERDF was around £32,470 after adjustment has been made to allow comparison with cKTP as the average length for each KEEN project is 14 months rather than 24 months. This shows that for every £1 investment made by the funding agency, companies invest around £0.98 for the KEEN project. The higher level of company investment for KEEN compared to cKTP provides evidence that companies are willing to invest in knowledge transfer. The management fees for each project are £13,000, hence, with 125 companies, the total is £1,625,000. Every £1 investment including the management fees sees companies investing on average £0.58. Overall, the businesses benefited considerably from the investment and generally a continuous growth can be seen in the businesses' sales, exports and profits across the duration of the programme. Around £3.8 million of increased sales is anticipated in the three years after the KEEN projects have ended.

¹ This figure is total investment by ERDF excluding the management fees of £1,625,000

For each £1 investment made by the funding agency for each company, an increase in sales of £8.04 has been seen in the final year of the KEEN project, and on average, a company anticipates an increase in sales of £118 after 3 years. Every £1 investment for each company has seen an increase in profit of £0.79, and on average, a company anticipates an increase in profit of £41.12 in the 3 years after the project has ended.

For every £1 investment in KEEN (excluding management fees)	For every £1 investment in KEEN (including management fees)
£8.05 increase in sales in the final year of the project	£4.79 increase in sales in the final year of the project
£0.79 increase in profit in the final year of the project	£0.47 increase in profit in the final year of the project

2.1.4 Additional investment and job creation to the region

82.8% of businesses reported additional investments made to the business as a result of KEEN, in addition to the co-investment required to engage in the first place.

The programme also helps job creation in the region, whereby 87% of businesses reported that they either hired or intend to hire the graduate on completion of the project. The rest of the businesses do not plan to hire partly because of the mismatch between what the business needs and what the graduates have (skills which are either too specialist or too generic, which require close supervision).

As the majority of businesses are small businesses, business managers found that there is a need to have independent graduates who are confident enough to explore and contribute without needing close supervision. There are also instances where graduates left to work with client organisations, although this was rare. Nevertheless, 77.8% of businesses said that they either created or intended to create new jobs as a result of their KEEN engagement. The average employee salary per annum for the created jobs is £23,040 with a range of £16,000 to £29,500.

2.1.5 A full collection of benefits

KEEN has generated a range of benefits including knowledge and skills, strategic networking, product and market innovation, financial, cultural change, research based, and social benefits. Figure 2.6 summarises the benefits gained by the businesses through engaging in the KEEN programme and forms the basis for the subsequent discussion in this section. Businesses benefit more from knowledge and skills (more than 80%), strategic networking (more than 70%) and product and market innovation (around 60%). On average, around 60% of businesses found financial benefits to be important. Around 33% of businesses found it

socially rewarding, as they started to engage more with the community, and also directly engaged with universities through graduate supervision.

The dedicated development time helps businesses to increase their knowledge and skills

Businesses that engaged with the KEEN programme said that the time they have to put aside to work on the KEEN project enables them to reflect on their work and increase their knowledge and skills. From their perspective, having to put aside a dedicated time to work on the project alongside the graduates and academics helps them to consider what is important for the business.

Dedicated development time

“The key strength for this is to give us the real additional development time that we had to put aside”

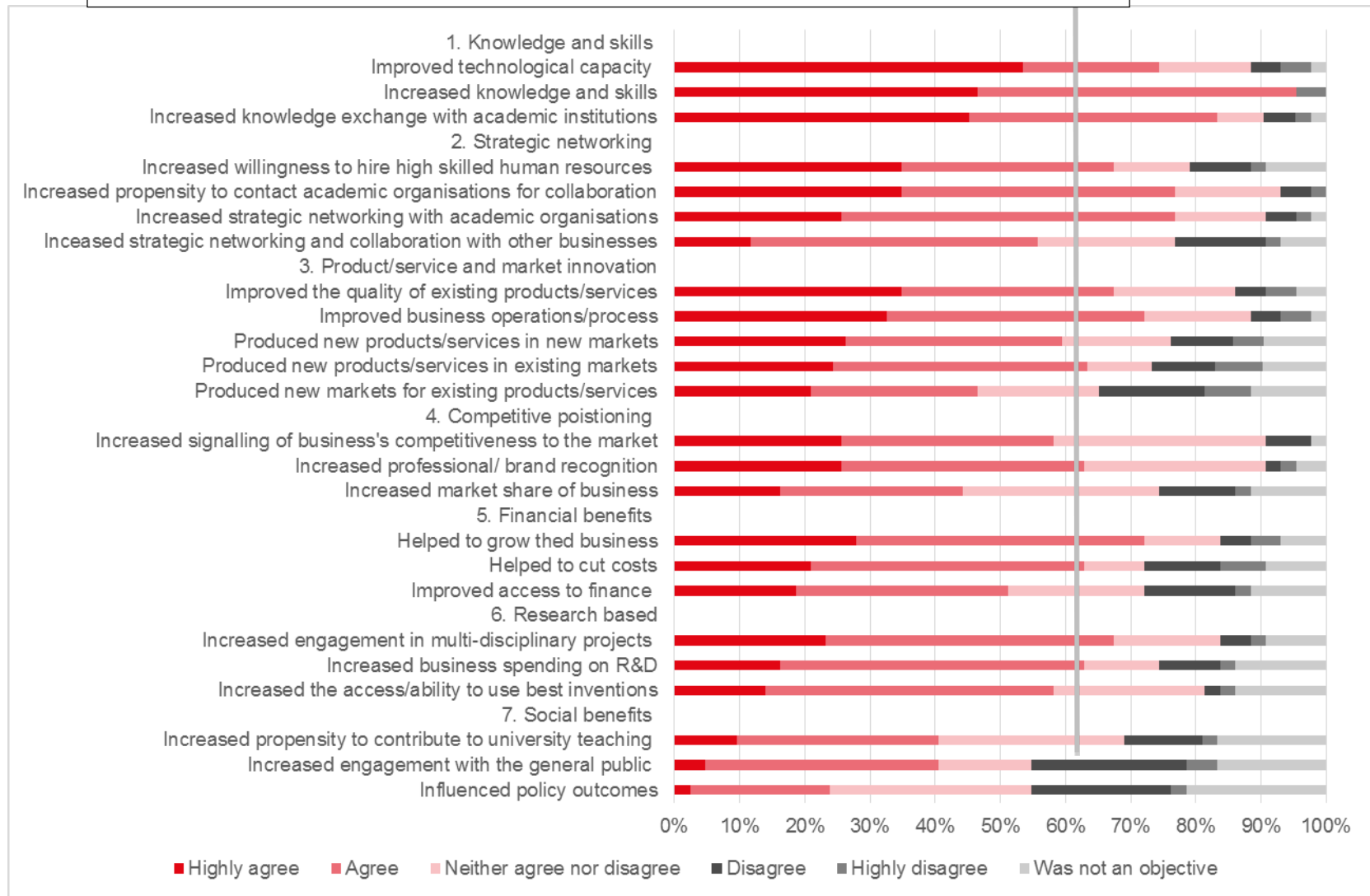
Business involved with KEEN

Increased in knowledge and skills

“Our company in terms of marketing has transformed totally. Before KEEN we did not spend anything on marketing”

Business involved with KEEN

Figure 2.5 Summary of the benefits gained by the businesses through engaging in KEEN



For example, one business decided to transform their way of allocating budget to departments, and started to invest in areas where they have never invested before. Businesses also found the KEEN programme provides an avenue for them to be more proficient in technology, which improves every aspect of running their business. For businesses, having access to knowledgeable staff in the university is valuable, and also the reason why they first wanted to apply to join the programme.

Networking with academics opens up a new perspective for business

Businesses found that their interaction with academics through KEEN allows them to expand their network to other academics and also to other local businesses.

This increased their propensity to contact other academics in universities to collaborate in projects. Their diverse network of individuals and organisations allowed them to think differently. The new perspectives challenge their current way of thinking and add more value to what they are doing. For businesses, academics provide insights into how to conduct business better (theoretically) and their own experience in business provides ideas on how to marry both perspectives together. Working alongside the academics in the KEEN programme offers businesses the opportunity to challenge their approach. As a result they maintain an active relationship with academics even beyond the programme.

Provide a new perspective

“Working with the University allowed us to think in a different way and it was a brilliant experience”

Business involved with KEEN

Real added value

“Academics challenged what we were doing and added real value to that”

Business involved with KEEN

New market share

The project enables us to expand our new market and we would expect additional revenue from the new service”.

Business involved with KEEN

KEEN helps businesses to be more competitive

The KEEN programme allows businesses to be much more competitive, as the expertise and product that businesses got as a result of the programme developed their profitability. The KEEN project enables businesses to expand to a new market and also gain new revenue prospects.

Feedback at the strategic level

“Because they look at things in a different way than we do and they’re not involved in the day-to-day nitty gritty problems of the business, you know they can stand back and take a more strategic view on that I think. “

Business involved with KEEN

Businesses also found that having additional resources in the office helps. Graduates involved in the KEEN project provide fresh insights in relation to the specific project and also to the business in general. This element is particularly beneficial as many small businesses value how the KEEN programme enables the risk of recruiting graduates to be shared.

Continue to collaborate in the future

"I think what it's really opened our eyes to is the collaboration between external business and academic institutions."

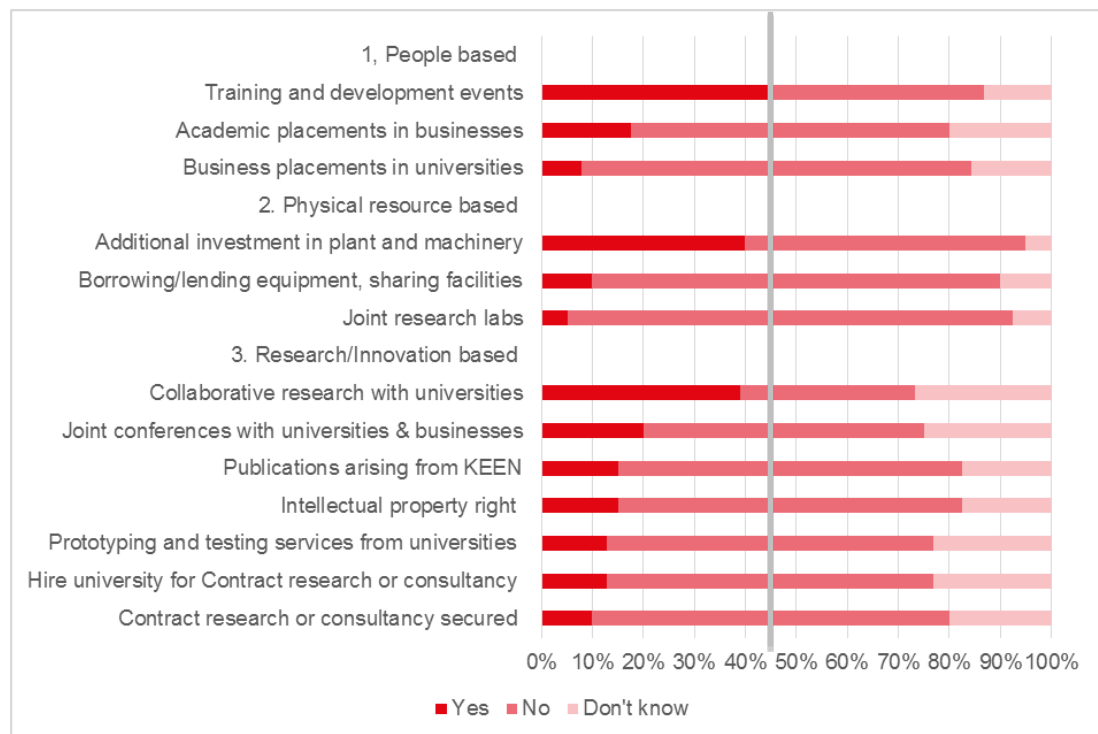
Business involved with KEEN

2.1.6 Future value

Long term benefits to businesses were not as high as expected. Less than 45% of businesses expected to gain benefit beyond the programme. The future values reported are mainly activities that related to people, physical resources, research/innovation and other relevant activities.

Figure 2.7 Future value for business arising from KEEN

Please note that the distribution of benefits in the figure does not add up to 100% as some of the businesses benefited in multiple ways.



Around 45% of businesses feel that training and development events, generated through the KEEN, created the most value beyond the project. This has to do with developing new competences and gaining new experiences, through accessing new sources of knowledge that were previously out of reach.

Around 40% of businesses value their involvement with the KEEN project as it provides an avenue for further collaboration with universities. But unlike with cKTP, businesses engaged in KEEN projects perceived the future value beyond KEEN to be limited. With only a 6–12 month window to collaborate and complete the project, it is a challenge for both the business and the academic side to strike a balance between building a good foundation reach project targets, and at the same time build long term benefits beyond the project. Even though businesses now realise the importance of continuing the collaboration with the university, the relationship between the parties may develop over time, and having frequent interactions across a longer period of time does help. Projects lasting 12 months or longer found it easier to develop long term value beyond the project.

Businesses also found that the way they approach some parts of their business changes tremendously.

Create a foundation

“If we succeed in developing the basics of what we’ve done with KEEN you know, we will have a very big competitive edge to take forward.”

Business involved with KEEN

2.1.7 Re-evaluation of KEEN objectives

The process of re-evaluating the project objective has been found to be positive by 69% of businesses. More than half of businesses involved in KEEN changed their objectives during the project, and it seems that the changes occur for several reasons.

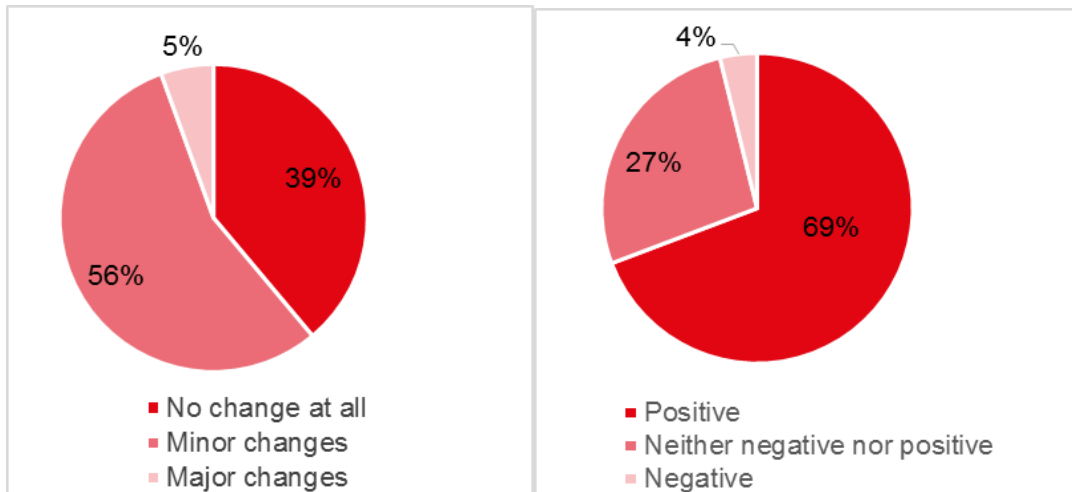
Changing the way they approach their business

“I think the benefit has been in terms of the simulation that we’ve done and I think that probably the biggest benefit is in changing the way that we approach some parts of our business. I think that’s pretty fundamental to be honest.”

Business involved with KEEN

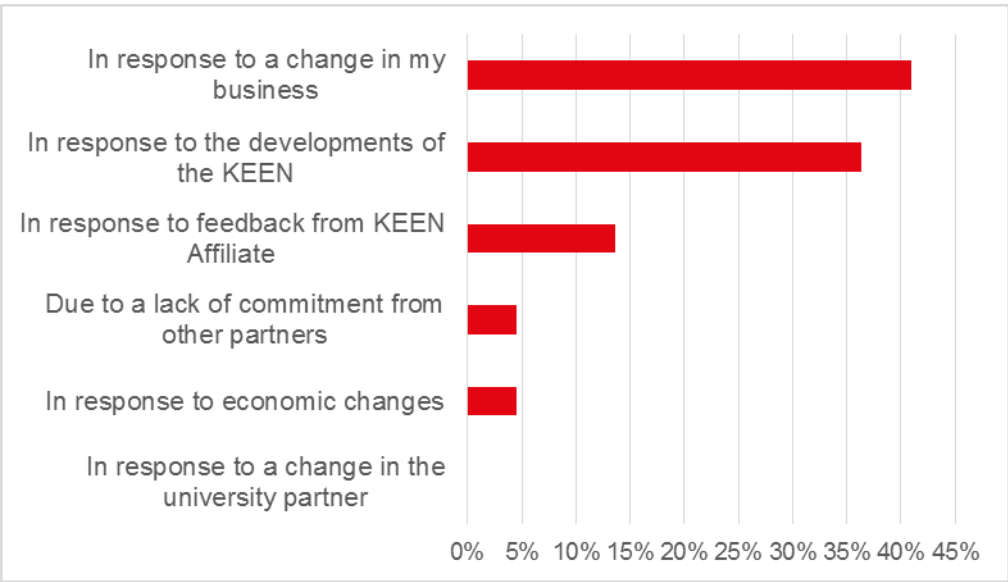
Around 61% of businesses experienced changes to their original project objectives over the course of the programme.

Figure 2.8 Percentage of changes in original objective and its impact



As we can see in Figure 2.9, around 40% of businesses feel the re-evaluation was necessary in response to a change within the business such as staff change, restructuring or even recruitment of a new manager. More than 35% of businesses experience the changes in response to the development of the KEEN itself. This is because, as the project progresses, more events emerged and ideas developed; and this may also have helped to shape the project. Constant mapping of the project's progress against its objectives was crucial. This also highlights that changes made to the project were not due to the lack of commitment between partners. All partners engaged in the programme seemed to be very experienced and committed to completing the project successfully.

Figure 2.9 Reason for re-evaluation of project objective



2.2 Academic impacts

2.2.1 Universities involved and the academics' characteristics

University of Wolverhampton and University of Coventry account for 44% and 31% respectively of the overall distribution of KEEN academics, both significantly more than the other two universities which participated – Aston University (12%) and Birmingham City University (13%).

Figure 2.10 Percentage of KEEN academics from 4 universities

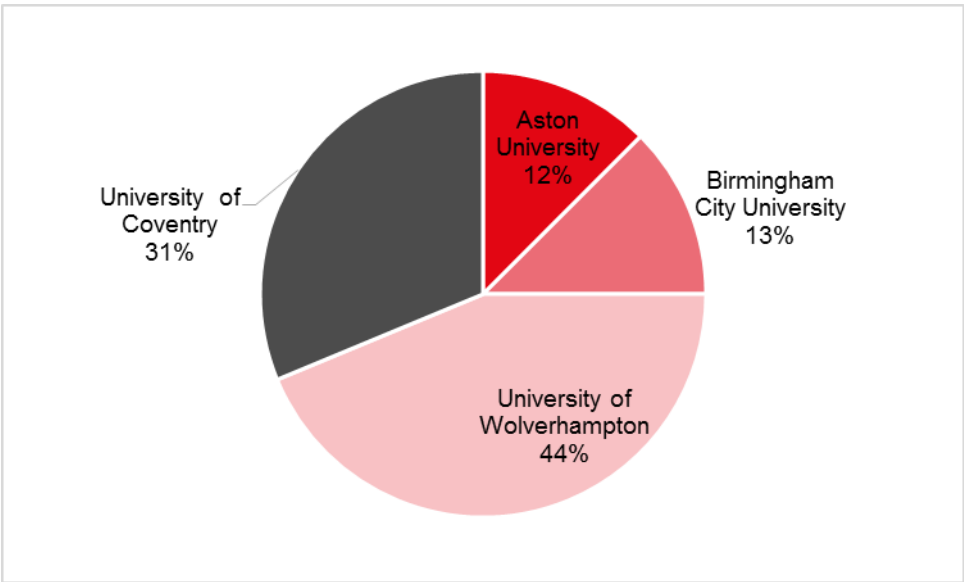


Figure 2.11 Job roles of the KEEN academics

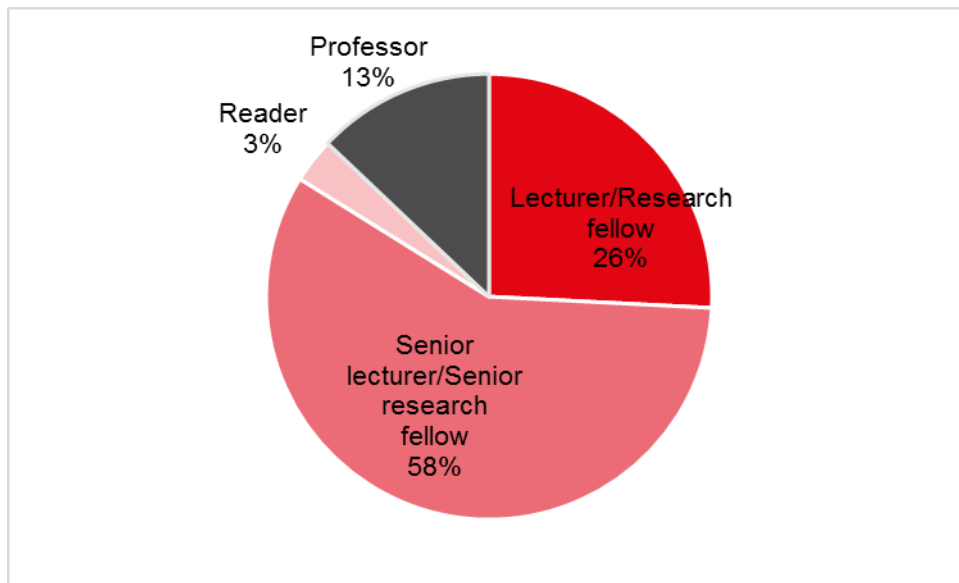
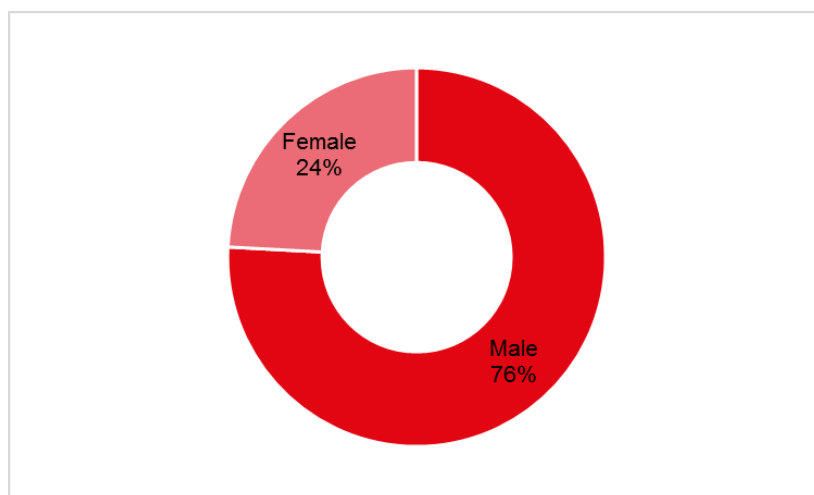


Figure 2.11 illustrates the spread by job title of academics that engaged with KEEN. The largest category of academics involved in the KEEN programme is at the Senior Lecturer/Senior research fellow level. Only 26% of those involved were at the Lecturer/Research fellow level. The senior level academics (ie Professor and Reader) only account for 16% of those who engaged in the KEEN programme. Interestingly, 76% of academics involved in KEEN are male.

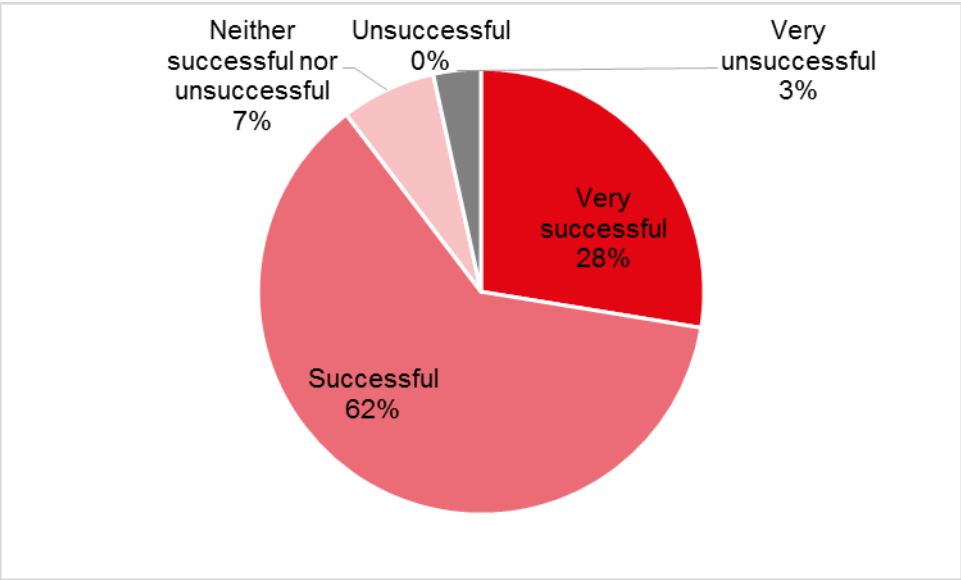
Figure 2.12 Gender distributions for academics



2.2.2 Overall success

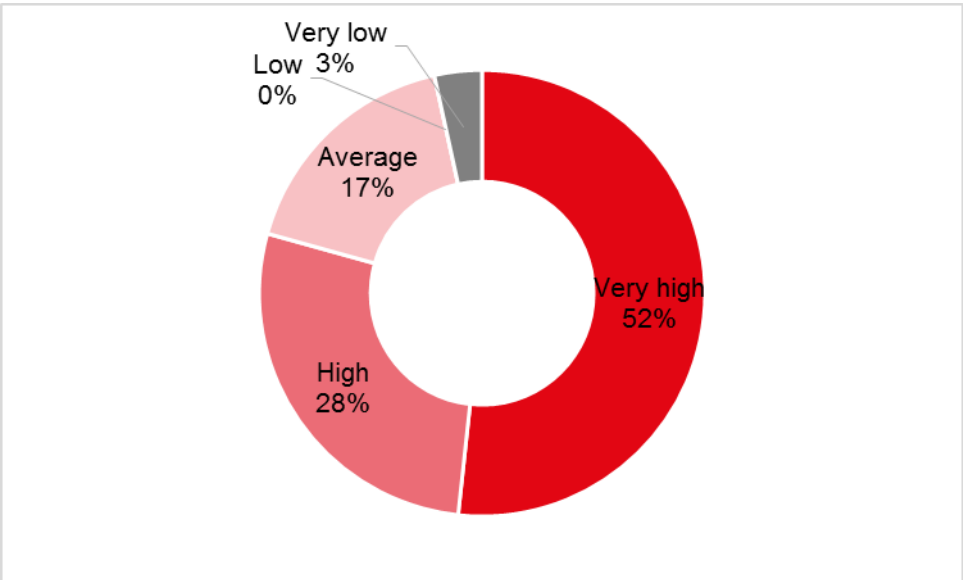
The academics who were involved in the KEEN programme recognised it to be rewarding, as 90% of academics perceived the programme to have been successful; 28% acknowledged it as very successful. Only 2% of academics perceived it as very unsuccessful (See Figure 2.13).

Figure 2.13 Overall success of the KEEN programme (Academic perspective)



80% of academics are highly likely to engage in a KEEN programme in the future. It is really interesting to see that more than 50% of academics are very keen to engage in a KEEN programme again, showing that important benefits are gained, as discussed in earlier sections. Only 3% of academics are not likely to engage in the programme again.

Figure 2.14 Likelihood of academics engaging in a KEEN intervention in the future



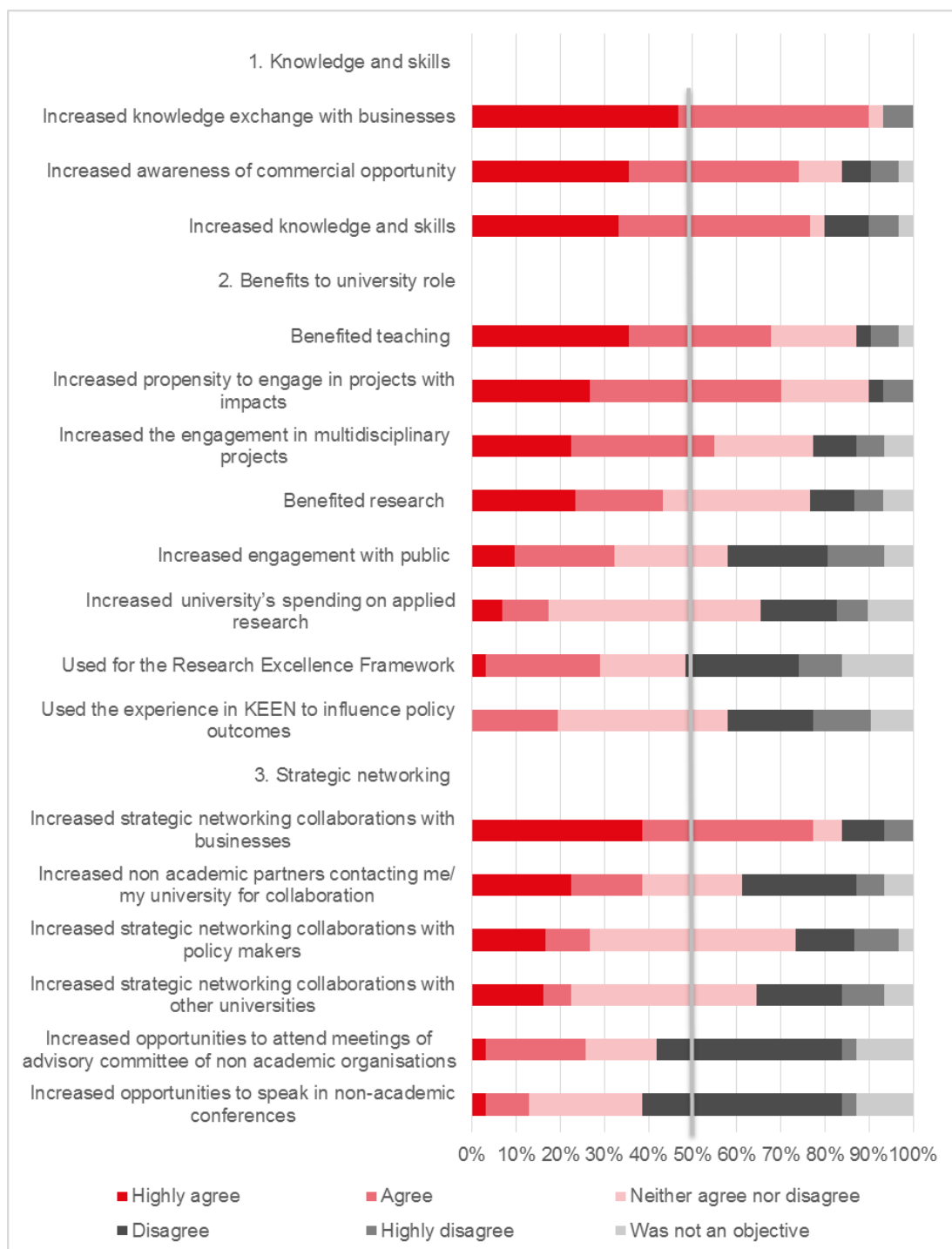
2.2.3 A full collection of benefits

How KEEN helped academics:

- 90% reported an increase in knowledge and skills
- 78% reported benefits to strategic networking
- 70% reported an increase in willingness to participate in commercial projects

Academics have derived the greatest benefits in relation to their knowledge and skills, strategic networking and supporting their university role. This shows that relationships between academics and businesses are fruitful, with more than 60% of academics reporting an increase in their knowledge and skills. Figure 2.15 summarises the benefits gained by the academics who engaged in the KEEN project and forms the basis for the subsequent discussion in this section.

Figure 2.15 Summary of the benefits gained by the academics through engaging with KEEN



There were synergies between KEEN and traditional academic roles

A majority of the academics who engaged in the KEEN project found it beneficial as it increased their knowledge and skills. For them, the programme provides a good opportunity to make links with industry, and helps them develop their knowledge and understanding of a particular industry. More than 70% of academics reported an increase in knowledge exchange with business and also of becoming more aware of commercial opportunities. Academics appreciate the access to businesses, particular in terms of gaining insight into their operations, competition and markets; which informs their research and teaching.

Impact on research

"You don't just consult with that company, you look at the industry they operate in, you look at their competitors, so there's a lot of research that goes into it, which informs my expertise and also can inform my teaching."

Academic involved with KEEN

So academics are able to bring real life examples into class, sharing knowledge on how they can help businesses to solve a problem. On the other hand, their conceptual and theoretical understanding of a particular problem could possibly be implemented in a business.

Students benefiting with real life examples

"I would also say that it allows us to bring things into the classroom. So, looking at what we've been doing with regards to, in this case, digital marketing, bringing this into our digital marketing class."

Academic involved with KEEN

KEEN project helps expand academics' professional and industry networks

Academics found the KEEN programme to have been beneficial as it provides an avenue for them to interact with businesses and their networks, allowing the academics to develop their own professional network outside the university. Some academics see their role as being a mentor to younger managers in helping them to establish their careers, and also to offer a valuable perspective on what they can do to move ahead and take their professional development to the next level. This then helps academics to build relationships that will be mutually beneficial.

Professional network outside university

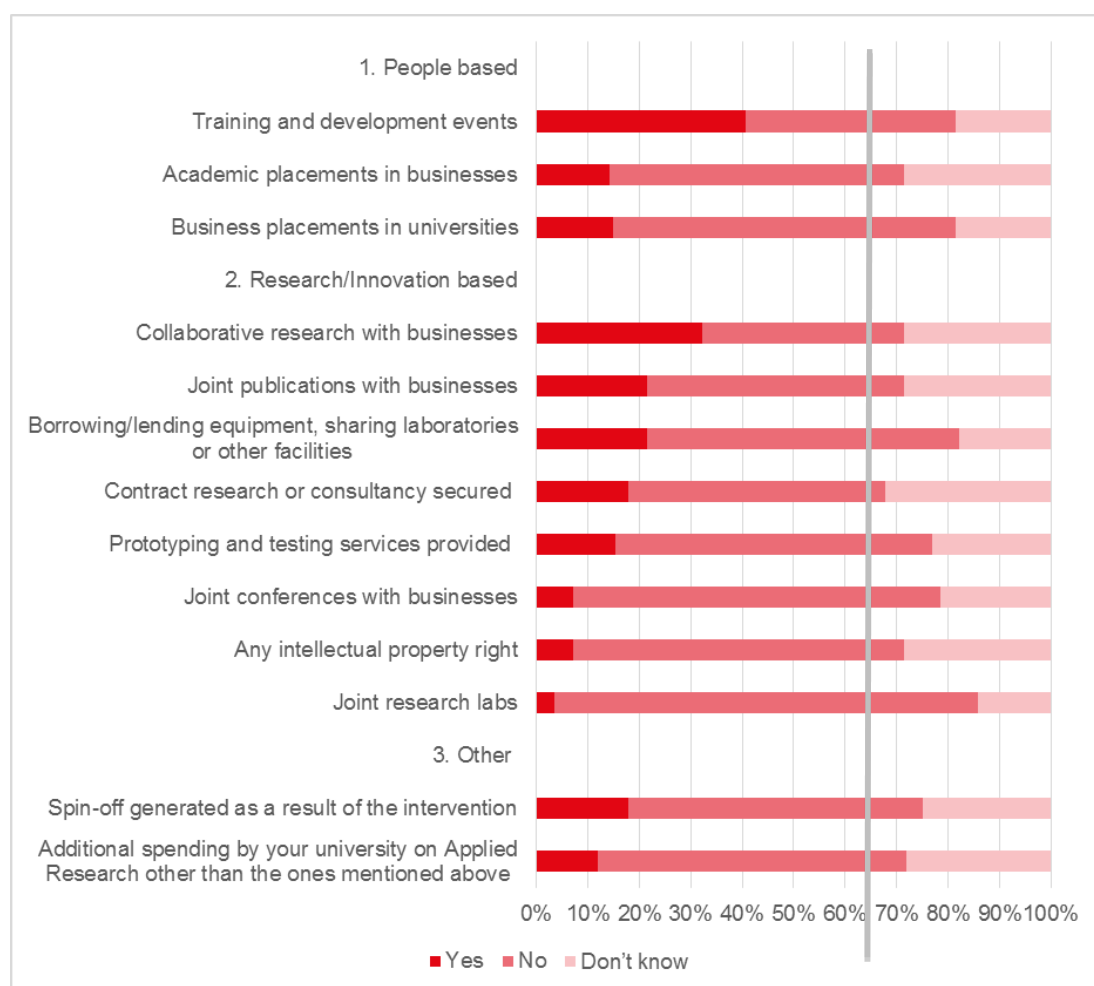
"It gives us a chance to keep in contact with industry and look at what's going on in industry, allows us to develop a professional network outside of the university..."

Academic involved with KEEN

2.2.4 Future value

This section highlights the future value the KEEN programme generates for academics. The majority of the future value arises from three themes – people based, research based activities and other activities, such as spin-offs. 40% of academics rated training and development as one of the major benefits beyond the KEEN project, and a limited number, just 13% of academics expected to carry on engaging in research and innovation activities with businesses.

Figure 2.16 Future value to university arising from KEEN



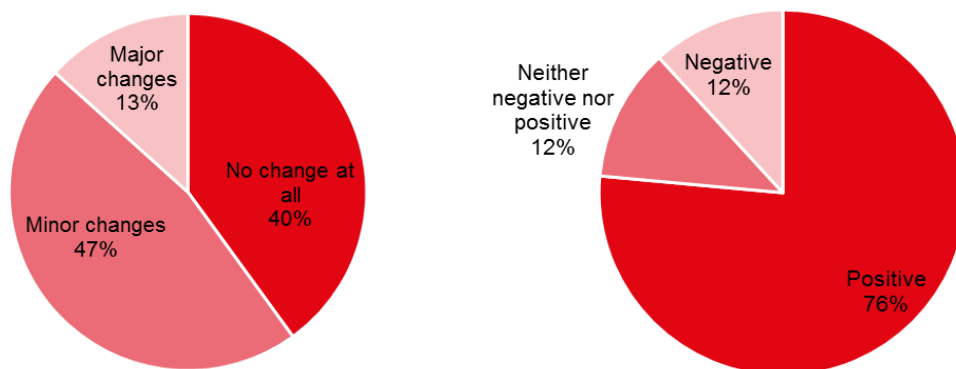
Academics value the long-term strategic partnerships with industry which focus on research collaboration and joint papers etc. They are also interested in collaboration around societal objectives. Academics who engage in a KEEN programme build valuable connections with industry. The KEEN programme clearly provides a stepping stone for this to happen, by providing an avenue for academics to reach out to others (for example, co-workers in business and related groups in the community) to gain ideas and inspiration for their research and teaching. More importantly, the KEEN programme acts as a platform for operational partners

to develop ties that could lead to a strategic partnership in the near future.

2.2.5 Re-evaluation of project KEEN

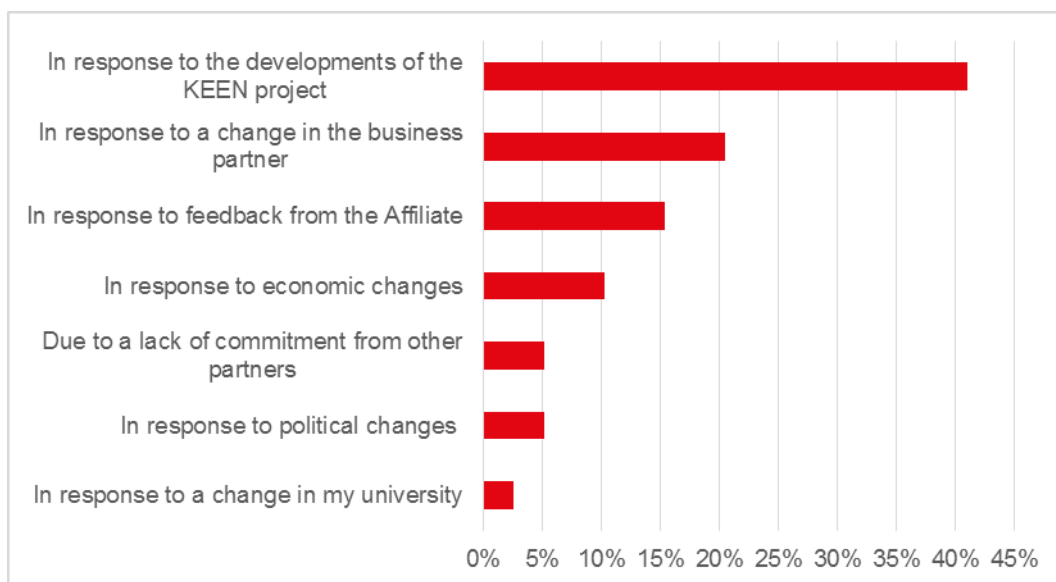
The process of re-evaluating the project objective has been found to be positive by 76% of academics. 60% of academics experienced changes to their original project objectives over the course of the programme (13% of these were major changes).

Figure 2.17 Percentage of changes in original objective and the impact



It seems from the evidence shown in Figure 2.18 that changes were made to project objectives for several reasons. More than 40% of academics feel the re-evaluation was necessary in response to the development of the KEEN project. Re-evaluating the project objective a few months after the project has started provides insights into the current situation and helps ensure the project will be completed. Around 20% of academics changed their objectives in response to request by the business partner, while around 15% of academics re-evaluated the project objectives due to feedback from the graduate. The university plays a very limited role in terms of influencing the re-evaluation of KEEN project objectives, with only 3% of changes arising from university requests.

Figure 2.18 Reason for re-evaluation of project objectives

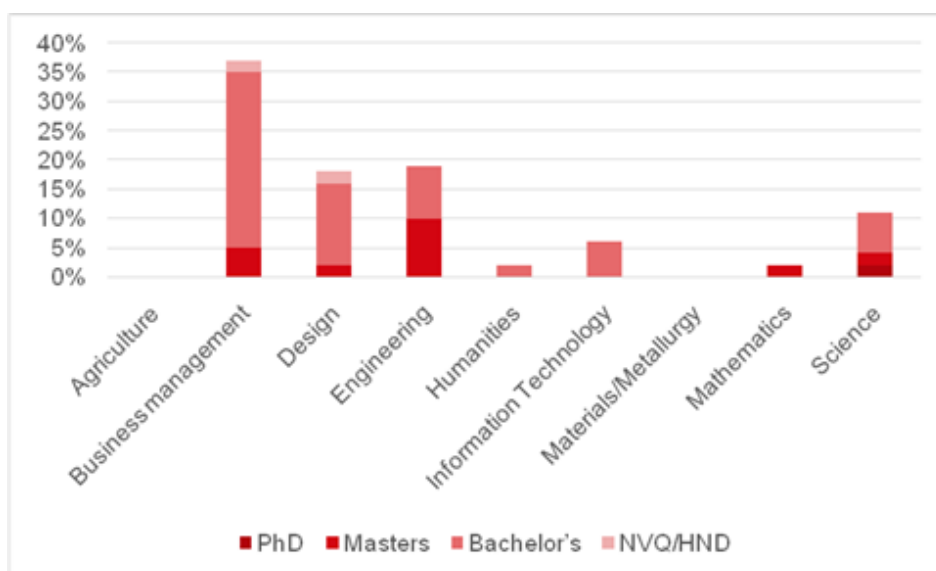


2.3 KEEN as graduate employer

2.3.1 Characteristics of graduates involved

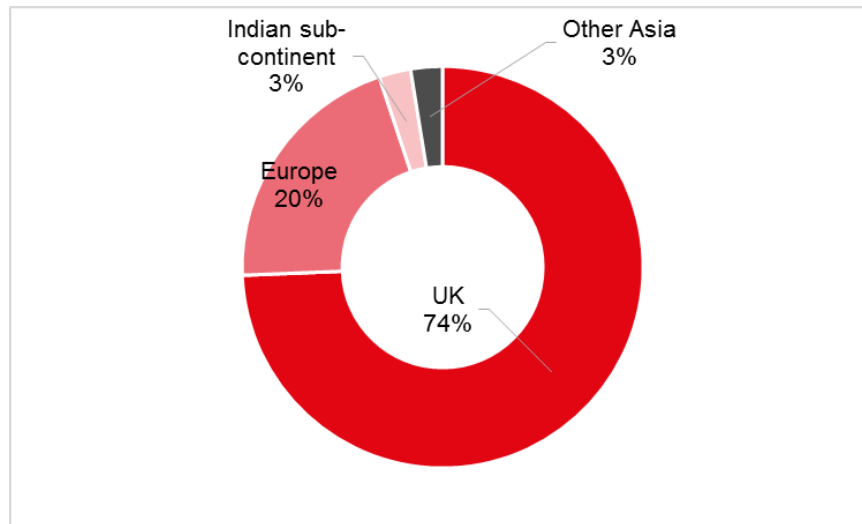
The following Figure provides a current breakdown of the KEEN graduates by qualification level. The majority of the graduates have a degree, particularly in business management (37%), engineering (19%) and design (18%). There is a higher proportion of science graduates involved in the KEEN programme, (around 12%) compared to cKTP. Interestingly, 22% hold a master's degree and only 2% hold a PhD.

Figure 2.19 Qualification of graduates



74% of the graduates that were involved in KEEN have UK nationality, with only 20% from other European countries. KEEN also recruited foreign graduates, with 6% of them coming from the Indian Sub-continent and other Asian countries.

Figure 2.20 Graduate's nationality at the time of KEEN



The result from the survey shows that 57% of the graduates involved in the KEEN programme are male. But there is also a high number of female graduates participating in the KEEN programme (43%). This shows a more balanced distribution than in the cKTP programme. 61% of the graduates who participated in the KEEN programme were 20–25 years old, while 25% were 25–30 years old. There were some participating graduates whose age was beyond the normal ranges, with 11% of them aged 35 years and above. Graduates can be seen to capitalise on the KEEN programme to help them secure a job, particularly mature graduates, perhaps as a career change.

Figure 2.21 Graduate's gender

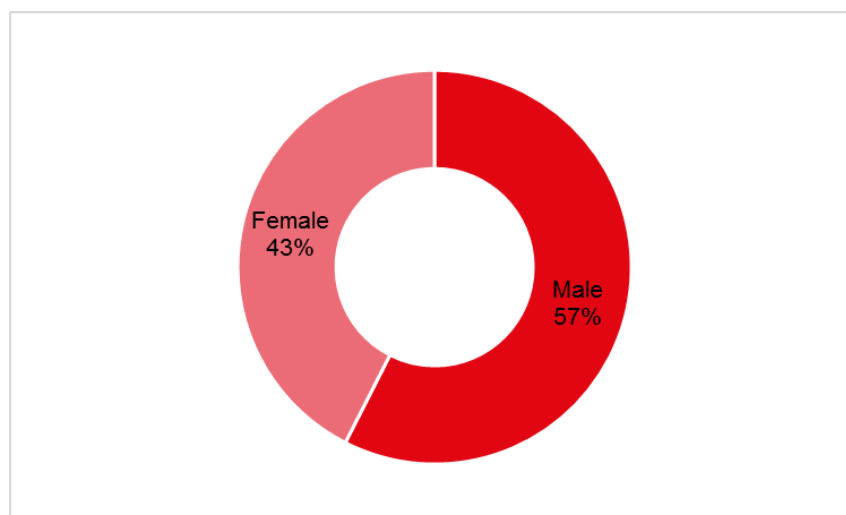
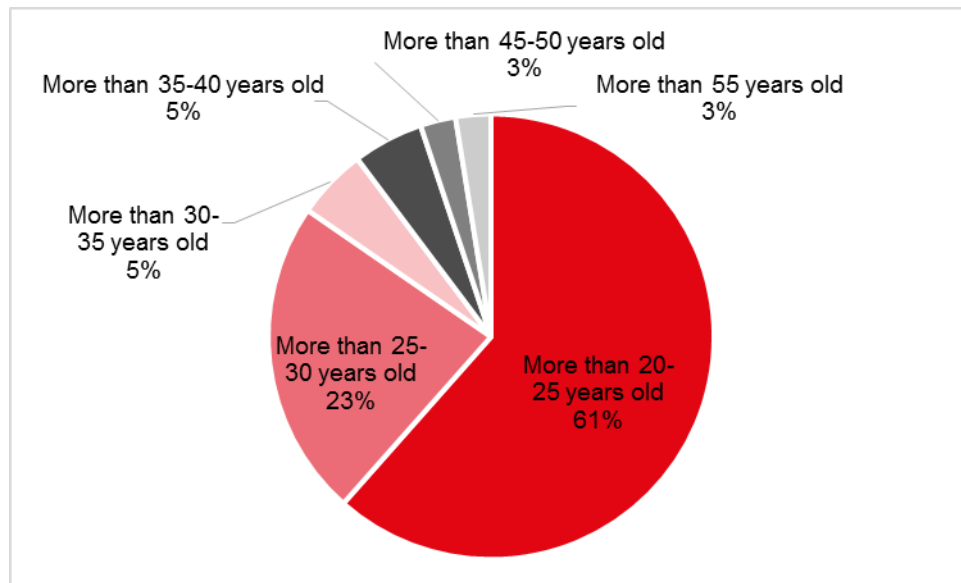


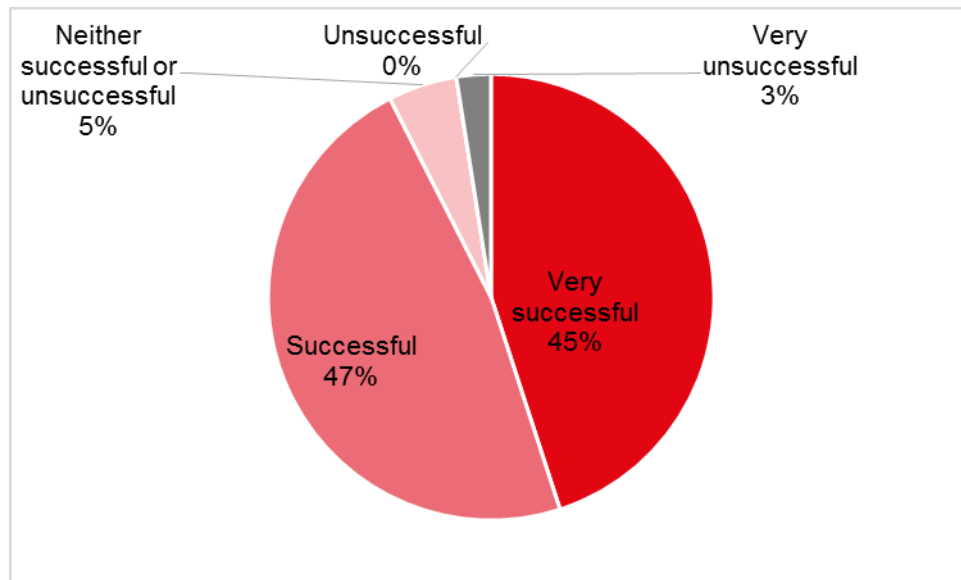
Figure 2.22. Graduate's age



2.3.2 Overall success

The KEEN programme has been very rewarding for the graduates. 45% of graduates perceived the programme to have been very successful, and a further 47% perceived it as successful. There are only 3% of graduates who felt the programme to have been very unsuccessful.

Figure 2.23 Overall success of the programme (Graduate's perspective)



2.3.3 A full range of new skills

The current job market is challenging, and the KEEN programme equips graduates with the kind of insights and experience to adapt to the type of workplace skills needed nowadays.

Around 40% of graduates acquired product development and design skills, around 35% of graduates acquired research and development skills and around 33% of graduates acquired sales and marketing skills.

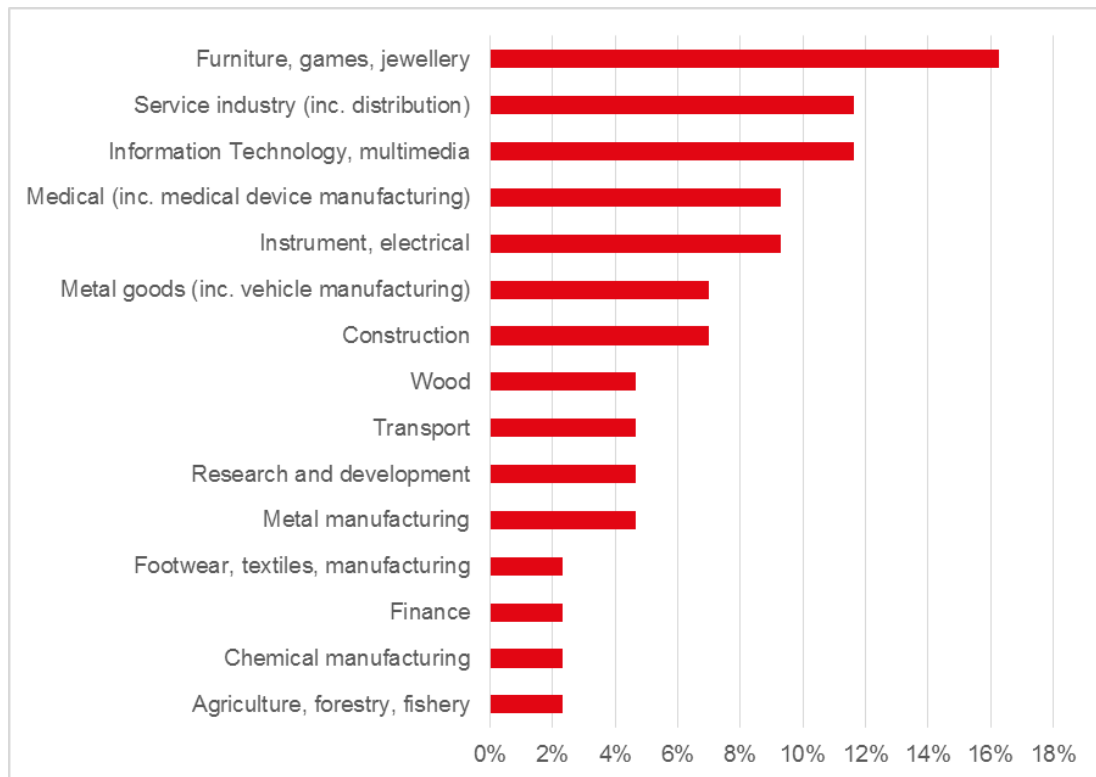
Figure 2.24. A reflection of types of skills graduates acquired through KEEN



As previously mentioned, around 11% of graduates involved in KEEN can be classified as mature graduates. The KEEN programme enabled mature individuals to kick-start their career change and development by increasing their knowledge and understanding of business and also the local industry.

Analysis of the business sectors where graduates were based reveals those which best enabled them to develop their talent during the KEEN project. Interestingly, most graduates developed their skill set in the furniture, games and jewellery sector (around 16%), whilst only 11% did so in the service industries (including distribution). Information technology and multimedia likewise accounted for 11% of the participating businesses.

Figure 2.25 Different sectors graduates were based in



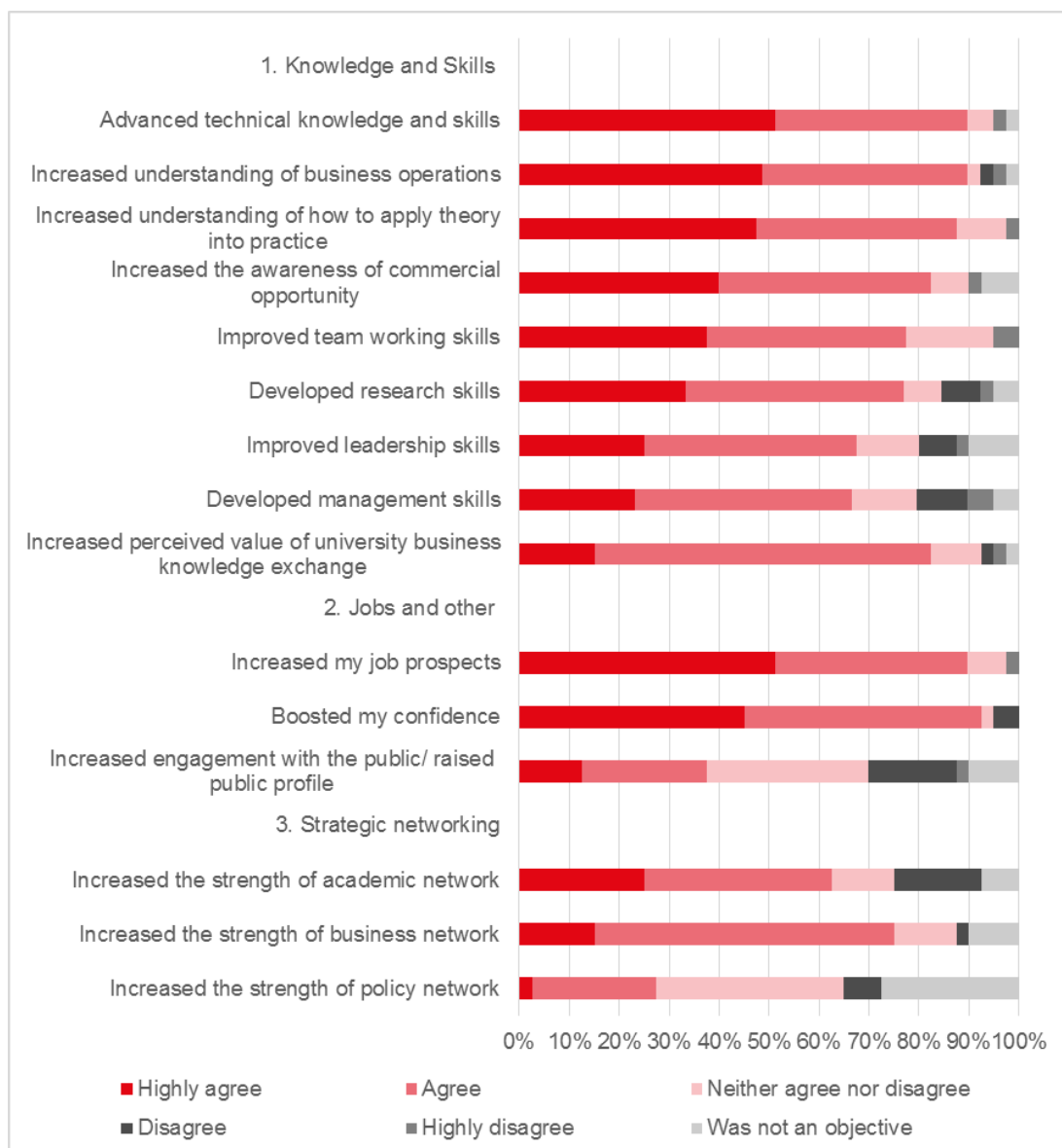
2.3.4 Job prospects, new talent into the region, and a whole range of benefits

How KEEN helped graduates:

- 90% reported an increase in their job prospects
- 90% reported receiving or will receive a job offer from the KEEN company
- an average salary of £22,058 after completing KEEN

Graduates benefit from KEEN through personal development. 90% of graduates reported an increase in their knowledge and skills and in their understanding of business operations respectively. 90% of graduates also agree that KEEN improves their job prospects by improving their knowledge and skills and also boosting their confidence. Graduates also benefited through increasing the strength of their professional network, particularly their business network. Figure 2.26 highlights the list of benefits gained by the graduates.

Figure 2.26 Benefit of KEEN to graduates



The involvement of the graduates in the collaborative KEEN programme provides them with opportunities to gain a variety of experience in a commercial environment. 90% of graduates believed that their job prospects increased after their involvement in the KEEN programme.

KEEN not only opened up employment opportunities but also attracted talent into the region.

Figure 2.27 highlights that around 90% of graduates involved with the KEEN programme either received a job offer from the business they were attached to during the KEEN project or expect to receive one after the project completion. 20% of graduates expect to find a job elsewhere, and 10% of KEEN graduates actually received an offer from other businesses. The businesses that are successful with their KEEN project usually move forward and grow and start recruiting more people. And if the businesses are recruiting, it also means there is the possibility that

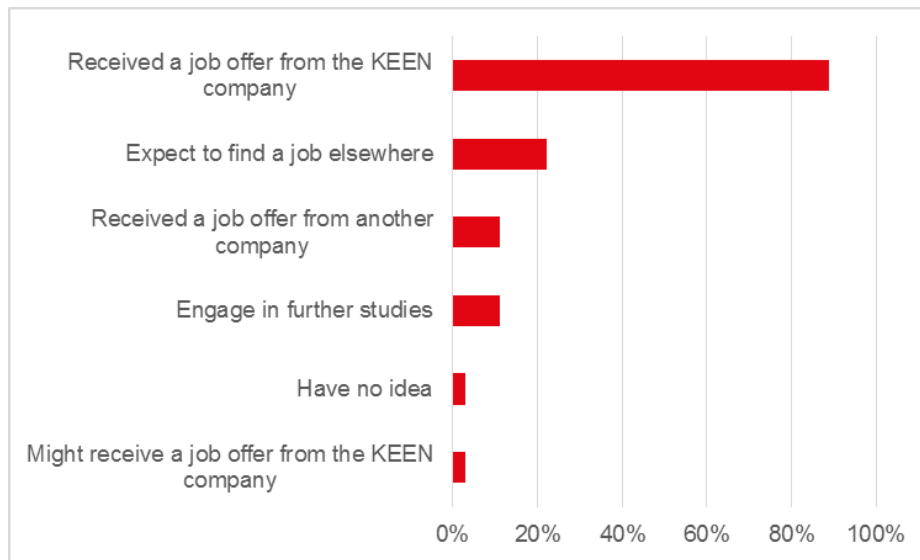
they will attract more talent into the region. In fact, around 15% graduates have moved from a different region to the West Midlands for the KEEN.

Career development opportunities

“the project is an extremely good one and without it, ... I don’t know what would have happened, as maybe my development would have been a lot slower, so I feel now with regards to the project, it feels it definitely needs to carry on for graduates such as myself that are looking for opportunities coming out of university but don’t have experience to speak of, but have a lot of potential.”

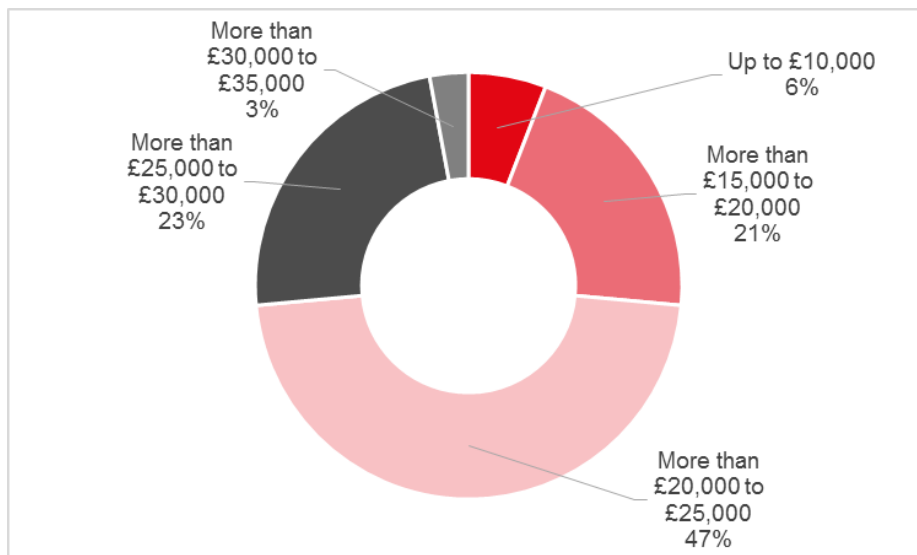
Graduate involved with KEEN

Figure 2.27 Increasing job prospects



The job creation aspect in the region is good, with 78% of graduates recruited by a company based in the West Midlands and only 22% who haven't secured a job yet. 89% of those who found a job after KEEN are in the West Midlands. This highlights the contribution of the programme to the region. 22% enrolled to complete a higher degree while engaging in KEEN, so this also highlights the positive career development for the graduates beyond the project.

Figure 2.28 Graduates' salary distribution after completion of KEEN



The KEEN programme provides a stepping stone for the graduates to not only develop themselves and increase their individual competitiveness but also increase their standard of living. On average the annual salary of the graduate after completing KEEN is £22,058. 15% of graduates involved with KEEN have moved from a different region to the West Midlands while the majority of the graduates (85%) were from the West Midlands.

2.4 KEEN Impact

As a result of the KEEN programme in the region, businesses which participated in the programme have benefited from a **£25,761 increase** in their annual profit, with over 87% of businesses having created or intending to create jobs for the region.

Overall, the KEEN programme helps to:

- Open up employment opportunities in the region
- Attract mature graduates as the programme provides a platform to change their career path
- Increase jobs and attract talent to the region

42% of **businesses** found the programme to be very successful and 47% of them found it to be successful.

- The dedicated development time helps businesses to excel further
- The programme enables them to have a new perspective on how to run their business
- It helps businesses to be more competitive

28% of **academics** found the programme to be very successful, and 90% of them found it to be successful

- KEEN projects rejuvenate academics' expertise
- They develop a new professional network

45% of **graduates** found the programme to be very successful, and 47% of them found it to be successful

- Career development opportunities
- Better job prospects
- Increased confidence level

3. Ways to build the programme further

The progression from cKTP to KEEN brings significant impact for businesses, academics and graduates. The two programmes complement, rather than compete with, each other and naturally have a shared aim: to support knowledge exchange between university and industry whilst at the same time providing an opportunity for graduates to kick-start their careers.

Overall satisfaction for both programmes is high but could be higher (particularly for KEEN). The majority of stakeholders, which includes 67.4% of businesses and 58.1% of academics, believed that cKTP programmes could be improved. On a similar note, those involved in KEEN acknowledged that the programme was really beneficial for them with some areas for improvement.

For all the stakeholders in both programmes, the opportunity given is great, but improvement beyond KEEN needs to focus on key areas:

- Improved operational processes
- Improved support mechanisms and training provision beyond graduates
- Improved selection criteria
- Improved awareness mechanisms
- Make clear to all parties that collaboration requires a different mindset

There are a number of areas that generate frustration among partners, principally relating to the efficiency of the programme.

Improved operational processes being put in place for the project

Businesses feel the administrative process involved was too bureaucratic in claiming the cost back, especially for KEEN. There are several instances where businesses avoid advancing expenses for graduates because of the long process of claiming the money back. This also means that graduates lost the opportunity to improve themselves through training and the funds allocated for the project were not fully utilised. Particularly for small businesses, adhering to deadlines and filing monthly claims requires extra administrative support. There is a need to reduce bureaucracy through upfront approval of expenses, particularly for training and expenses for graduates. Another possibility for tackling the bureaucracy in the claim process is to set a threshold below which expenses can proceed with just the business manager's approval.

Degree of bureaucracy

"One of the biggest criticisms facing the KTP, expressed in the main by the businesses engaged with the project, is the degree of bureaucracy attached to the running of the programme and the lack of appreciation by the Central Office of the needs of small businesses, particularly when it comes to the adherence to deadlines and the impact these can have on the commercial operations of the company. Whilst it is acknowledged that a degree of accountability needs to be built into the operation of the KTP project, it needs to appreciate that many of the organisations engaged with the programme are relatively small and are often dependent on their senior management team to maintain the effective operation of their businesses. To expect an organisation to focus on objectives that are driven purely by the needs of the public sector, and that are often at odds with those of the partner organisation, goes some way to undoing the commercial benefits gained through the programme and can, in some cases, undermine the working relationships developed."

Business involved with cKTP

Recommendation: Ensure that the guidelines simplify the process and make participants aware of these.

The duration of the KEEN programme (12 months) is too short for the graduates either to significantly contribute to the organisation, or to clearly see immediate impact. This is because the graduates need time to develop competence in their new roles and by the time they have become effective, the project may be close to its end. Those who are involved in a project of longer than 12 months found that the impact is not immediate, and the most important and interesting outcomes happen after the project ends. Perhaps it is best if there is a mechanism to capture those impacts after the project ends.

Recommendation: Offer official post-project support to help create a sustainable progression from one type of university–industry collaboration to another.

Updated selection criteria for businesses and academics

Having dedicated resources to support the three-way partnership is really important and micro businesses which participated in the KEEN programme found it challenging to provide that. This is because a two-person business may not be able to dedicate time to mentoring the graduate, as they are busy with the normal

Mismatch between the objectives of stakeholders

"Sometimes there are mismatches between the objectives. Hence, it is important to align these."

Business involved with cKTP

Length of project

"Because the learning curve that the associate has to go through is very steep and you find three or four months have gone by and that they're only just starting to find their feet and they then start to get on with whatever the major parts are that they have to deal with. But then the project comes to an end. So there's an issue about the length that the person is employed as an associate for."

Business involved with KEEN

day-to-day challenges. It is imperative to ensure that those businesses which are selected to participate are able to dedicate a set amount of time to meetings and discussions, but also for mentoring the graduates.

For the cKTP programme, even businesses believe that the current focus for cKTP on high tech areas is far too narrow for the needs of the small business community. For them, there are various innovative projects that may not be challenging to big organisations, but are very challenging for small businesses wanting to grow.

Recommendation:

Focus on businesses that need help to grow, with a capacity to put aside time and resources to support graduates. For micro-businesses, extra support may be required to ensure the business is able to dedicate enough time and resources to the project.

Widen the support mechanism and training provision beyond graduates

Provide clear rules of engagement

"The weaknesses of the project: I think it is not established how the partnership or three-way partnership should work, so it's very much kind of defined that the university... that the lead involved from the university should be in contact with the affiliate, but it's very important to have similar contact with the manager to make sure that what is happening is in line with their strategy. Otherwise this could cause problems if you're working on something with somebody who's lower down in the hierarchy of the company but is making some decisions."

Academic involved with KEEN

Another important point related to the development of the graduates is the timing of the training courses. From the perspective of the businesses engaged with cKTP, there were various training courses that were not really relevant for the graduates, as these did not relate directly to the demands of the business or the project. Businesses feel that there should be some alignment between what the graduate is being trained for and how this would benefit the organisation, since they are also investing through engagement in the project. More importantly, there should also be alignment between partners on what they really want from the project prior to the start. Indeed, crafting a proposition that appeals to each of the key partners is important; academics must understand the business needs, and vice versa.

Recommendation:

Tailor graduate training to the educational level of each graduate and the type of project, particularly since each project is bespoke.

To provide post-project support

"There is no provision in the scheme itself for post-project support of the company by the knowledge partner. This is especially relevant when the Associate is employed by the company to continue the work initiated by the scheme. Phasing out the support, rather than a sudden cessation, would be helpful here."

Business involved with cKTP

Types of training course for graduates

"So, I feel that there needs to be greater sensitivity to what professional courses the affiliate [graduate] can go on. Because ultimately, I feel that would have benefited me most if I'd been able to go on the course."

Graduate involved with KEEN

Representing a knowledge-base provider, academics play an important role as mentors. Business managers found that they did not receive enough support to undertake the project effectively. The lack of support for the senior business individual, particularly in small and micro businesses, presents a challenge in terms of the project achieving real impact within and outside the organisation. Hence, they suggested that rather than merely having support and mentoring for the graduate in the project, managers in the businesses, particularly small businesses, should also have the opportunity to be mentored by the academics. The roles and responsibilities of each of the partners should be made clear to ensure that all partners support each other, rather than focusing only on the graduates. The three-way partnership will only have a bigger impact if all partners collaborate to co-create together, and this can only happen if each partner feels supported.

Recommendation:

Be clear about the roles and responsibilities of each of the partners, and ensure that all partners support each other, rather than focusing only on the graduates.

Manage or plan for a partner support group and draw expertise from different fields; and allow senior academics to mentor junior academics in order to have a bigger pool of academics undertaking knowledge transfer.

Provide training to academics

“And I think certainly my experience here is that much less care and time and thought was put in to selecting the academic who would work on the project in comparison with selecting the associate who would do the work. And I think there ought to be more thought and perhaps more checks and balances as to who actually does get to act as the academic mentor in things.”

University knowledge transfer manager

Nevertheless, businesses found that some suggestions and advice from academics were too theoretical and were not easily adapted to small business operations. Running a small organisation is very different to managing a large corporation. There were instances where academics made suggestions that may be useful for large corporations but have little value for small businesses. The pool of academic participants should be widened, and academics should also be trained so that they are well equipped to engage with businesses of different sizes. Hence, rather than having all the training focused on the graduates, training should also be allocated to academics. This should include how to communicate and engage with small businesses prior to start of the project. Academics will then also be able to increase their skillsets in relation to business communication and engagement.

Recommendation:

Include training for academics on how to communicate and engage with businesses prior to the start of the project.

Effective awareness mechanism

One of the challenges for both of the programmes is related to the recruitment of graduates with appropriate skills and knowledge. It seems that it took the partners a long time to recruit a suitable candidate. This often delayed the start of the project and proved to be one of the most important challenges that needs to be addressed. Both programmes need to relook at how the programme is perceived by graduates and to invest in a campaign to increase public awareness of the programme. This should help to influence graduates' decision on whether to participate. The programme websites should be used to not only market the programme, but also to provide databases and information on projects for reference as case studies.

Recommendations:

Have a public awareness campaign, as it will then increase the number and quality of graduates applying for the graduate role.

Use the websites not only to market the programme, but also to provide databases and information on projects for reference as case studies.

Another way to address the challenge of recruiting graduates with appropriate skills and knowledge is to develop a proper strategy for recruitment. At the moment all recruitment is done ad-hoc (ie once the project has been approved and initiated). This can make the process lengthy and makes success dependent on how the vacancy is advertised. Perhaps the recruitment process should start earlier, by partnering with the Careers Service and also course leaders to make final year students aware of the programme during their course. Having a list of interested students may support a targeted approach to marketing the projects. Advertising the programme prior to the approval of any projects would create awareness and raise the profile of KEEN. Our findings also showed that graduates recruited for the programme came from other regions. Hence, greater advertising beyond the region may help to increase the pool of potential applicants.

Recommendations:

Have a proper strategy for graduate recruitment for both programmes.

Have a partnership with the Careers Service and create a list of final year students who are interested in joining the programme.

Understand the timing of the academic year and advertise the programme at the right time, ie during the last semester of each academic year, so as to attract students while they are in the final semester/year of study, and work together with course leaders to promote the associate posts.

In short, selecting the people to be involved on all sides and making sure that everyone involved has the right skill-set and mind-set is what will ensure they make the most of the opportunity. Our findings on the ability of universities and businesses to successfully engage in the three-way partnership which also involves graduates potentially supports the recommendations from the Wilson Review (2012): universities should not only diversify business interactions but also develop longer-term relationships and strategic partnerships. More importantly, universities should develop strategies for how to turn single interactions with businesses into long-term relationships, and the cKTP and KEEN provide an avenue for that.

Challenges and lessons learnt

1. Operational process

Businesses feel the administrative process involved in claiming the cost back was too bureaucratic, especially for KEEN

- Some businesses avoid advancing expenses to graduates because of the lengthy process for claiming the money back

The duration of the KEEN programme (12 months) is too short for the graduates either to significantly contribute to the organisation, or to clearly see immediate impact.

Some outputs of the project could not be implemented effectively after the completion of the project.

2. Selection criteria

Businesses (it was particularly micro businesses which participated in the KEEN programme) found it challenging to put aside resources to participate in the programme.

- The size of the business chosen for the programme does matter. Those who benefited the least are micro businesses (for example businesses with 2 people, with limited resources).

The current focus for cKTP on high tech areas is far too narrow for the needs of the small business community.

Businesses found that some suggestions and advice from the academics were too theoretical and not suitably adapted to small business operations.

3. Support mechanism and training provision beyond graduates

There was a lack of support to the senior business individual, rather than just the graduates in the project, particularly for small and micro businesses.

For cKTP, the training for the graduate is inflexible, and is very generic in nature, so does not help support the project.

4. Awareness mechanism

It is a challenge to recruit graduates with appropriate skills and knowledge

- The lack of awareness of and promotion for both programmes may be one of the reasons.

The KTP portal requires attention, as it is not well designed, and does not capture the correct information. The KEEN portal has similar challenges.

Suggestions for improvement

1. Operational process

Improve the operational processes for the project:

- Reduce bureaucracy through upfront approval of expenses, particularly for training and expenses for graduates;
- Set a threshold below which a business manager can approve a claim.

Increase the duration of any new programme beyond 12 months for each project.

Implement an effective evaluation mechanism beyond the duration of the project to capture the impact of the project.

Introduce and formalise post-project support to ensure project outputs and outcomes are implemented and to encourage businesses to consider the next step.

Identify higher impact vs low impact partnerships:

- Encourage continuation of the engagement and suggest different types of feedback mechanisms after the project has ended.

Strike a balance between targeting repeat businesses vs new businesses into the programme:

- Repeat businesses may reduce support costs, and new engagements may broaden impact.

2. Selection criteria

Align objectives and needs from all partners for the projects:

- Crafting a proposition that appeals to each of your key partners is important, and academics must understand the business need.

Focus on businesses that need help to grow, with a capacity to put aside time and resources to support graduates.

Focus beyond innovation and impact as criteria for approval, as many small businesses require help to grow and a project which may be challenging to one business may not be to another.

Invest in training academics to understand how to engage with businesses.

3. Widen the support mechanism and training beyond graduates

Develop more effective training focused on the specific needs of the graduate:

- Graduate training should be tailored to the education level of the graduate and the type of project, as each project is bespoke.

Be clear about the roles and responsibilities of each partner, and ensure that all partners support each other, rather than focusing only on the graduates.

Include training for academics on how to communicate and engage with businesses prior to the start of the project.

Manage or plan for a support group for partners and draw expertise from different fields:

- Allow senior academics to mentor junior academics in order to have a bigger pool of academics undertaking knowledge transfer.

4. Effective awareness mechanisms

Improve the number and quality of graduates applying for the graduate role:

- Run a public awareness programme.

Create a more updated website as part of a marketing campaign:

- The website should be used to not only market the programme, but also to provide a database and information on projects for reference as case studies.

Have a proper strategy for graduate recruitment for both programmes:

- Have a partnership with the Careers Service and create a list of final year students interested in joining the programme;
- Understand the timing of the academic year and advertise the programme during the last semester of each academic year to attract students while they are in the final semester/year of study) and work together with course leaders to promote the associate posts.

5. Collaboration requires a different mindset

Develop awareness that the programme is not merely for academics to 'transfer knowledge' to businesses through the graduates, but more of an exchange of knowledge between all parties.

Ensure all parties have a collaborative mindset on top of the required skillset, and understand that each party has to fulfil their role.

4. References

- Engel, D. & Keilbach, M. (2007). Firm Level Implications of Early Stage Venture Capital Investment – An Empirical Investigation. *Journal of Empirical Finance*. 14 (2). pp. 150–167.
- Ettenson, R. & Knowles, J. (2008). Don't Confuse Reputation With Brand. *MIT Sloan Management Review*. 49 (2). pp. 19–21.
- Innovate UK, (2014). Knowledge Transfer Partnerships: Achievements and outcomes 2013 to 2014; available at:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/426670/KTP_Achievements_and_Outcomes__2014_FINAL.pdf [Accessed on 8th September 2015]
- Mindruta, D. (2013). Value creation in university–firm research collaborations: A matching approach, *Management Journal*, 34, pp. 644–665.
- Ternouth, P., Garner, C., Wood, L. and Forbes, P. (2012). Key Attributes for Successful Knowledge Transfer Partnerships, CIHE report, Council for Industry and Higher Education, London, UK.
- Wilson, T. (2012). A review of business–university collaboration. Department for Business Innovation and Skills; available at:
<https://www.gov.uk/government/publications/business-university-collaboration-the-wilson-review> [Accessed on 15th October 2015]
- Wynn, M. and Turner, P. (2013). Effecting successful knowledge transfer: lessons from the UK Knowledge Transfer Partnership scheme, *International Journal in Education*, 7 (3) pp. 293–312.

Appendix 1

The tables divided into Businesses, Academics, and Graduates show the dimensions that are being used in evaluating the impact for both programmes. The first column in all tables lists the questions which participants from businesses, academics and graduates were asked in an online survey, and columns two and three list the variables and how they were measured for the purpose of this evaluation of the cKPT and KEEN programmes.

BUSINESSES

a)

Background information	Variables	Measurement
Sector In which industry sector does your business operate?	<ul style="list-style-type: none"> • Aerospace • Agriculture, forestry, fishery • Bricks, cement, glass • Chemical manufacturing • Construction • Education, administration • Energy, water • Finance • Food, drink, tobacco • Footwear, textiles, manufacturing • Furniture, games, jewellery • Information Technology, multimedia • Instrument, electrical • Medical (inc. medical device manufacturing) • Metal goods (inc. vehicle manufacturing) • Metal manufacturing • Plastics, paper, printing industries • Professional members organisations • Publishing, media, sport • Research and development • Service industry (inc. distribution) • Sustainability • Transport • Wood • Other 	Select from dropdown list
Age When was your business established?	Year	Year
Size	Number of employees	Number

<p>Programme involvement</p> <p>Which business department(s) of your organisation did you involve in cKTP?</p> <p>Which business department(s) of your organisation did you involve in KEEN?</p>	<ul style="list-style-type: none"> • Business management • Finance • Human resources • Information and communications technology • Logistics and distribution • Manufacturing process and operations • Business operations • Product development and design • Research and development • Sales and marketing • Supply chain 	<p>Tick boxes as appropriate</p>
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b)

Benefits from programme	Variables	Measurement
<p>Strategic networking</p> <p>Please select the extent to which you/ your business received (or ANTICIPATES to receive) the following intangible benefits from the project?</p>	<ul style="list-style-type: none"> • Enabled me/ my organisation to develop useful strategic networks with academic organisations • Increased my / my organisation's propensity to contact academic organisations for collaboration • Enabled me/ my organisation to develop useful strategic networks and collaborate with other businesses • Increased my/ my organisation's willingness to hire high skilled human resources (e.g. graduates) 	<p>Tick boxes:</p> <ul style="list-style-type: none"> ○ Highly disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Highly agree ○ Was not an objective
<p>Research based</p> <p>Please select the extent to which you/ your business received (or ANTICIPATES to receive) the following intangible benefits from the project?</p>	<ul style="list-style-type: none"> • Increased the engagement in multidisciplinary projects by me/ my organisation • Increased my organisation's spending on R&D • Increased the access/ability to use best inventions 	<p>Tick boxes:</p> <ul style="list-style-type: none"> ○ Highly disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Highly agree ○ Was not an objective
<p>Competitive positioning</p> <p>Please select the extent to which you/ your business received (or ANTICIPATES to receive) the following intangible benefits from the project?</p>	<ul style="list-style-type: none"> • Increased professional/ brand recognition of my organisation • Increased signalling of my organisation's competitiveness to the market • Increased market share of my organisation 	<p>Tick boxes:</p> <ul style="list-style-type: none"> ○ Highly disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Highly agree ○ Was not an objective
<p>Financial benefits</p> <p>Please select the extent to which you/ your business</p>	<ul style="list-style-type: none"> • Improved my organisation's access to finance • Helped to scale up/ grow my 	<p>Tick boxes:</p> <ul style="list-style-type: none"> ○ Highly disagree ○ Disagree

received (or ANTICIPATES to receive) the following intangible benefits from the project?	<ul style="list-style-type: none"> organisation Helped to cut costs 	<ul style="list-style-type: none"> Neither Agree nor Disagree Agree Highly agree Was not an objective
Social benefits Please select the extent to which you/ your business received (or ANTICIPATES to receive) the following intangible benefits from the project?	<ul style="list-style-type: none"> Increased the propensity of me/ my organisation to engage in/ contribute to university teaching (e.g. guest lectures, supervising students) Increased me/ my organisation's engagement with the general public (e.g. giving talks, free advice, delivering social benefits) Influenced policy outcomes 	Tick boxes: <ul style="list-style-type: none"> Highly disagree Disagree Neither Agree nor Disagree Agree Highly agree Was not an objective
Product/service and market innovation Please select the extent to which you/ your business received (or ANTICIPATES to receive) the following intangible benefits from the project?	<ul style="list-style-type: none"> Produced new markets for existing products/services Produced new products/services in existing markets Produced new products/services in new markets Improved the quality of existing products/services Improved business operations/process 	Tick boxes: <ul style="list-style-type: none"> Highly disagree Disagree Neither Agree nor Disagree Agree Highly agree Was not an objective

c)

Future Value Arising from the programme	Variables	Measurement
Research and Innovation Please indicate whether your organisation engages in (or EXPECTS to engage in) any of the following additional activities as a result of your involvement in the project.	<ul style="list-style-type: none"> Collaborative research with universities and/or other businesses Contract research or consultancy opportunities secured by your company Contract research or consultancy for which you hire universities/other businesses Prototyping and testing services for which you hire universities/other businesses Any intellectual property right – anticipated/applied/granted (e.g. patent, design right, copyright etc.) directly or indirectly from programme Joint conferences with universities and/or other businesses Publications arising from KEEN 	Selection: <ul style="list-style-type: none"> Yes/No Number Value/Revenue generated (£) (PROJECTED, if appropriate) Amount of investment made by company (£) (PROJECTED, if appropriate)

	(published or in progress)	
Physical resource based Please indicate whether your organisation engages in (or EXPECTS to engage in) any of the following additional activities as a result of your involvement in the project.	<ul style="list-style-type: none"> Additional investment in plant and machinery by your organisation Borrowing/lending equipment, sharing laboratories or other facilities Joint research labs 	Selection: <ul style="list-style-type: none"> Yes/No Number Value/Revenue generated (£) (PROJECTED, if appropriate) Amount of investment made by company (£) (PROJECTED, if appropriate)
People based Please indicate whether your organisation engages in (or EXPECTS to engage in) any of the following additional activities as a result of your involvement in the project.	<ul style="list-style-type: none"> Training and development Events Business placements in universities Academic placements in businesses 	Selection: <ul style="list-style-type: none"> Yes/No Number Value/Revenue generated (£) (PROJECTED, if appropriate) Amount of investment made by company (£) (PROJECTED, if appropriate)
Other Please indicate whether your organisation engages in (or EXPECTS to engage in) any of the following additional activities as a result of your involvement in the project.	<ul style="list-style-type: none"> Spin-off generated as a result of the intervention Additional spending by your organisation on Research and Development other than the ones mentioned above 	Selection: <ul style="list-style-type: none"> Yes/No Number Value/Revenue generated (£) (PROJECTED, if appropriate) Amount of investment made by company (£) (PROJECTED, if appropriate)

d)

Business Growth	Variables	Measurement
Has participating in the programme affected (or do you ANTICIPATE it will affect) the financial performance of your business?	<ul style="list-style-type: none"> Has participating in the programme affected (or do you ANTICIPATE it will affect) the financial performance of your business? 	Tick boxes: <ul style="list-style-type: none"> Highly reduced Reduced No difference Improved Highly improved
Please state the revenue of your company before and after the intervention	<ul style="list-style-type: none"> The financial year ending before the start of project The financial year ending during/after the project The financial year ending 3 years after the project (anticipated) 	Tick boxes:
Please state the profit (before tax) of your company before and after the intervention	<ul style="list-style-type: none"> The financial year ending before the start of project The financial year ending during/after the project The financial year ending 3 	Tick boxes:

	years after the project (anticipated)	
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e)

Jobs created	Variables	Measurement
Did you hire (or do you intend to hire) the Affiliate upon the completion of the project?	Hire or intention to hire	YES/NO
How many new jobs has your organisation created (or intends to create) as a result of the KEEN?	Number of Jobs created	Number
What is the average employee salary per annum for the created jobs (if any)?	Average employee salary	Number
Are ALL of the additional investments (e.g. investments on IP, R&D and jobs etc.) made (or intended to be made) by your organisation as a result of the intervention in the West Midlands Region?	Additional investment in your organization as a result of cKTP / KEEN	Yes/No

f)

Expected and Unexpected Changes	Variables	Measurement
Please tick to indicate the extent to which the original plan of the project has changed over the course of the programme?	Changes in the objective	Tick boxes <input type="radio"/> No change at all <input type="radio"/> Minor changes <input type="radio"/> Major changes
If there has been a change please tick appropriately (if required more than once) to indicate why	<ul style="list-style-type: none"> • In response to economic change • In response to a change in my business • In response to a change in the university partner • In response to feedback from KEEN Affiliate • In response to the developments of the KEEN • Due to a lack of commitment from other partners 	Tick boxes
Has the change generated positive or negative outcomes in relation to the final project delivery?	Positive or negative outcome	Tick boxes: <input type="radio"/> Negative <input type="radio"/> Neither negative nor positive <input type="radio"/> Positive

e)

Overall satisfaction	Variables	Measurement
How successful was the	Level of success	Tick boxes:

intervention?		<input type="radio"/> Very unsuccessful <input type="radio"/> Unsuccessful <input type="radio"/> Neither successful nor unsuccessful <input type="radio"/> Successful <input type="radio"/> Very successful
Likelihood of engaging in the project intervention in the future	Likelihood of future engagement	Tick boxes: <input type="radio"/> Very low <input type="radio"/> Low <input type="radio"/> Average <input type="radio"/> High <input type="radio"/> Very high

ACADEMICS

a)

Background information	Variables	Measurement
Please tell us about your role at the University.	<ul style="list-style-type: none"> University Department Position 	Select from dropdown list
Please select from the following list the industry sector in which the company operates.	<ul style="list-style-type: none"> Aerospace Agriculture, forestry, fishery Bricks, cement, glass Chemical manufacturing Construction Education, administration Energy, water Finance Food, drink, tobacco Footwear, textiles, manufacturing Furniture, games, jewellery Information Technology, multimedia Instrument, electrical Medical (inc. medical device manufacturing) Metal goods (inc. vehicle manufacturing) Metal manufacturing Plastics, paper, printing industries Professional members organisations Publishing, media, sport Research and development Service industry (inc. distribution) Sustainability Transport Wood 	Select from dropdown list

	<ul style="list-style-type: none"> • Other 	
Please select from the following list the business department in which your Affiliate was employed within the company (Select all that apply).	<ul style="list-style-type: none"> • Business management • Finance • Human resources • Information and communications technology • Logistics and distribution • Manufacturing process and operations • Business operations • Product development and design • Research and development • Sales and marketing • Supply chain 	Tick boxes
Please tell us about yourself	Gender	Female or Male
Please tell us about yourself	Age	Number

b)

Benefits from programme	Variables	Measurement
Knowledge and skills Please select the extent to which you/ your university received (or ANTICIPATES to receive) the following intangible benefits from the project?	<ul style="list-style-type: none"> • Increased my/ my university's knowledge and skills • Increased knowledge exchange between my university and businesses • Increased my/ my university's awareness of commercial opportunity 	Tick boxes: <ul style="list-style-type: none"> ○ Highly disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Highly agree ○ Was not an objective
Strategic networking Please select the extent to which you/ your university received (or ANTICIPATES to receive) the following intangible benefits from the project?	<ul style="list-style-type: none"> • Enabled me/ my university to develop useful strategic networks and/or collaborations with businesses • Enabled me/ my university to develop useful strategic networks and/or collaborations with other universities • Enabled me/ my university to develop useful strategic networks and/or collaborations with policy makers • Increased non-academic partners contacting me/my university for collaboration • Increased opportunities to speak in non-academic • Conferences • Increased opportunities to attend meetings of advisory committee of non-academic organisations 	Tick boxes: <ul style="list-style-type: none"> ○ Highly disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Highly agree ○ Was not an objective
Benefits to university role Please select the extent to which you/ your university	<ul style="list-style-type: none"> • Benefited my teaching (e.g. case studies, new courses and guest lectures) 	Tick boxes: <ul style="list-style-type: none"> ○ Highly disagree ○ Disagree

received (or ANTICIPATES to receive) the following intangible benefits from the project?	<ul style="list-style-type: none"> • Benefited my research (e.g. publications, resources and ideas for new themes) • Increased my/ my university's propensity to engage in projects with impacts • Increased the engagement in multidisciplinary projects by me/ my university • Increased my university's spending on applied Research • Increased my/ my university's engagement with public (e.g. advice, talks and delivering other social benefits) • Used the experience in KEEN to influence policy Outcomes • Used for the Research Excellence Framework 	<ul style="list-style-type: none"> ○ Neither Agree nor Disagree ○ Agree ○ Highly agree ○ Was not an objective
Competitive positioning Please select the extent to which you/ your university received (or ANTICIPATES to receive) the following intangible benefits from the project?	<ul style="list-style-type: none"> • Increased professional/brand recognition of business partner • Helped with competitive signalling of business Partner • Increased the market share of the business partner 	Tick boxes: <ul style="list-style-type: none"> ○ Highly disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Highly agree ○ Was not an objective
Financial value for business partner Please select the extent to which you/ your university received (or ANTICIPATES to receive) the following intangible benefits from the project?	<ul style="list-style-type: none"> • Improved business partner's access to finance • Helped business partner to scale up/grow • Helped business partner to cut costs 	Tick boxes: <ul style="list-style-type: none"> ○ Highly disagree ○ Disagree ○ Neither Agree nor Disagree ○ Agree ○ Highly agree ○ Was not an objective

c)

Future Value Arising from the programme	Variables	Measurement
Research and Innovation Please indicate whether your university engages in (or EXPECTS to engage in) any of the following additional activities as a result of your involvement in the project.	<ul style="list-style-type: none"> • Collaborative research with Businesses • Contract research or consultancy opportunities secured by your university • Prototyping and testing services provided by your university • Any intellectual property right – anticipated/applied/granted (e.g. patent, design right, copyright etc.) directly or indirectly from KEEN • Joint conferences with Businesses • Borrowing/lending equipment, 	Selection: <ul style="list-style-type: none"> ○ Yes/No ○ Number ○ Value/Revenue generated (£) (PROJECTED, if appropriate) ○ Amount of investment made by company (£) (PROJECTED, if appropriate)

	sharing laboratories or other facilities <ul style="list-style-type: none"> Joint research labs Joint publications with businesses 	
People based Please indicate whether your university engages in (or EXPECTS to engage in) any of the following additional activities as a result of your involvement in the project.	<ul style="list-style-type: none"> Training and development Events Business placements in universities Academic placements in businesses 	Selection: <ul style="list-style-type: none"> Yes/No Number Value/Revenue generated (£) (PROJECTED, if appropriate) Amount of investment made by company (£) (PROJECTED, if appropriate)
Other Please indicate whether your university engages in (or EXPECTS to engage in) any of the following additional activities as a result of your involvement in the project.	<ul style="list-style-type: none"> Spin-off generated as a result of the intervention Additional spending by your organisation on Research and Development other than the ones mentioned above 	Selection: <ul style="list-style-type: none"> Yes/No Number Value/Revenue generated (£) (PROJECTED, if appropriate) Amount of investment made by company (£) (PROJECTED, if appropriate)

d)

Expected and Unexpected Changes	Variables	Measurement
Please tick to indicate the extent to which the original plan of the project has changed over the course of the programme?	Changes in the objective	Tick boxes <ul style="list-style-type: none"> No change at all Minor changes Major changes
Where change has occurred, please select appropriately from the following list to indicate why	<ul style="list-style-type: none"> In response to economic changes In response to political changes (e.g. government priorities) In response to a change in my university In response to a change in the business partner In response to feedback from the Affiliate In response to the developments of the KEEN project Due to a lack of commitment from other partners 	Tick boxes: (Select all that apply)

Has the change generated positive or negative outcomes in relation to the final project delivery?	Positive or negative outcomes	Tick boxes: <input type="radio"/> Negative <input type="radio"/> Neither negative nor positive <input type="radio"/> Positive
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e)

Overall satisfaction and company characteristics	Variables	Measurement
Overall, how successful was the intervention?	Overall satisfaction	Tick boxes: <input type="radio"/> Very unsuccessful <input type="radio"/> Unsuccessful <input type="radio"/> Neither successful nor unsuccessful <input type="radio"/> Successful <input type="radio"/> Very successful
What is your likelihood of engaging in a KEEN type intervention in the future?	Likelihood to engage	<input type="radio"/> Very low <input type="radio"/> Low <input type="radio"/> Average <input type="radio"/> High <input type="radio"/> Very high

GRADUATES

a)

Background information	Variables	Measurement
What was your HIGHEST qualification at the start of the project?	Column: <ul style="list-style-type: none"> • PhD Masters • Bachelor's -1 • Bachelor's -2.1 • Bachelor's -2.2 • Bachelor's -3 NVQ/HND • Other (e.g. A-Level, Foundation) Row: <ul style="list-style-type: none"> • Agriculture • Business management • Design • Engineering • Humanities • Information Technology • Materials/Metallurgy • Mathematics • Science 	Tick boxes in matrix format
Which University/College awarded your HIGHEST qualification and indicate the country for University or College outside the UK?	Name of university	Open Ended
Please select from the following list the industry sector in which the company	<ul style="list-style-type: none"> • Aerospace • Agriculture, forestry, fishery • Bricks, cement, glass 	Select from dropdown list

operates.	<ul style="list-style-type: none"> • Chemical manufacturing • Construction • Education, administration • Energy, water • Finance • Food, drink, tobacco • Footwear, textiles, manufacturing • Furniture, games, jewellery • Information Technology, multimedia • Instrument, electrical • Medical (inc. medical device manufacturing) • Metal goods (inc. vehicle manufacturing) • Metal manufacturing • Plastics, paper, printing industries • Professional members organisations • Publishing, media, sport • Research and development • Service industry (inc. distribution) • Sustainability • Transport • Wood • Other 	
Please select from the following list the business department in which you were employed within the company	<ul style="list-style-type: none"> • Business management • Finance • Human resources • Information and communications technology • Logistics and distribution • Manufacturing process and operations • Business operations • Product development and design • Research and development • Sales and marketing • Supply chain 	Tick boxes (Select all that apply)
Have you pursued any form of educational qualification while engaging in the project?	Education while engaging in project	Tick boxes: Yes or No

b)

Benefits from programme	Variables	Measurement
Knowledge and skills Please indicate the extent to which the project generated (ANTICIPATED, if appropriate) the following benefits.	<ul style="list-style-type: none"> • Enabled me to advance my technical knowledge and skills • Enabled me to develop research skills • Provided me with an opportunity 	Tick boxes: <input type="radio"/> Highly disagree <input type="radio"/> Disagree <input type="radio"/> Neither Agree nor Disagree

	<p>to understand how to apply theory into practice</p> <ul style="list-style-type: none"> Improved my leadership skills Enabled me to develop management skills Improved my team working skills Increased my awareness of commercial opportunity Increased my understanding of business operations Made me realise the value of university business knowledge exchange 	<ul style="list-style-type: none"> Agree Highly agree Was not an objective
Strategic networking Please indicate the extent to which the project generated (ANTICIPATED, if appropriate) the following benefits.	<ul style="list-style-type: none"> Increased the strength of my business network Increased the strength of my academic network Increased the strength of my policy network 	Tick boxes: <ul style="list-style-type: none"> Highly disagree Disagree Neither Agree nor Disagree Agree Highly agree Was not an objective
Jobs and other Please indicate the extent to which the project generated (ANTICIPATED, if appropriate) the following benefits.	<ul style="list-style-type: none"> Increased my job prospects Increased my engagement with the public/ raised My public profile (e.g. talks, advice and delivering other social benefits) Boosted my confidence 	Tick boxes: <ul style="list-style-type: none"> Highly disagree Disagree Neither Agree nor Disagree Agree Highly agree Was not an objective

c)

Expected Post Project Engagement	Variables	Measurement
Please select your expected post KEEN engagement	<ul style="list-style-type: none"> Engage in further studies Received a job offer from the KEEN company Received a job offer from another company Might receive a job offer from the KEEN company Expect to find a job elsewhere Have no idea 	Tick boxes: (Select all that apply)
If you received a job offer from another company rather than the company or expect to find a job elsewhere, is it in the West Midlands?	Job offer in the West Midlands	Tick boxes: Yes or No
Annual salary after the KEEN project completion.	Annual salary	Number

d)

Overall satisfaction and personal characteristics	Variables	Measurement
Overall, how successful is your	Success of the engagement	Tick boxes:

KEEN engagement (ANTICIPATED, if appropriate)?		<ul style="list-style-type: none"> ○ Very unsuccessful ○ Unsuccessful ○ Neither successful nor unsuccessful ○ Successful ○ Very successful
Personal characteristics	Gender	Tick boxes: Male or Female
Personal characteristics	Age	Open ended
Personal characteristics	Move from other region to West Midlands because of the project	Tick boxes: Yes or No
Salary	Salary before project involvement	Number
Nationality	<ul style="list-style-type: none"> • Africa • Australia/New Zealand • Central America • China • Indian sub-continent • Middle East • North America • Republic of Ireland • South America • Other Asia • Other Europe • UK • Prefer not to say 	Selection

Contact details

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