University Enterprise Zones

Final Impact and Process Evaluation

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Executive summary

The University Enterprise Zones programme

The University Enterprise Zones programme (UEZ) pilot is a capital funding initiative funded by the former Department for Business, Energy and Industrial Strategy (BEIS). The programme seeks to address local needs for affordable commercial workspace for small businesses and facilitate increased engagement between R&D-focused businesses and universities. In addition, UEZ seeks to improve connectivity and partnerships between universities and strategic partners with a view to facilitate local economic growth.

During its pilot phase, the programme awarded five universities funding for the construction or refurbishment of commercial workspace and incubation space. As a result, the following five University Enterprise Zones (UEZs) began operating in 2016 and 2017:

- **Bradfield Centre**, opened in the Cambridge Science Park in 2017, is hosted by the Trinity College and is focused on reserving its premises for high-growth potential technology startups.
- **Digital Health Enterprise Zone (DHEZ)** has operated on the campus of the University of Bradford since 2016 and strives to be an interface for digital health-related R&D for businesses, academics and public sector alike.
- Opened in 2016, **Future Space** operates on the campus of the University of West of England (UWE), and focuses on businesses in advanced engineering, and green, health and digital technologies.
- Hosted by the University of Nottingham in its Innovation Park since 2016, **Ingenuity Centre** leverages and brokers the existing support infrastructure at the HEI with increasing focus on businesses aligning with the University's key expertise.
- Opened in the Liverpool Knowledge Quarter in 2017, **Sensor City** intended to become a hub for sensor system R&D for the private sector and academics alike. The UEZ was closed in 2021 with the time of reopening presently unknown.

This study

To assess the impact and processes pertaining to the UEZ pilot, Technopolis was commissioned to conduct a three-year evaluation of the UEZ pilot to date. This study builds on a baseline evaluation of the programme, also carried out by Technopolis in 2017. The present study, covering the subsequent years with specific focus on 2021-2023 has encompassed a mixed method approach combining long-term primary data collection, econometric analysis, and theory-based methods.

The primary data for this study has been collected in three annual rounds between 2021 and 2023. These rounds have comprised following components:

- Surveys of UEZ beneficiary businesses

- Interviews with UEZ beneficiary businesses
- Interviews with UEZ managers
- Updated Management Information Proformas for monitoring data against set Key Performance Indicators (KPIs)

In addition, the final data collection round in 2023 involved interviews with programme stakeholders.

For the final evaluation, we have synthesised the annually collected data and complemented it with an econometric assessment of the UEZ beneficiaries, a Value for Money assessment and a Contribution Analysis.

Evaluation Question 1: What, if any, impact has the programme had?

1a: Has there been an increase in university-business engagement as a result of the UEZ pilot?

- Early in the evaluation period, it seemed that being a UEZ tenant increased the propensity to use the host university's research and facilities. However, as time has progressed, it seems that the UEZ has become less significant as a driver for engagement with the university's facilities, or indeed to engage in formal knowledge exchange activity with the host university.
- The amount of formal and informal research, development and innovation interactions occurring between UEZ businesses and host universities has been declining over time.
- UEZ involvement has however, increased tenant businesses' propensity to engage more broadly with their host university. These engagements have most often taken the form of student placements, graduate recruitment, and employing university staff.

1b: Has there been an increase in co-operation between universities and LEPs as a result of the UEZ pilot?

- Collectively, the level of engagement by UEZs with Local Enterprise Partnerships (LEPs), where relevant, remains low and there has been no impact on host universities' cooperation with LEPs. Most UEZs have an arm's length relationship with their LEP and there are no evident links with individual UEZ clients.

1c: Has the UEZ pilot led to better business and economic performance both for those who worked with the five UEZs and the LEPs?

- Overall, while most survey respondents have a positive view of their UEZ engagement, the majority do not consider that relationship to have had a substantive impact on their business performance, in terms of income, employment, investment or profitability.
- While a minority of UEZ clients state that the UEZ programme has helped improve their business performance, the proportion reporting this positive outlook has fallen over time.

Evaluation Question 2: How, if at all, has the programme achieved these impacts?

There have been four mechanisms though which the UEZs have tried to generate impact.

Recruiting tenant businesses

- While the UEZs, as a whole, have not supported as many businesses as planned, they have generally been successful in reaching their target audiences: start-ups interested in incubation support, and innovation-oriented supported SMEs
- The most successful recruitment approach has been selling the UEZ's formal and informal links to the university (e.g. research capabilities, proximity to campus facilities)

Providing ongoing support to tenants

- All open UEZs have provided a combination of new or refurbished workspace, guidance to financial support schemes, business coaching and mentoring, and networking opportunities.
- It appears that business support has been more successful in UEZs which have some external providers.

Connecting the university and the business community

- The deepness of relationships between the UEZs and their host universities have varied considerably. Some UEZs have an arm's length relationships with their host university. Other UEZs are more closely intertwined with their host university with, for example, formal partnerships with faculties, or having university staff on the UEZ management board.
- UEZ and HEI relationships are best developed where the UEZ has close links with existing university structures (e.g. existing commercialisation support services, management staff, or links with faculties), and where UEZs have an on-campus location.

Connecting UEZs to the wider ecosystem

- UEZs have adopted a range of tactics to try and connect themselves with the wider innovation ecosystem. These have included leveraging local professional networks and sector specific partners, and sponsoring events.
- Generally speaking, the UEZs have not made as much progress in this area as might have been hoped, particularly in developing links with LEPs. They have been more effective in building relationships with local partners including business incubators, and local sector bodies.
- Outreach work has been more successful where UEZ management teams have had greater capacity, and have taken a more proactive approach to relationship building.

Evaluation Question 3: What is the overall cost-effectiveness of the programme?

- The programme's delivery efficiency (0.89 businesses supported / £0.1m programme expenditure) is broadly in line with other programmes that have provided innovation or incubation space linked to a research establishment.
- However, these figures must be considered with some caution. They exclude the large capital investments underwritten by the UEZ programme, funded through grants that predate the 2018-2021 expenditure figures used here.

Evaluation Question 4: Did the funding of the incubator / grow-on space successfully overcome the market failure?

The UEZs have addressed two market failures with mixed levels of success.

- As added available space for innovators, the Centres were not found to add meaningfully to existing provision.
- As spaces for improving connectedness between HEIs and businesses, we found that the UEZs to have successfully met a need.
- In addition, there is evidence of other local needs which UEZs have addressed individually, including health inequalities from the lack of public sector capacity and lack of investment.

Introduction

The Department for Science, Innovation and Technology (DSIT), previously the Department for Business, Energy and Industrial Strategy (BEIS), appointed Technopolis to undertake a process and impact evaluation of the University Enterprise Zones (UEZ) pilot. Established in 2014, the pilot programme provided capital funding to five universities to fund the construction or comprehensive refurbishment of commercial workspace and incubation space either on, or in close proximity to, their campuses. The pilot programme had two main objectives.

Encourage universities to strengthen their roles as strategic partners in local growth to engage with Local Enterprise Partnerships (LEPs), building on existing capabilities and partnerships.

Stimulate development of incubator or 'grow-on' space for small businesses in locations that encourage businesses to interact with universities and to innovate.

This report summarises the key findings seen from the entire study period, 2021 to 2023, building on individual annual monitoring reports produced for each of these three years.

Evaluation objectives

In agreement with DSIT, this study has addressed the following research questions:

1. What, if any, impact has the programme had?
    a. Has there been an increase in university-business engagement as a result of the UEZ pilot?
    b. Has there been an increase in co-operation between universities and LEPs as a result of the UEZ pilot?
    c. Has the UEZ pilot led to better business and economic performance both for those who worked with the five UEZs and the LEPs? What other factors may have contributed?
2. How, if at all, has the programme achieved these impacts?
3. What is the overall cost-effectiveness of the programme?

In relation to research question 1.c., we note the potentially declining relevance of LEPs to the UEZs since the transfer of LEP functions to local and combined authorities in 2024.[1] Whilst this has not resulted in the closure of all LEPs, (and although the data UEZ data collection was run between 2021 and 2023) the question ultimately holds less relevance as an indicator of

[1] Source: https://www.gov.uk/government/publications/transfer-of-local-enterprise-partnership-lep-core-functions-to-combined-and-local-authorities

outreach at the UEZs. As such, this report (and those prior) considers external engagement in broader terms, although LEP engagement is also characterised.

Previous studies

This evaluation is underpinned by two other studies. The first is an evaluation scoping study in 2016 which provided the core evaluation framework that this study has followed. The second underpinning study is the interim evaluation of the pilot, completed in 2018. The interim evaluation collected data which has served as the baseline for this impact evaluation. It also reached some initial process and impact conclusions, as set out below.

- Each of the UEZs adopted very different delivery and operational models. However, enablers for success included:
    - Having UEZs run by organisations with a previous track record in delivering business support
    - Choosing the right location for UEZs, taking local business needs into account
    - Using existing place-based initiatives that the university had a stake in (for example, a science park) to help give the UEZ concept early momentum.
    - Limiting staff turnover
- While the UEZ programme provided universities with substantial capital funding, the lack of revenue funding, particularly for staff time, had affected the pace, efficiency of programme delivery.
- Running the UEZs from new and modern business premises has helped created a pull factor and attracted people to the UEZ.
- Early evidence indicated that UEZs had helped increase university-business engagement
- At the time of study, there was little evidence to suggest that the UEZs had led to greater co-operation between universities and LEPs, albeit that the LEPs did see the UEZs as important local assets.

This final evaluation assesses, in part, the extent to which these conclusions from the interim evaluation remain valid, and whether any new issues or trends have emerged since then.

Approach and methodology

This study has adopted a mixed method evaluation, incorporating an extensive primary research programme (both with beneficiary businesses, and programme stakeholders), data and econometric analysis, and theory-based evaluation. Our approach has included the following components.

Annual UEZ business survey

We ran three annual surveys with all UEZ tenant businesses, adopting a hybrid online and telephone approach. During in large part of the survey used in the interim evaluation, this survey covered:

- Basic business characteristics
- The nature of their relationship with the UEZ
- Respondents' links to the host university and other public sector bodies
- Collaborations with other businesses
- Changes in business performance
- The value of the UEZ to the business

As shown in Table 1, the total response rate was 43%, with the highest response rate occurring in Year 1. It is also worth noting that Sensor City's closure in Years 2 and 3 meant no business survey was conducted there then.

Table 1: Summary of annual business survey responses

	Sample size	Responses received	Response rate
Year 1 (Mar 22-Apr 22)	153	87	57%
Year 2 (Nov 22 – Jan 23)	157	66	42%
Year 3 (Aug 23 – Dec 23)	208	68	33%
Total	518	221	43%

Source: Technopolis

As highlighted in Appendix A, in all three rounds of the survey, there was a disproportionately high number of responses from the Bradfield Centre. To overcome the scenario where the overall results are overly influenced by the Bradfield Centre, we have used weighted averages when analysing the survey responses. Each cohort of UEZ businesses per question and year was assigned a certain value (or weight). This, in turn, enabled each UEZ cohort to have an equal weight in the analysed responses. Questions measuring the overall impact in absolute numbers (e.g., the value of R&D investment) were left unweighted.

Annual UEZ business interviews

As part of the annual UEZ business survey, respondents were able to indicate their willingness to participate in a follow-up telephone/video interview. Semi-structured in nature, these interviews covered topics such as business objectives, main reasons for joining the UEZ, types of support and facilitation used, and projected outcomes in lieu of the UEZ.

As far as possible, the study team tried each year to speak with tenant businesses across all five UEZs (albeit it was not possible to speak with anyone in Sensor City in Years 2 and 3). The study team also focused on interviewing survey respondents who had indicated that UEZ engagement had been beneficial to them. The study team conducted 68 beneficiary interviews across the three years of the evaluation.

Annual interviews with University Enterprise Zone managers

We undertook three annual rounds of interviews with UEZ managers. These covered topics such as the impact of the COVID-19 pandemic, changes to each UEZs' offer, and how the UEZ was comparing to other workspace provision in the local area. The discussions also provided an opportunity to discuss progress against key management performance indicators.

Completion of management information proformas

Each year, the UEZ managers were asked to complete proformas that provided monitoring data against the key performance indicators (KPIs) shown in the programme Theory of Change (discussed in the next chapter). We have found some inconsistencies in the data over time: much of the information was drawn from disparate sources, and some UEZs reported changes in their monitoring systems over the intervening years of 2017-2023. These inconsistencies are reported throughout but further detail is also available in Appendix A.

External stakeholder interviews

Based on recommendations from UEZ mangers we approached 41 stakeholders who could provide an external perspective on each UEZ's performance, including its contribution to the wider regional innovation ecosystem. Stakeholders included external delivery partners, representatives of LEPs and other local authorities, and members of staff from the host Universities. As described in the next chapter, Sensor City's closure meant that we did not approach any stakeholders there for interview.

The study team conducted interviews with 19 stakeholders, and received written feedback from one.

Data matching and econometric analysis

In the absence of a clear control group for this evaluation, we have assessed programme performance by comparing the business performance of UEZ tenants to a matched comparison group (our control group). This matched comparison group is a set of businesses that have not received UEZ support, but closely match the characteristics of those that have. We have used the business databases FAME and Crunchbase to identify a non-beneficiary matched comparison group. Appendix C provides descriptive statistics showing the profile of these non-beneficiaries, and how closely matched they are to non-beneficiary businesses.

We have also used the ONS' Interdepartmental Business Register (IDBR) to collect business performance data over time for UEZ beneficiaries and non-beneficiaries alike. With the beneficiary and non-beneficiary groups being closely matched and sharing similar underlying

characteristics, any performance differentials between the two groups could, in theory, be explained by receiving UEZ support (after all, the two groups will be very similar in all other respects). To test this, we opted for an econometric analysis, assessing the magnitude and statistical significance of any performance differentials (i.e. the extent to which performance differences have occurred purely by chance). Firstly, this approach used Propensity Score Matching (PSM) to calculate the probability of receiving treatment based on characteristics like location, industry and age, and to match each beneficiary to another non-beneficiary with a similar business score. Completing this stage, a Difference-in-Difference model was applied to treated and control groups to compare their performance before and after the intervention to establish whether the beneficiaries performed differently relative to the similar control group.

Contribution analysis

Contribution analysis is a theory-based evaluation technique that takes a step-by-step approach to determine whether an intervention has contributed to observed effects. It looks to unpick why observed results have occurred (or not), weighing up evidence on the role played by an intervention relative to other external factors. Contribution analysis offers a systematic and clearly documented assessment that evaluations might otherwise do more implicitly.

We have used the programme Theory of Change (presented in the next chapter) to develop a series of contribution claims, setting out how and why the programme can be expected to contribute to different outputs, outcomes and impacts. We have reviewed all the evidence collected to determine how far this evidence either supports or refutes these contribution claims. By assessing the number of contribution claims supported, we are able to assess the level of change that may be attributable to the programme.

Cost effectiveness analysis and value for money assessment

Having estimated the UEZ pilot's impact, we have conducted a desk-based exercise to determine how favourably the cost per outcome figures compare relative to similar programmes elsewhere.

Report structure

The remainder of this report is structured as follows:

- **Chapter 3 (page 8) introduces the programme** as a whole (including the Theory of Change), and the individual UEZS
- **Chapter 4 (page 19)** (page presents the findings from our **process evaluation**
- **Chapter 5 (page 27)** presents the findings from the **impact evaluation**
- **Chapter 6 (page 62)** assesses the extent to which the programme has successfully **overcome market failures**
- **Chapter 7 (page 66)** provides our assessment of **programme additionality**

- **Chapter 8 (page 73)** sets out our interpretations of the programme's **cost effectiveness**
- **Chapter 9 (page 77)** provides our **summary and conclusions**
- A **series of appendices follow**, providing further details on the profile of beneficiary and non-beneficiary businesses used in the econometric analysis, additional methodological commentary, plus more in-depth details on each UEZ.

University Enterprise Zones

Introduction

The University Enterprise Zones (UEZs) pilot programme is a capital investment programme established in 2014. It funded the building or comprehensive refurbishment of five sites across Bradford, Liverpool, Nottingham, Cambridge and Bristol. Partnered with host universities, these sites (UEZs) were envisioned to provide workspace and incubation support for businesses with the integrated benefit of an academic community and resources in close proximity. The two core objectives of the programme were:

- Encouraging universities to strengthen their roles as strategic partners in local growth to engage with Local Enterprise Partnerships (LEPs), building on existing capabilities and partnerships
- Stimulating development of incubator or 'grow-on' space for small businesses in locations that encourage businesses to interact with universities and to innovate.

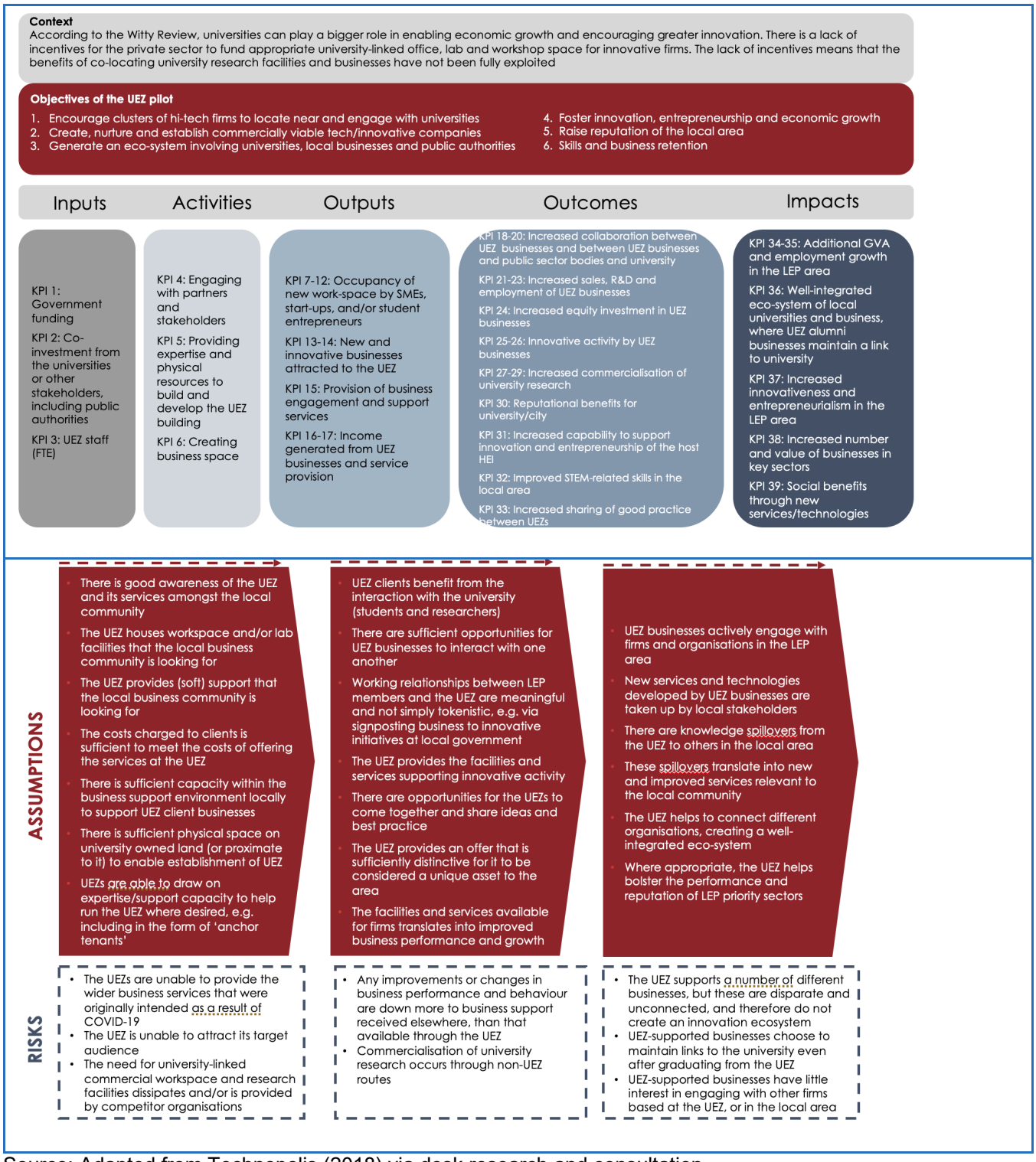
The diagram in Figure 1, below, tags each of the core UEZ elements as a KPI, which together capture the principal inputs, activities, outputs, outcomes and impacts of the UEZs. The programme logic model and theory of change sets out the logical sequence and causal relationships linking the UEZ programme rationale, aims and objectives to the expected outcomes and impacts.

As such, the UEZs were anticipated to engage with partners and stakeholders (KPI: 4) and provide expertise and physical resources to develop the UEZ sites (KPI: 5), and the involved business space (KPI: 6). These activities were theorised to result in the occupancy of provided workspaces by start-ups, SMEs and student entrepreneurs (KPI: 7-12), and particularly, the joining of new and innovative businesses to the UEZs (KPI: 13-14). In addition, the UEZ outputs were anticipated to include the provision of business support services (KPI: 15), and income from occupant business and services in which they engage (KPI: 16-17).

We theorised these outputs to lead to 1) increased collaboration between UEZ businesses, university and public sector bodies (KPI: 18-20); 2) increased economic benefits and equity investment among participating businesses (KPI: 21-24); 3) generate innovation and STEM skills among participating businesses (KPI: 25, 26, 32); 4) increase commercialisation of research at host HEIs and their capacity to support innovation and entrepreneurship (KPI: 27-29, 31); 5) reputational benefits for the host HEI and region (KPI: 30); and good practice sharing between UEZs (KPI: 33).

Finally, the UEZs were theorised to contribute to the following impacts: 1) additional GVA and employment in the region (KPI: 34-35); 2) well-integrated university-business ecosystems (KPI: 36) which 3) contain increased innovativeness and entrepreneurialism (KPI: 37) as well as increased number and value of businesses in key sectors (KPI: 38); and social benefits through new services and technologies (KPI: 39).

Figure 1: Programme logic model and theory of change developed for the UEZs (programme level)



Source: Adapted from Technopolis (2018) via desk research and consultation

As noted in Table 2, the observed UEZs are highly varied in terms of their operational contexts, sizes, target audiences and level of support offer.

Table 2: Summary of key UEZ characteristics

UEZ name	Investment received	Host universities	No. of businesses supported*	Target sectors	Years operational
The Bradfield Centre	£4.8m	Trinity College, University of Cambridge	130	High tech	7
DHEZ	£3.8m	University of Bradford	18	Digital health	8
Future Space	£4.0m	University of the West of England	124	High tech (advanced manufacturing, green, digital & health tech)	8
The Ingenuity Centre	£2.6m	University of Nottingham	42	High tech (e.g., zero carbon)	8
Sensor City	£5.0m	University of Liverpool	No data	Sensor technology	4 (currently closed)

Source: Technopolis. *the number of supported businesses is based on the records of each UEZ and subject to limitations where change of management or record systems have taken place

Based on the management information, proposals for each UEZ, interview insights and survey data, we have built profiles of the five UEZs. This was done to gain an understanding of the key areas of interest at each, as well as the respective operational models deployed. Core summaries of each UEZ follow below, with full profiles presented in Appendix B.

Bradfield Centre

The Bradfield Centre opened in the Cambridge Science Park in July 2017. Hosted by Trinity College at the University of Cambridge and managed by an external provider, Mantle Business Centres, the UEZ has operated largely independently of the University. At 3,400 sqm, it is the largest of the UEZs, and can cater for largest number of businesses. The UEZ is focused on technology sector with the aim of reserving the space for technical operations of early-stage, high growth potential start-ups. As such, the UEZ is oriented towards facilitating collaboration between occupants and university stakeholders, as well as leveraging a wide range of third-party business support provision. The Bradfield Centre has been particularly active in community engagement via sponsored events and events hosted on site.

The UEZ moved to hybrid operations during the COVID-19 pandemic, including hosting events virtually. The UEZ has also undergone a change in management. Upon opening, the Bradfield Centre was managed by Central Working, which has since gone into administration in 2019. The operating staff moved over to Mantle Business Centres.

Digital Health Enterprise Zone

Bradford Digital Health Enterprise Zone (DHEZ) opened in April 2016 on the main campus of the University of Bradford. The UEZ was opened in collaboration between the University of Bradford and the Bradford District City Council. Operated in a space of 957 sqm, 340 sqm of which is reserved for occupant business space, DHEZ is university-managed.

The UEZ retains a clear sectoral focus on digital health-specialised industry in Bradford. The UEZ is perhaps most oriented towards facilitating research and connecting stakeholders in the wider digital health ecosystem. The UEZ runs several student-involved clinics and a bespoke testing facility in the premises. In addition, DHEZ acts as an interface for public, private and academic health and social care R&D and teaching activities. In the past, DHEZ has catered to healthcare-related businesses more widely, but has since concentrated its focus on digital health innovation specifically.

Future Space

Future Space launched in August 2016 on the Frenchay Campus of the University of West of England (UWE). The UEZ has been managed by Oxford Innovation Network and retains a close collaboration with the host University. During its time, Future Space has grown slightly to 2,193 sqm at present. Located in the same building as the Bristol Robotics Laboratory, the UEZ leverages the proximity to the University's advanced facilities in its offer. In addition, Future Space has operationalised a range of business and technical advice services and access to finance through both, the UWE and third-party delivery.

The UEZ supports early-stage, high-growth businesses in the advanced technology sector with specific focus on advanced engineering, green technology, health technology and digital technology. Additionally, Future Space has implicitly required joining businesses to be orientated towards working with the university. As of early 2024, this requirement was made explicit in their outward communications. In addition, Future Space has recently partnered with an on-campus incubator, Launch Space, to support a pipeline of young start-ups to move over to the UEZ when they graduate the incubation.

Ingenuity Centre

Launched in October 2016, the Ingenuity Centre operates in the University of Nottingham Innovation Park (UNIP) on the Jubilee Campus of the University of Nottingham. The 1,440 sqm space for occupants is managed by the on-site UNIP management team. The Ingenuity Centre

supports an array of high-skill sectors, although the it is looking to concentrate on strategic sectors aligning with the key expertise at the University of Nottingham; zero carbon, and medical technology, to name a few.

The UEZ leverages a wide range of existing business and RDI support and facilities offered by the University of Nottingham. This includes facilitating knowledge exchange with students and staff, as well as placements. In addition, the UEZ has a relationship with an on-site incubation service for student and staff, the Ingenuity Lab. The Ingenuity Centre is looking to launch a separate incubation service specifically for UEZ occupants. This is to further support business tenants to develop skills in all areas or organisation.

Sensor City

Sensor City was opened in June 2017, and located in the Liverpool Knowledge Quarter.[2] Originally managed collaboratively by the university, the UEZ facilitated an overall building of 2,500 sqm, for up to 300 businesses within the following ten years. From the start, Sensor City was envisioned to establish a hub for sensor systems-related university-industry R&D and an incubator service for start-ups in this sector. This was planned by leveraging the related accomplished academic expertise available at the University of Liverpool, and John Moores University. The UEZ operated up until 2021, when the Sensor City was closed due to COVID-19 pandemic. At this point, the occupants were moved to the Liverpool Science Park in close proximity. The UEZ management had taken on a new party Sciontec, who is also responsible for the Liverpool Science Park. Although Sciontec continues to host UEZ occupants to this day, the Sensor City site itself remains closed until further notice.

[2] The Liverpool Knowledge Quarter (KQ) is a designated Mayoral Development Zone adjacent to the city Universities

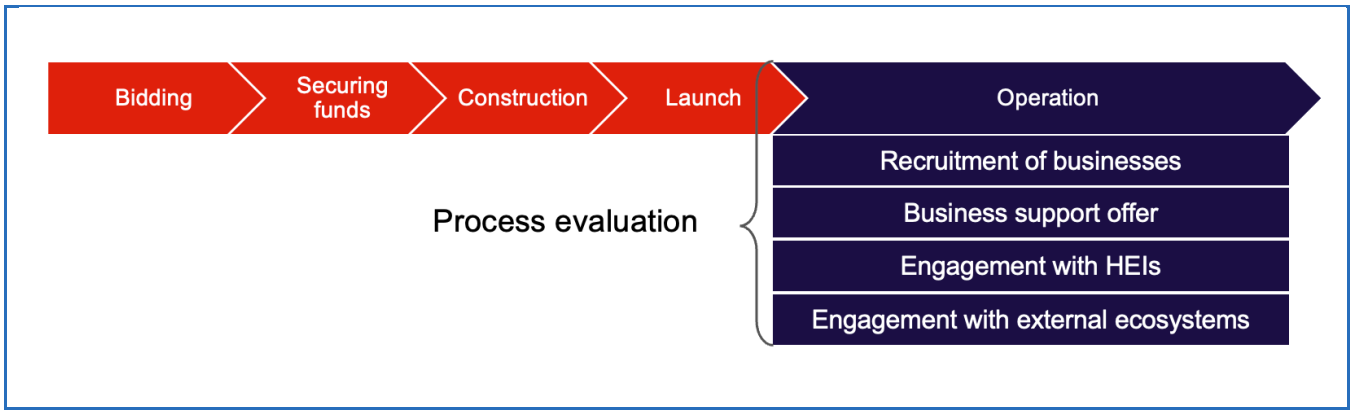
Process evaluation

This section looks to answer the evaluation question: **How, if at all, has the programme achieved these impacts**?

Introduction

Figure 2 sets out the key processes involved in the delivery of the UEZ pilot. The earlier interim evaluation focused on the prior stages (bidding, securing funds, construction and launch). In this section, we evaluate the progress that the pilot has made during its operational phase post-launch. As shown, this encompasses four components: recruiting businesses, providing these tenants with business support, fostering engagement with HEIs, and creating links between the UEZ and external stakeholder communities.

Figure 2: Illustration of how and where the process evaluation situates in the overall timeline for the UEZs



Source: Technopolis

Alt text for Figure 2:

An illustration of the process stages of UEZ pilot. Horizontally, from left to right: 'Bidding', 'Securing funds', Construction', 'Launch', and 'Operation'. Underneath 'Operation' from top to bottom: 'Recruitment of businesses', 'Business support offer', 'Engagement with HEIs', and 'Engagement with external ecosystems'. 'Operation' and the concepts underneath it are indicated by a right-facing curly bracket.

In this section, we examine each of the operational components in turn. We explore the way in which the UEZs sought to implement each operational element. This is then compared to the present state of the UEZ programme as a whole. We also deliberate on how different UEZs implemented these processes and draw success factors from each part of the overall process to understand what practices have been particularly beneficial and why.

Recruitment of businesses

Who the programme is targeting

Based on documentation provided in the UEZ proposals, the size of target audience was approximately 550 businesses across DHEZ, Future Space, Ingenuity Centre and Sensor City.[3] On aggregate, the target business population could be characterised as a mixture of start-ups interested in incubation support and innovation-oriented SMEs. The UEZs varied in terms of the sectoral focus hoped for in the target audience; at DHEZ, the target beneficiaries were the health and digital sectors, whereas the Bradfield Centre, Future Space and the Ingenuity Centre focused on technology-based businesses more generally.

How did they plan to reach them?

The UEZs have deployed a variety of outreach activities to promote themselves to prospective businesses. These include connecting with local actors (such as Chambers of Commerce and Combined Authorities), marketing the UEZ at events, and through their own websites and social media channels. Once established locally, the UEZs have received referrals from organisational partners as well as individual enquiries from businesses themselves. Some UEZs have also developed university-affiliated pathways for new start-ups to join the Centres.[4]

The UEZs broadly advertise their links to the host universities or, where relevant, the adjacent science park, the facilities they offer, opportunities for collaboration with academics and other businesses, as well as some offer of business support. The UEZs vary on whether they welcome all enquiring businesses. For instance, following a high degree of overall demand, Future Space has begun to apply more stringent entry criteria,[5] while others are generally more flexible about the type of business and how their offer can best fit them.

Success seen

In 2023, the four open UEZs had 182 businesses either on-site or as virtual occupants. This is in addition to 161 businesses who were reported to otherwise benefit from UEZ facilities like lab space and equipment. Overall, this falls short of the envisioned original target audience of 550 businesses, although there is variation by UEZ in terms of reaching their individual targets.[6]

The present business population is partly aligned with the target audience, although we observe considerable differences between UEZs in this regard. Overall, the UEZs support a wide combination of businesses of various sizes and sector affiliations. Where sectoral or other

[3] A target number of businesses at the Bradfield Centre could not be located.
[4] Future Space has partnered with an on-campus incubator, Launch Space, where start-ups can more to Future Space following their 12-month residency at the incubator; the Bradfield Centre is a stakeholder in a student start-up competition, the Trinity Bradfield Prize, which offers complementary Bradfield Centre memberships to finalists.
[5] Future Space expects joining businesses to demonstrate high growth, high technology-based orientation and plans to collaborate with the UWE.
[6] There are various reasons behind the gap between planned and actualised target population; both the Ingenuity Centre and DHEZ had to give up some of its space, and the Sensor City site has been closed since the pandemic.

criteria (soft or explicit) were narrow to begin with, or has been narrowed since, the business population has aligned more with the intended audience. In addition, the bespoke pathways operationalised at Future Space and the Bradfield Centre support the promotion of the UEZs to their ideal type of start-ups.

Success factors to recruitment are specific to each UEZ, but some common themes have emerged. Both beneficiary businesses and UEZ managers believed that links to the university were often among the main attraction for joining businesses (particularly reputational elements and facilities, research capacity, skilled student population and on-campus location). The differences in actualised business populations between UEZs have reinforced the points of attraction for each UEZ; the Bradfield Centre, focusing on the business-orientation the most, is described as attractive for its on-site community. By contrast, as clearly profiled, outreach at DHEZ ensures that it is attractive to businesses in digital and health sectors.

Ongoing support offer

What did the programme / UEZs aim to offer?

All UEZs proposed bespoke facilities (either new build or entirely refurbished) either on host university campus, or in a relevant science park. Each UEZ planned to provide specialist facilities (e.g., workshop and laboratory space), and a combination of shared and private working spaces with adjacent meeting rooms and function venues. The envisioned business support services are largely similar across the UEZs. These involved access to financial support schemes (including signposting businesses to grant funding programmes and potential investors), specialised and general business-related coaching and mentoring opportunities, peer networks, and access to a wider relevant business networks. Internationalisation was an additional theme for some UEZs, where UEZ-facilitated connections support the attraction of inward investment and overseas partnerships.

Table 3: Sector, partner and provision characteristics of UEZs

	Future Space	Ingenuity Centre	Sensor City	DHEZ	Bradfield Centre
Sector focus	Deep-tech (not selective)	University expertise-aligned tech (e.g., green tech)	Sensor tech (gateway criterion)	Digital healthcare (gateway criterion)	Technology startups
External delivery partner	Oxford Innovation	UNIP Management Limited	Liverpool John Moores University University of Liverpool	DHEZ Limited	Mantle Business Centres

			ScionTec		
Lab space	Yes	No	Yes	Yes	No

Source: Adapted from Technopolis interim evaluation (2018) and, updated through consultation with UEZ managers (2023)

How have the UEZs implemented a business support offer?

There is some variety in the way in which the UEZs have facilitated the ongoing offer for businesses. Nearly all UEZs (except for the Bradfield Centre) have made (or are planning to make) physical changes to the sites impacting the overall capacity of support. There is also variety in the mode of support delivery. The Bradfield Centre and Future Space have opted to partner with external providers. This is also being planned at the Ingenuity Centre. By contrast, DHEZ operates an in-house support offer and will continue to do so for the foreseeable future. The UEZs operated by an external management team (the Bradfield Centre and Future Space) have additionally leveraged resources from the wider networks of Mantle and Oxford Innovation, including bespoke tools and events. The UEZs have also opted for slightly different levels of support based on available resources and overall operating focus of the UEZ. All UEZs advertise the opportunity for businesses to have a registered address on campus.

Realised business offer at UEZs

The four open UEZs have all delivered physical workspace as they originally planned. These provide private and shared office space, meeting rooms and event venues. In addition, each UEZ offers access to specialised workspace (largely dependent on the orientation of the UEZ, including specialised workshops, laboratory space, clinics and simulation facilities). These facilities are offered typically on behalf of the university with a subset of the support residing on site.

As planned in their original proposals, all open UEZs offer some degree of advisory support for business needs, albeit the variety and level of this support differs between UEZs. This reflects the business-orientation of the UEZ in question. For instance, the Bradfield Centre offers an extensive list of partner-delivered support, such as marketing, legal and IP advice, accelerators, skills-development, access to finance, and networking opportunities. By contrast DHEZ, whose offer is mainly concerned with RDI collaboration (elaborated in Section 4.4), has a narrower support offer for businesses.

The UEZs run by dedicated business support providers have been able to provide a form of business support not previously envisioned. The providers have connected UEZ tenants to their own networks, allowing the UEZs in question to tap into a larger landscape of business support experience. Based on qualitative feedback from annual survey and interview rounds, a majority of the population is generally satisfied with the offered business support and available facilities. The available workspace is generally viewed positively and, interestingly, the opportunity to register businesses on campus or university-related address has been found to be valuable.

Connecting business community to university

Envisioned role of host-universities

The UEZs were envisioned to leverage the academic capabilities and facilities in strategic key sectors. This involved the provision of access to advanced and specialised facilities and equipment, and other university-provided resources, like research archives and libraries. In addition, strategic academic expertise (e.g., in engineering, health sciences) was identified for planned partnerships with the target business populations. Finally, student placements and projects, and graduate recruitment were planned for bringing commercial and academic connections closer and to support talent retention in the region.

Facilitating collaboration

There is variety in the level of relationships which each UEZ has with the host university. It also appears that some host universities are less predisposed to connecting with the UEZs than others. A positive example of close ties was seen at Future Space, where the UWE has expressed a strong interest in a close partnership. Staff from the university has moved over to the UEZ, and the Centre collaborates closely with adjacent facilities like the Bristol Robotics Laboratory. On the other hand, management at the Ingenuity Centre indicated that the relationship with the University of Nottingham has happened at more of an arm's length. Similarly, the Bradfield Centre appears to operate mostly separately from Trinity College. This being said, both UEZs reported recent and future plans to increase these relationships. Collaborating relationships are generally established with specific schools, institutes or university-run services.

The way in which the UEZs facilitate collaboration also occurs in a range of ways. Lecturers are invited to give talks, collaborations occur between businesses and researchers, students are facilitated on an ad hoc basis, and programmes are delivered at the UEZs. It appears that where the management team has incorporated university staff, it has enabled more personal engagement and brokerage of activities. Some UEZs mention having a competitive dynamic with other host university-run incubator activities, while elsewhere other HEI-provided incubation services have partnered up with the UEZs.

Level of business-university collaboration achieved

University collaboration has been realised as planned. Although the business-university engagement is not uniform across all UEZs, all open UEZs have provided some common offers to tenants. UEZs facilitate collaboration with university researchers, enable access to physical university resources (e.g., workspace, library), and support business involvement in student projects and placements and graduate recruitment.

The UEZs vary in how much their offer is intertwined with the university. Some UEZs have established a range of partnerships with various departments for additional systematic support like consulting and bid writing advice. Where the UEZs have close familiarity with faculties, ad-hoc connections are also brokered. It also appears that where the target audience has been

more defined (e.g., in terms of sectoral focus or readiness to collaborate with the host HEI), offered facilities have generally been more heavily utilised. Additionally, where the UEZs have partnered with existing start-up support at the university, businesses have found additional potential collaborators. Beyond this, UEZs function as natural collaboration spaces which allow for businesses and academics to collaborate independently of the management team.

Connecting UEZs to the wider ecosystem

What was planned?

The planned networks for UEZs included a mixture of local, national and international actors, private and public sector partners and several specific bodies of the NHS. Leveraging local professional networks and clusters of sector-specific activity was envisioned by several UEZs. This also tended to align with the strategic industries identified in local regional plans. Tapping into business support ecosystems (including accelerator, advice and financing capacity), was envisioned at local and national level. Several (although not all) UEZs planned engagement with local LEPs, and partnerships were envisioned with other incubator initiatives locally.

What was implemented?

All four open UEZs have taken steps to establish some degree of presence in the local landscape. This has happened by, for instance, creating collective opportunities, sponsoring or hosting events, and through active engagement with the landscape in general. The importance of outward connections is recognised across all UEZs. Managers at all Centres have understood one of their core tasks to be striking connections, although the capacity for this may have varied from UEZ to UEZ. Some feel they are slightly behind in this process but have a plan for increased general awareness and collaborations with other local actors.

Although most forged connections are sector-specific (i.e., focused on business, management and key sectors), some additional community engagement has been mentioned. This has supported the establishment of a local brand (in the case of the Bradfield Centre) and overall position in the ecosystem. In addition, the outward engagement has mainly concentrated on private sector partnerships (perhaps with the exception of DHEZ to whom NHS and other national health partners are critical).

Is the end result as envisioned?

Among our anticipated end results, we envisioned close collaboration between UEZs and their local LEPs. By the end of our evaluation, we conclude that these collaborations were not realised at most UEZs. Future Space is an exception to this with reported ongoing engagement with the local LEP. Otherwise, the LEPs reportedly remained at arm’s length, or even in places, mostly unaware of the local UEZ. It does need to be noted, however, that, as of April 2024,

core functions at LEPs were moved to Local and Combined Authorities.[7] To this end, present and possible future collaborations may alter to reflect this change.

Most UEZs have established a wide range of partnerships although with different approaches. For instance, while a large part of this network concerns strategic partners, the Bradfield Centre has engaged with the local community in more general terms by, for instance, supporting charitable projects. This has further supported the UEZ brand in Cambridge. There is variety in the extent to which the developed networks are business-oriented. Future Space is actively in the process of curating an integrated network with large regional business accommodations and incubators, whereas DHEZ has built an extensive community around health RDI interests, involving actors like Pain Association Scotland and Bradford Teaching Hospitals NHS Foundation Trust.

Proactive and pro-social relationship-brokering has been beneficial for the UEZs. It has enabled turning potential competitors into partners for mutual and business benefit. The capacity of the management team appears to have been a key contributor in this process.

Summary – How has the programme achieved its impacts?

- This evaluation has examined the implementation of the UEZs post-build and launch. In broad terms, these UEZ operations have covered four areas:
    - Recruiting tenant businesses
    - Providing ongoing business support to tenants
    - Connecting the host university to tenants and the wider business community
    - Connecting the UEZ itself to the wider local and regional innovation ecosystem.
- There has been considerable variation between the different UEZs in how they have implemented the four operational processes listed above.

Recruiting tenant businesses

- The UEZs' target population have been a mixture of start-ups interested in incubation support, and innovation-oriented supported SMEs. Two UEZs, Sensor City and DHEZ, had specific target sectors too.
- Recruitment channels have included engaging with local stakeholders (e.g. Combined Authorities, and chambers of Commerce), marketing at events, social media adverts, and seeking referrals from university partners.
- While the UEZs as a whole have not supported as many businesses as planned, they have generally been successful in reaching their target audiences. The most successful recruitment approach has been selling the UEZ's formal and informal links to the university (e.g. research capabilities, proximity to campus facilities)

[7] Source: https://www.gov.uk/government/publications/transfer-of-local-enterprise-partnership-lep-core-functions-to-combined-and-local-authorities

Providing ongoing support to tenants

- All the UEZs have provided a combination of new or refurbished workspace, guidance to financial support schemes, business coaching and mentoring, and networking opportunities.
- It appears that business support has been more successful in UEZs which have some external providers. These specialist providers have had broader networks and business support experience which tenants have been able to benefit from relative to those delivering in house.

Connecting the university and the business community

- The deepness of relationships between the UEZs and their host universities have varied considerably. Some UEZs have an arm's length relationships with their host university. Other UEZs are more closely intertwined with their host university with, for example, formal partnerships with faculties, or having university staff on the UEZ management board.
- We see a link between having an on-campus location and higher levels of HEI engagement (i.e., where the UEZ does not reside on campus, the businesses collectively tend to engage less with the HEI)
- UEZ and HEI relationships are best developed where the UEZ has close links with existing university structures (e.g. existing commercialisation support services, management staff, or links with faculties). These have helped develop more ad hoc connections between the different communities.

Connecting UEZs to the wider ecosystem

- UEZs have adopted a range of tactics to try and connect themselves with the wider innovation ecosystem. These have included leveraging local professional networks and sector specific partners, and sponsoring events.
- Generally speaking, the UEZS have not made as much progress is this area as the would have hoped. This is particularly true with LEPs where in some instances, LEPs have poor awareness of their UEZ
- The UEZs have been better in establishing relationships with other geographic specific partners, including local business incubators, and key sectoral strategic partners. This outreach work has been more successful where UEZ management teams have had greater capacity, and have taken a more proactive approach to relationship building.

Impact evaluation

This section answers the following research questions:

What, if any, impact has the programme had?

- Has there been an increase in university-business engagement as a result of the UEZ pilot?
- Has there been an increase in co-operation between universities and LEPs as a result of the UEZ pilot?
- Has the UEZ pilot led to better business and economic performance both for those who worked with the five UEZs and the LEPs?

Introduction

In this section, we examine the evidence collected from UEZ beneficiaries, stakeholders and secondary data sources to answer the first evaluation question about the impact of the UEZ pilot programme. The question is answered with the support of the three sub-questions, all of which are deliberated in turn; whether there have been increases in university-business engagement (page 27), co-operation between universities and LEPs and other public sector bodies (page 29), and whether the UEZ pilot has led to increased business and economic outcomes (page 42).

Impact on business, public sector and university engagement

Introduction

In this section, we draw on data collected from UEZ businesses via surveys and interviews between 2021 and 2023, to understand participating businesses' activities in three areas: the use of host universities' research and facilities; collaboration with other businesses through the UEZs; and engagement with public sector bodies.

Businesses' use of university research and facilities

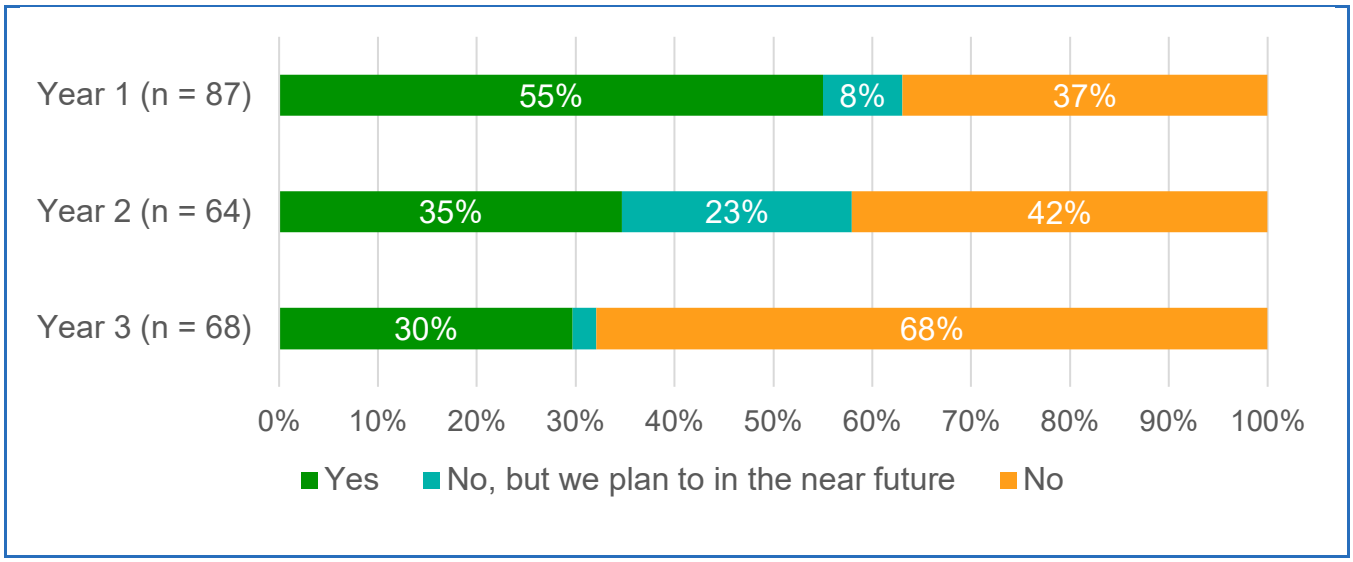
To understand the extent to which the engagement with UEZs has enabled businesses to make use of research facilities and other research resources, occupant businesses were asked whether they had used or planned to use them each year. The weighted responses are summarised in Figure 3, below.

We note that there is a declining trend in existing use from 2021 to 2023. In addition, the pipeline of planned future use has fluctuated from one year to another, but has also declined overall. Moreover, we found no consistent evidence of UEZ-supported businesses who had planned to use university research and facilities following through with this in subsequent

years. One business reported intended future use over all three consecutive years but was yet to realise this intent by the time of latest survey. In contrast, three companies never reported future intent, but indicated having used the facilities twice over the three-year reporting period. We also noted that most of the intent for future use was indicated by Bradfield Centre businesses (over 80% of those who indicated future use at any survey round), but the eventual reported use was distributed more evenly across the UEZs (although Bradfield Centre and Future Space-based businesses reported over 70% of all resource use).

While the share of respondents who did not make use of the available research resources increased relative to those who did across UEZs, there were marked differences in the distribution of responses. Businesses at Future Space and the Ingenuity Centre had a higher tendency to report exploiting these resources (with about half of each reporting existing use on average). Similarly, nearly all businesses at DHEZ reported existing use. Additionally, this group showed the largest relative pipeline of planned future use. Businesses at the Bradfield Centre reported comparatively a lesser benefit, as nearly three quarters of businesses across the three years reported no present or planned use.

Figure 3: UEZ business use of university research facilities or other university research in the past 12 months of responding (n = 219)



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

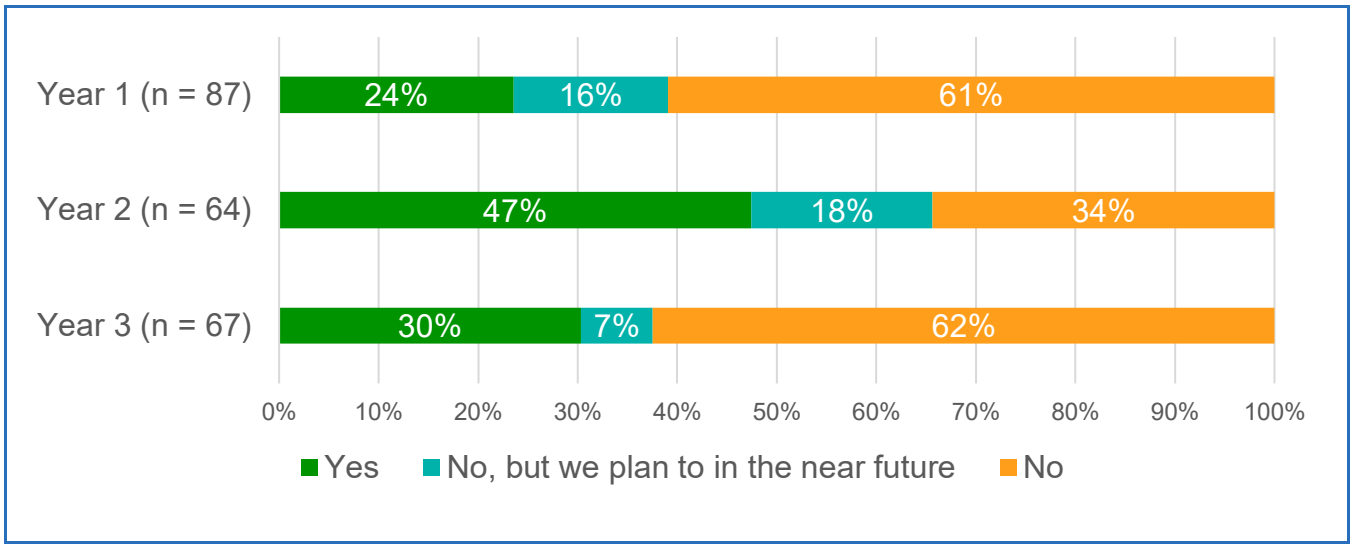
Alt text for Figure 3:

Three stacked bar charts illustrating Years 1 (top) to Year 3 (bottom) of UEZ business use of university research facilities or other university research. From left to right, the sections represent: ‘Yes’, ‘No, but we plan to in the future’ and ‘No’. The graph shows that the highest share of reported use of HEI research and facilities among respondents took place in Year 1 after which it decreased from one year to another.

Businesses' engagement with other businesses using the UEZ

In addition to fostering collaboration with universities and university research and facilities, the UEZs are intended to support increased business-to-business collaboration. As with the examination of university collaboration, respondents were asked to indicate whether they had in the past 12 months, or in the near future planned to collaborate with other businesses within the UEZ. Weighted responses are summarised below in Figure 4. Although there is fluctuation in business collaboration by year, compared to the use of research resources, businesses demonstrated a more consistent pipeline for future engagement. The nature of these collaborations is fairly diverse. Businesses have identified clients to whom they have sold consultation and products. Investors and businesses have found each other, and informal collaboration and network creation has occurred throughout the surveyed UEZs. A subset of businesses mentioned having identified research partners among the business population.

Figure 4: UEZ business engagement with other businesses at the same UEZ in the past 12 months of responding (n = 218)



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

Alt text for Figure 4:

Three stacked bar charts illustrating UEZ business engagement with other businesses at the same UEZ from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: 'Yes', 'No, but we plan to in the future' and 'No'. The graph shows that engagement with other businesses among respondents was highest in Year 2.

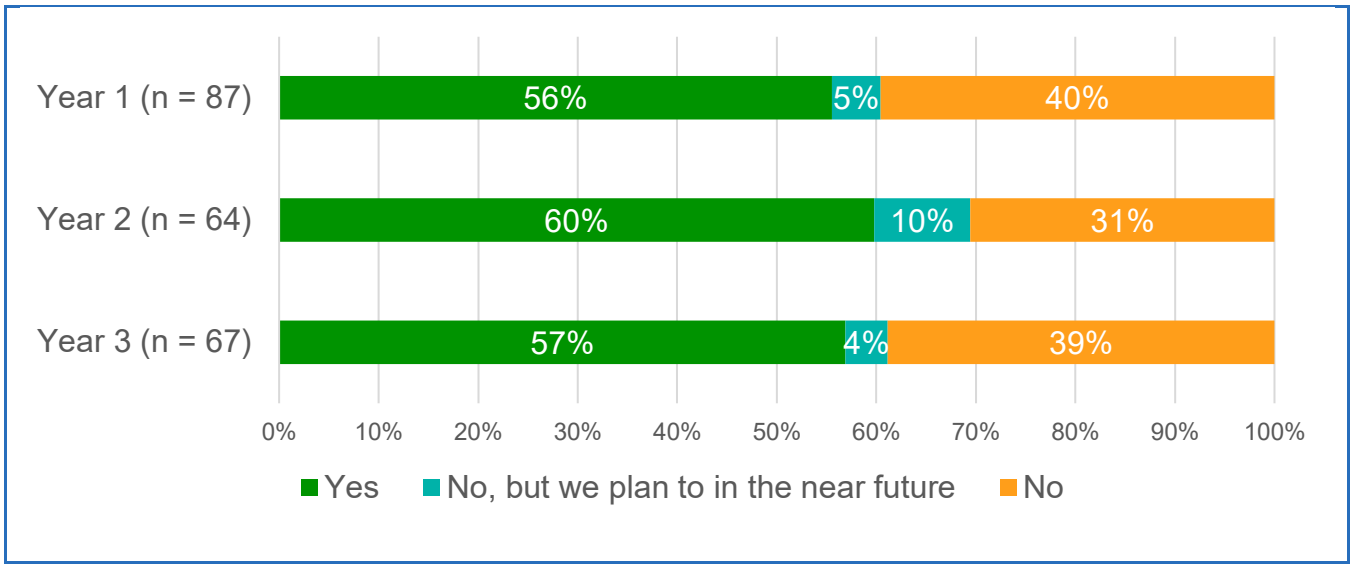
Businesses working with (non-university) public sector bodies

Surveyed businesses were also asked to indicate their engagement with public sector bodies via survey. As with research engagement and business collaboration, UEZ businesses were asked whether they had in the past engaged, or in the future planned to engage with non-university public sector bodies. The weighted results are visualised in Figure 5, below. In response, the weighted answers indicated a fairly strong recent history of working with the

public sector. This outcome is particularly driven up by the responses from businesses at DHEZ, who in further elaboration indicated having worked with a range of NHS actors and other health providers. More than half of surveyed businesses at the Ingenuity Centre also indicated having worked with the public sector over the three observed years. It also appears that compared to the strong indication of existing collaboration, the pipeline for future planned engagement was relatively small. It may suggest that the businesses who are strategically aligned to engage with public sector bodies already have a history of such engagements, rather than it being an area in which they intend to expand in the future.

Upon elaborating, businesses tended to bring up local and regional authorities, national actors like Innovate UK and the British Council, and various bodies in the NHS. Additionally, some businesses from various UEZs brought up overseas collaborators and clients like the European Council and clientele in the United States.

Figure 5: UEZ business engagement with non-university public sector bodies in the past 12 months of responding (n = 219)



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

Alt text for Figure 5:

Three stacked bar charts showing whether the respondent's business has worked with any non-university public bodies. From left to right, the sections represent: 'Yes', 'No, but we plan to in the near future' and 'No'. The graph shows that each year, more than half of respondents had engaged with public sector bodies.

UEZ businesses' engagement with research and knowledge exchange activities

As discussed in Section 5.2, above, the UEZ client businesses assessed the extent to which they had engaged with the research resources of the host university, public sector actors and each other. To further understand the extent to which affiliation with the UEZs had enabled these activities, survey respondents were asked to indicate whether the level of their collaborations had increased or decreased over the period of their engagement. In particular, businesses were asked about their use of university facilities and overall engagement with the host universities. In addition, businesses were asked about the volume and importance of formal and informal research and knowledge exchange (KE) projects in which they had participated.

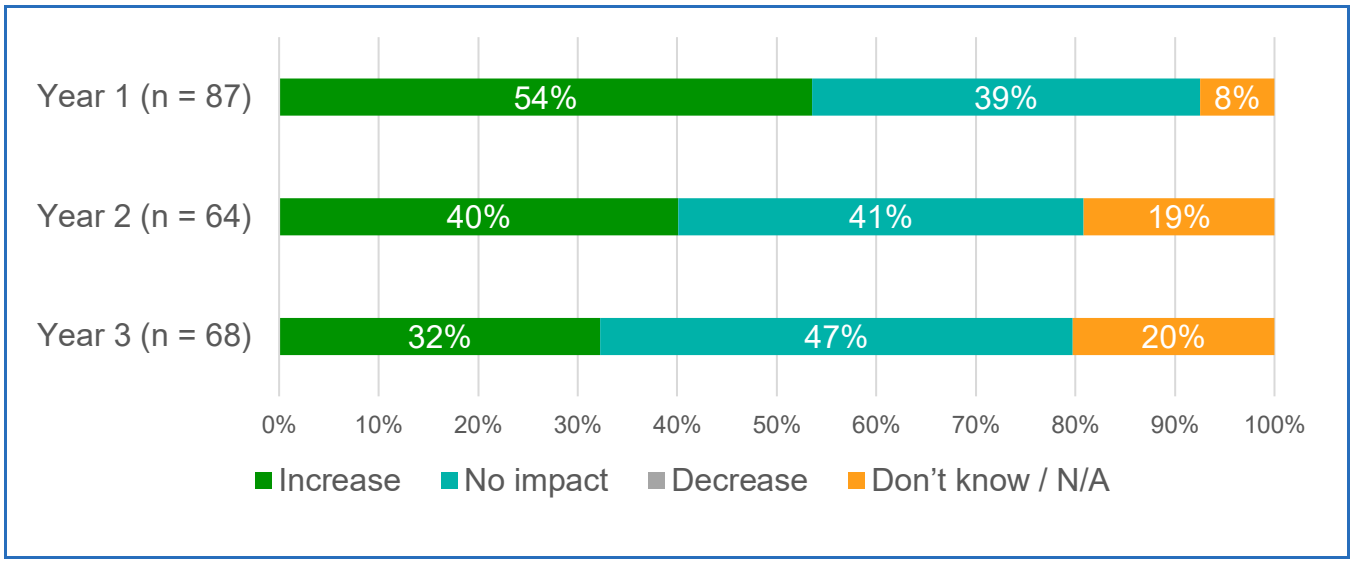
We note that there is a slight overall declining trend from 2021 to 2023 in terms of the perceived impact of the UEZs on business participation in research and KE. There is a high level of variance between UEZs in this regard however.

Impact of the UEZ on businesses' use of university research and facilities

Surveyed businesses were asked to estimate whether participation in the UEZs had resulted in an increase or a decrease in the use of host universities' research facilities. The weighted answers are summarised below in Figure 6. We note that no business throughout the observed years deemed the UEZs to have resulted in decreased use of research and facilities. Having said this, in overall weighted terms, there is a declining trend in the perceived positive impact on the same. In part, this decline is driven by a growing population who did not find the question applicable (a view which more than doubled from 2021 to 2023). Although there was no specification about the difference in option choices, it can be assumed that those selecting 'Not applicable' as opposed to 'No impact' most likely did not perceive the use of university research or facilities pertinent to their business operations.[8] There were, however, some differences between UEZs in terms of the perceived impact. Namely, more than half of responding businesses at DHEZ and Future Space indicated that their use of research and facilities had increased as a result. More than half of the businesses at Sensor City reported the same in the Year 1 survey in 2021. Similarly, nearly half of Ingenuity Centre businesses (43% on average) reported similar results across three years. The Bradfield Centre presented a slight exception to this. On average, nearly a third of Bradfield Centre businesses did not find the question applicable while up to 10% of respondents any single year (in 2021) had reported an increase in this respect.

Figure 6: Impact of UEZs on business' use of the host university's research and facilities (n = 219)

[8] NB: Notably, 'Slight increase' and 'Significant increase' were also included in the answer options to the question about impact on research and facility use. As neither of these were indicated by a single business throughout the three survey rounds, they were left out of the visualisation.



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

Alt text for Figure 6:

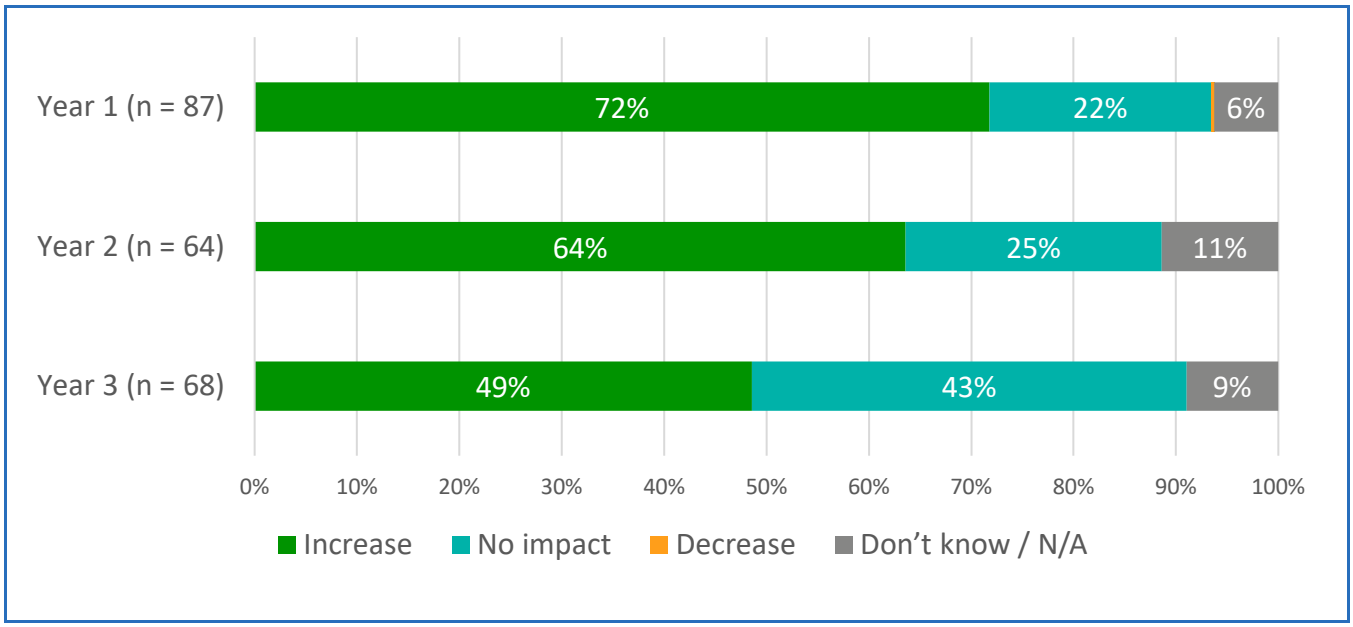
Three stacked bar charts showing the impact of UEZs on business' use of the host university's research and facilities from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: 'Increase', 'No impact', 'Decrease' and 'Don't know / N/A'. The graph shows that the highest share of reported use of research and facilities took place in Yar 1 and has consistently decreased to Year 3.

Impact of the UEZ on businesses' broader engagement with the university

As with the use of host universities' research and facilities, the weighted survey results demonstrate a decline in perceived impact on the overall engagement from 2021 to 2023. The overall weighted results are summarised in Figure 7, below. Future Space is the only UEZ where respondents reported consistent or increasing impact from 2021 to 2023. However, all UEZs generally reported more overall engagement with the host universities than research or facilities use specifically. Similarly to the increased use of research and facilities, however, there were notable differences between UEZs.

Across the three years, more than half of responding businesses at Future Space and DHEZ reported a perceived increase in their overall engagement with the host universities. Businesses at the Ingenuity Centre reported most fluctuation with a high level of engagement in the first year (2021-22) (all respondents reporting increased engagement, n = 6), but with a decrease to a third in 2023. At the Bradfield Centre, the perception of increased engagement has remained between 12% (2023) and 23% (2022).

Figure 7: Impact of UEZs on business engagement with the host university (n = 219)



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

Alt text for Figure 7:

Three stacked bar charts showing the impact of UEZs on business engagement with the host university from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: 'Increase', 'No impact', 'Decrease' and 'Don't know / N/A'. The graph shows that the reports of increased engagement with host university took place in Year 1 and decreased to Year 3.

Number of formal research and KE projects with researchers or academics

The surveyed businesses were also asked to enumerate the number of formal research and KE projects which they had undertaken within the past 12 months of reporting. Over the three-year data collection period, the businesses reported a total of 193 formal projects.[9] The absolute numbers are summarised in Table 4, below.

Table 4: The number of formal research and KE activities undertaken by UEZ businesses by UEZ and year (n = 194)

	2021 (n=78)	2022 (n=56)	2023 (n=60)	2021-23
All UEZs	85	64	44	193
Bradfield Centre	51[10]	41[9]	17	109
DHEZ	7	2	12[9]	21

[9] NB: the total number is a minimal estimate, as the highest answer option within the survey was '11 or more'.
[10] This value is a minimal estimate as one or more surveyed business reported 11+ formal projects in the given timeframe

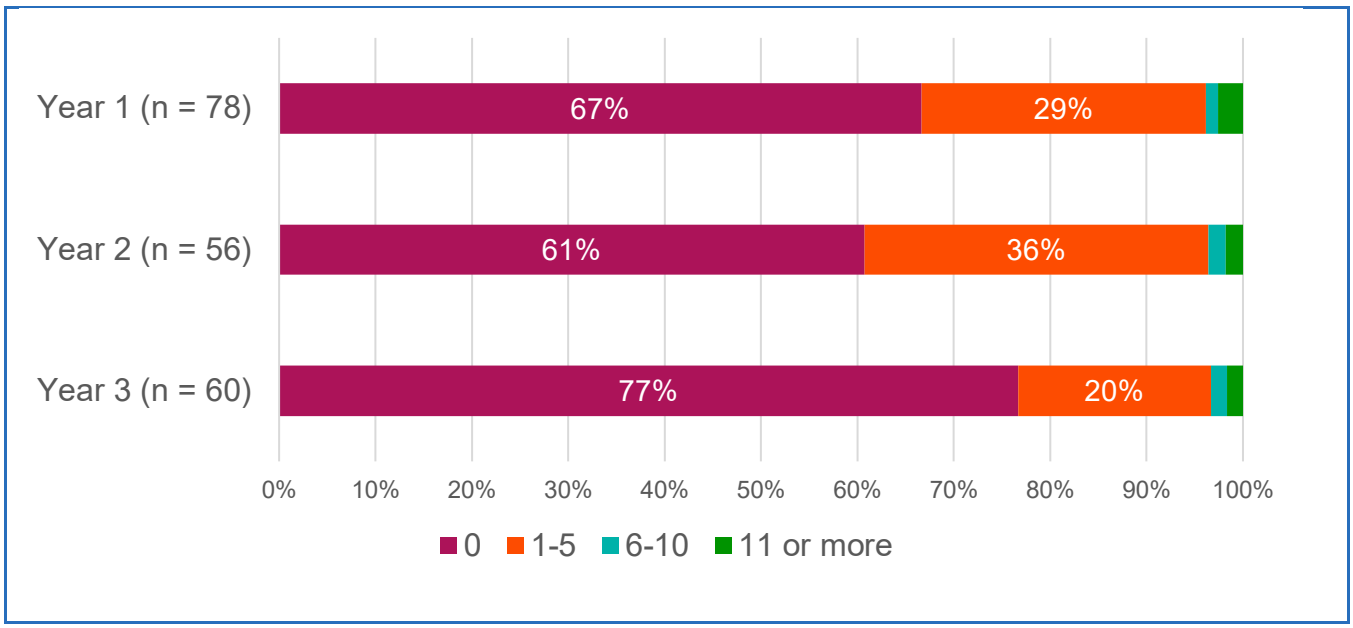
Future Space	13	17	12	42
Ingenuity Centre	10	4	3	17
Sensor City	4	NA*	NA*	4*

Source: Technopolis analysis based on UEZ survey data. NB: *data was not collected from Sensor City businesses in 2022-23 due to the closure of the site. The total collected number of formal research and KE activities at Sensor City is limited.

In absolute numbers, more than half of the formal research and KE projects were reported by businesses at the Bradfield Centre. It needs to be noted, however, that the numbers presented in Table 4 may well be influenced by the number of survey responses collected overall each year. The number of respondents (as well as the number of respondents who opted to share project information) has fluctuated and thus, we cannot rule out the possibility that more formal research and KE activities have taken place.

It also needs to be noted that the answer options in the survey included '0 projects', which was nearly always the most frequently selected answer.[11] The total number of businesses who reported one or more formal research or KE activities was 26 in 2021 (33% of all responding businesses), 22 in 2022 (39%) and 14 in 2023 (23%). This indicates that formal research and KE projects were concentrated on a subset of the respondents. Most businesses that had undertaken these activities reported between one and five projects, as shown in Figure 8, below.

Figure 8: Overall volume of formal research and KE projects reported between data collection Year 1-3 (n = 194)



Source: Technopolis, based on data from UEZ surveys 2021-23.

Alt text for Figure 8:

[11] NB: with the exception of DHEZ businesses in data collection years 1 and 2

Three stacked bar charts showing the volume of formal research and KE projects from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: ‘0’, ‘1-5’, ‘6-10’ and ’11 or more’. The graph shows that most commonly, respondents reported zero formal projects, followed by reports of one to five projects.

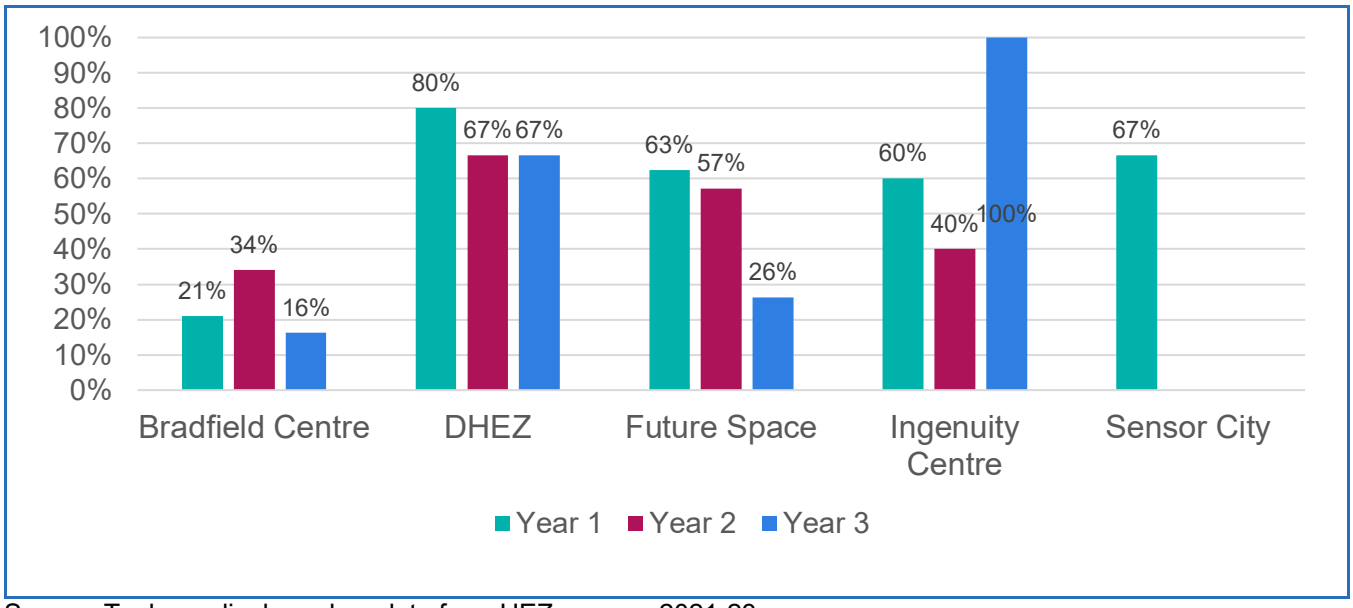
Participation in formal research and KE projects by businesses decreased from 2021 (Year 1) to 2023 (Year 3). This has been the case in both the absolute number of undertaken activities and the share of businesses reporting participation. However, there is a small number of businesses which have undertaken comparatively more of such activities (between six and ten projects, and 11 or more projects per business). The share of these businesses in the overall surveyed population has remained consistent over the three years. This is a positive indication suggesting that, although small in numbers, the UEZs attract some research-intensive businesses.

When asked to elaborate on the number and nature of these activities, 45 substantial follow-up responses were collected.[12] R&D projects were the most common type of answer with the characteristics ranging from a single survey participation to long-term research partnerships. Described partners included individual academics, departments from the host university, external research agencies, non-UEZ businesses and other universities. Thematic variety was observed, with topics ranging from education to advanced engineering. Environmental and health-related activities were a fairly common occurrence with several such projects mentioned across multiple UEZs. Where businesses specified their roles, they described industry advisory responsibilities and project supervision, although the role was often left unspecified. One respondent described the way in which these collaboration partnerships had developed as organic, beginning with informal conversations and growing into normalised collaboration and collegial relationships. Participation in student projects or contributions to PhD topics were reported at the Bradfield Centre, Future Space and the Ingenuity Centre. In addition, taking on student placements or recruiting graduates and members of staff was another common trend reported by businesses at all UEZs.

Broken down by UEZ, we note that the share of businesses participating in any number of formal research or KE activities varies from UEZ to UEZ. This is visualised in Figure 9, below. The Bradfield Centre, although reporting the most formal projects in absolute numbers, demonstrated the lowest level of formal project participation by business relative to the number of responses. By contrast, businesses at DHEZ were consistently more likely to undertake formal research or KE projects, while the overall project output was considerably lower. Future Space and the Ingenuity Centre present a more mixed picture of formal project engagement year on year.

Figure 9: Share of businesses by UEZ reporting undertaking formal research and KE activities (n = 194)

[12] NB: responses where further information was declined or overtly vague (e.g., simply ‘several’) were left out



Source: Technopolis, based on data from UEZ surveys 2021-23.

Alt text for Figure 9:

Bar chart representing the share of businesses by UEZ (from left to right: 'Bradfield Centre', DHEZ', 'Future Space', 'Ingenuity Centre' and 'Sensor City') reporting undertaking formal research and KE activities. From left to right, the bars represent: 'Year 1', 'Year 2' and 'Year 3'. The graph shows that respondents at DHEZ reported consistently high levels of formal activities with more fluctuation shown across other UEZs.

Value of formal research and KE projects with researchers or academics

The overall value of undertaken formal research and knowledge exchange reported by all surveyed UEZ businesses between 2021 and 2023 was £4.2m. This figure is subject to limitations in reporting, however.[13] As shown in Table 5, there was a high degree of inter-UEZ variation in the reported value of activities.

Table 5: Value of formal research and KE projects with researchers or academics undertaken by UEZ businesses 2021-23

	Sum	Mean	Max	Min
All UEZs	£4,203,700	£70,061.67	£1,200,000	£2,200
Bradfield Centre (n=42)	£2,203,000	£52,452	£1,000,000	£4,000
DHEZ (n=1)	£16,000	£16,000	£16,000	£16,000

[13] NB: 11 'Don't know' responses were collected from businesses at DHEZ when asked for the total value of the formal research and KE projects; only one reported a value. In addition, two respondents reported £5k-£10k which were not counted due to the lack of accuracy.

Future Space (n=11)	£1,859,200	£185,920	£1,200,000	£2,200
Ingenuity Centre (n=4)	£120,000	£24,000	£120,000	£120,000
Sensor City (n=2)	£5,500	£2,750	£5,500	£5,500

Source: Technopolis, based on data from UEZ surveys 2021-23.

In calculating minimum reported values, "£0" responses were left out; at least one £0 report was recorded from all UEZs, except for DHEZ, where only one respondent reported a value, as opposed to responding 'Don't know'.

Importance of formal research and KE projects undertaken

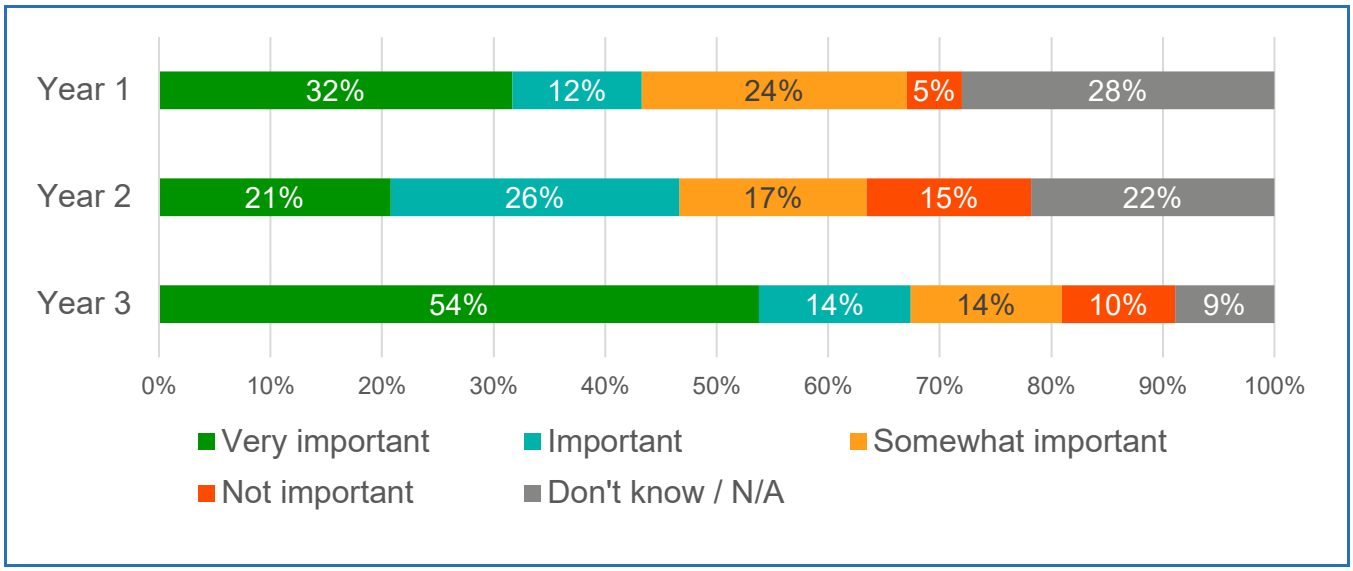
UEZ businesses were also asked whether they deem undertaken research and KE projects as important. Although a majority of those who responded to this question had previously reported participation in such projects, some businesses that had not opted to answer this question nonetheless (most often opting to answer 'Not applicable').

The weighted assessment of the importance of undertaken formal research and KE projects indicates that UEZ businesses consistently hold these activities in high regard. This is summarised in Figure 10, below. Although there is year-on-year fluctuation, at least 63% of respondents to the question deemed these projects somewhat important, important or very important.[14] This positive perception was at its highest in 2023, when the same views were held by 81%, with more than half of respondents assessing undertaken formal projects as very important. Interestingly, the share of businesses who indicated these activities to have been not important make up the smallest group in each year. Instead of describing the undertaken formal projects as unimportant, the remaining businesses were more likely to indicate that the question was not applicable. This supports an assumption that the R&D activities enabled by the UEZs have generally been valuable to businesses who participate in them, but the activities themselves may not be relevant to the full population.

More than half of businesses at Sensor City, DHEZ, Future Space and the Ingenuity Centre found undertaken formal initiatives at least somewhat important. This perception was also shared by an average of 36% of businesses at the Bradfield Centre, where the perception of importance increased from 27% in 2021 to 57% in 2023.

Figure 10: Perceived importance of formal research and KE projects reported between data collection Year 1-3 (n=174)

[14] NB: there were 17 respondents overall who reported 0 formal projects but responded to this question with 'Somewhat important', 'Important', or 'Very important'



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

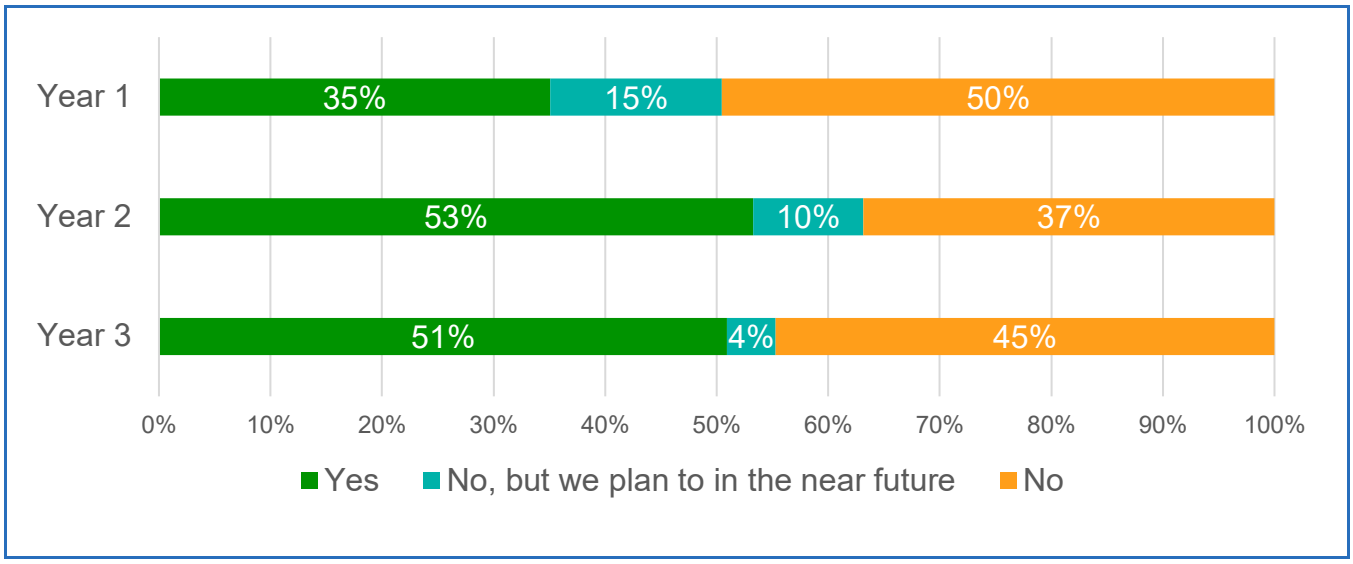
Alt text for Figure 10:

Three stacked bar charts showing perceived importance from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: 'Very important', 'Important', 'Somewhat important', 'Not important' and 'Don't know / N/A'. The graph shows respondents in Year 3 responded most often ‘Very important’ relative to previous years.

Informal research and KE projects involving researchers/academics

Between 2021 and 2023, the level of undertaken informal research and KE projects appears to have settled at about half of the population across the UEZs. This demonstrates an improvement from 2021, when 35% of respondents reported similar activities. This is summarised below in Figure 11. Notably, the level of informal research and KE undertaken in 2021, together with the pipeline of future activities in the same year, align with the actual informal activities undertaken in the years after. With this being said, the pipeline for future planned informal activities appears to have declined annually from 2021 to 2023.

Figure 11: Has your business engaged in informal research and knowledge exchange projects involving researchers/academics in the past 12 months? (n = 217)



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

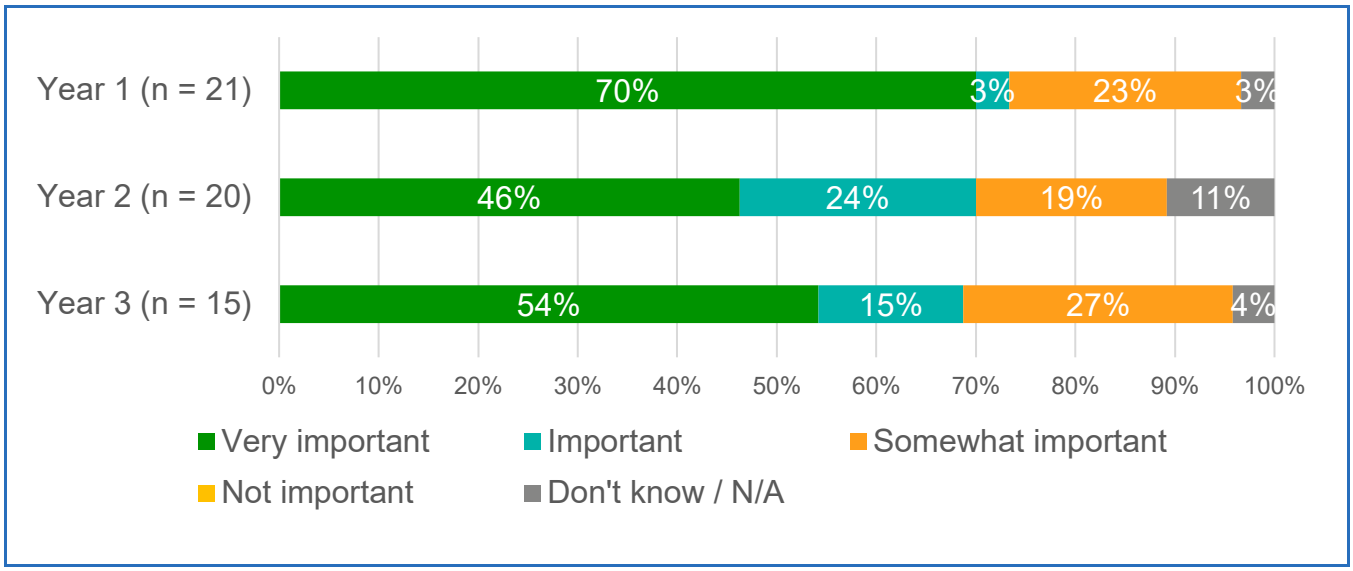
Alt text for Figure 11:

Three stacked bar charts showing engagement in informal research and knowledge exchange projects involving researchers/academics from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: 'Yes', 'No, but we plan to in the near future' and 'No'. The graph shows that the reported engagement in informal projects increased in Year 2 and remained fairly even to Year 3.

Importance of informal research and KE projects

As with formal research and KE activities, businesses were asked to estimate the importance of the undertaken informal project activity. The weighted responses indicate that the responding businesses across all UEZs held the informal research and knowledge exchange activities in high regard. This is shown in Figure 12, below. No single business throughout the observed period rated these activities as unimportant. It does need to be noted, however, that the overall response rate is fairly low (n=56), reflecting the indication in Figure 11 that a large part of the responding population had not participated in informal research or KE activities. We can conclude, however, that those who did participate in these projects have generally found them valuable.

Figure 12: Perceived importance of informal research and KE projects reported between data collection Year 1-3 (n = 56)



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

Alt text for Figure 12:

Three stacked bar charts showing perceived importance of informal research and KE projects from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: 'Very important', 'Important', 'Somewhat important', 'Not important' and 'Don't know / N/A'. The graph shows that the perception of informal projects as ‘Very important’ was highest in Year 1, decreases to Year 2 and increases slightly to Year 3. Every year, at least 69% of respondents reported the projects to be ‘Important’ or ‘Very important’.

Not much variation was observed in terms of the deemed importance of informal activities between the UEZs. Businesses at DHEZ and the Bradfield Centre had a small subset of respondents who responded ‘Don’t know’ (up to 14%), whereas all responding businesses at Future Space and the Ingenuity Centre deemed these activities at least somewhat important. The degree to which the businesses deemed these activities ‘Very important’ varied somewhat; the lowest share of the responses occurred at Future Space (42%) and the highest at the Ingenuity Centre (86%).

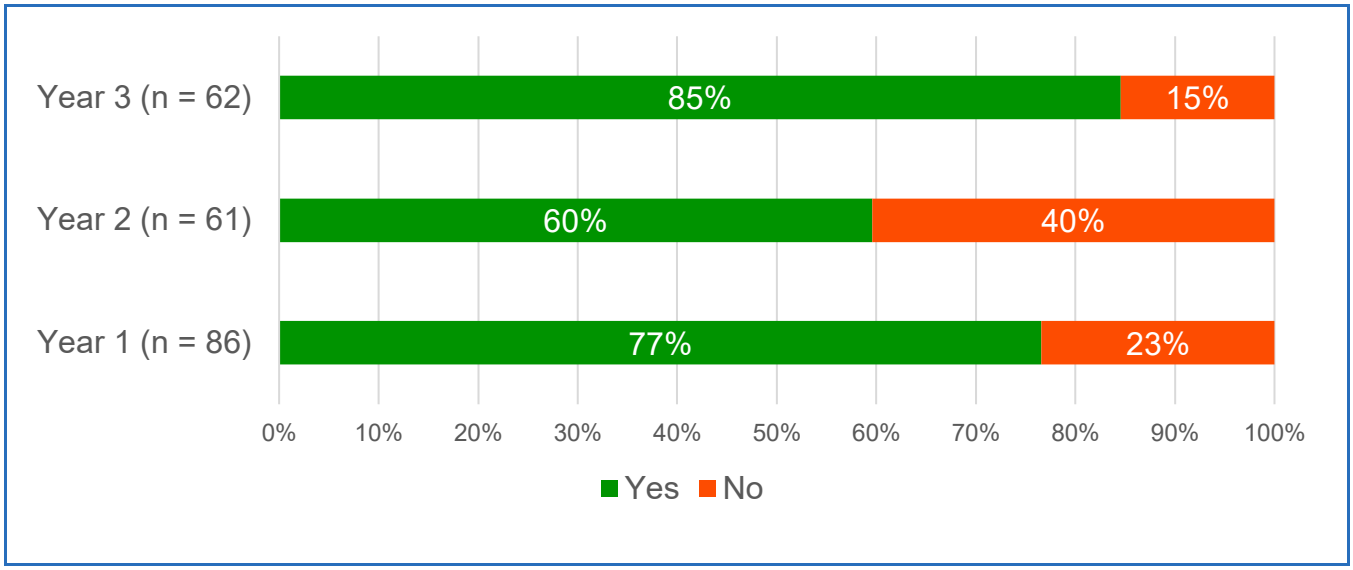
Intellectual property rights filed/registered by businesses

To understand the outputs of research, knowledge exchange, and broader innovation activities among UEZ businesses, survey respondents were asked whether they had introduced a new product/service, new business structure/practice or an improved marketing concept or strategy in the last 12 months.

Across the three years, at least 60% of businesses reported that they had introduced innovative additions. For a point of reference, this compares favourably to the survey of businesses in the UK Innovation Survey 2021 wherein 45% of businesses were innovation-

active.[15] This activity has been fairly even between UEZs as well, with 65% to 79% of the populations across all UEZs on average reporting the same. The weighted assessment of year-on-year reports are visualised below in Figure 13.

Figure 13: In the past 12 months, has your business introduced a new or significantly improved product or process, form of organisation or practice, or marketing concept or strategy (n = 209)



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

Alt text for Figure 13:

Three stacked bar charts showing whether businesses have introduced a new or significantly improved product or process, form of organisation or practice, or marketing concept or strategy from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: 'Yes' and 'No'. The graph shows that at least 60% of respondents every year responded 'Yes'.

Businesses were also questioned about the type and number of intellectual property (IP) items filed or registered during the observed years. The accumulative responses are summarised in Table 6, below. In the three years, a total of 201 individual items of IP was reported. Most IP was reported under software licenses (although this is in large part due to a single outlier in 2023 who reported 50 software licenses). Patents were the second largest type of intellectual property, which had been registered most consistently over the three-year-period (32 in 2021, nine in 2022 and 26 in 2023).

There was considerable variation between UEZs in filed or registered IP. Businesses at the Bradfield Centre (100 items) and Future Space (93 items) accounted for nearly all IP. Most

[15] Source: DSIT (2022). UK Innovation Survey 2021: Report covering the survey period 2018 to 2020. URL: https://assets.publishing.service.gov.uk/media/627a3fc68fa8f560b660a590/UK_Innovation_Survey_2021_Report.pdf

breadth in types of IP was observed at the Bradfield Centre, which reported patents, software licenses, non-software licenses, design rights and 'Other' intellectual property.

Table 6: Total number of new Intellectual Property Rights filed or registered by UEZ businesses 2021-23

	Patents	Software licenses	Non-software licenses	Design rights	Other	All IP
Intellectual Property filed or registered	67	77	1	10	46	201

Source: Technopolis, based on data from UEZ surveys 2021-23

Business and economic performance

Here we assess the impact of UEZs on business growth. This was measured via self-reported levels of FTEs, accumulated sales and profits, as well as labour and other costs. In addition, UEZ businesses were asked about external financing in the form of grant funding, equity funding and loans. This section draws mainly on data reported by businesses via surveys between 2021 and 2023.

Employment among UEZ businesses

Across the surveyed businesses spanning three years, 604.11 FTEs were reported by 209 businesses. The range of FTEs reported spanned from 0 to 120 per business with a median of 1 FTE per business. Annually, the median, maximum and smallest size of responding businesses has remained largely similar. We also note that the UEZ occupants tend to be small businesses. Compared to reported employee numbers in the baseline, it appears that the size of UEZ businesses has decreased since 2017; businesses in the interim evaluation reported a median size of three FTEs and only two businesses at the time reported 0 FTEs, where in later years 17+ respondents reported the same. Some of this difference may be due, however, to a change in survey wording, especially as qualitative evidence suggests that very few of the supported businesses now are sole traders.[16]

[16] NB: there is a difference in the survey questionnaire between 2017 and the 2021-23, which may contribute to the FTE levels however. In 2017, UEZ businesses were asked how many FTEs the businesses employed. By contrast, the surveys since asked how many FTEs the businesses have on site. This difference would particularly be shown in the responses of multinational or larger businesses.

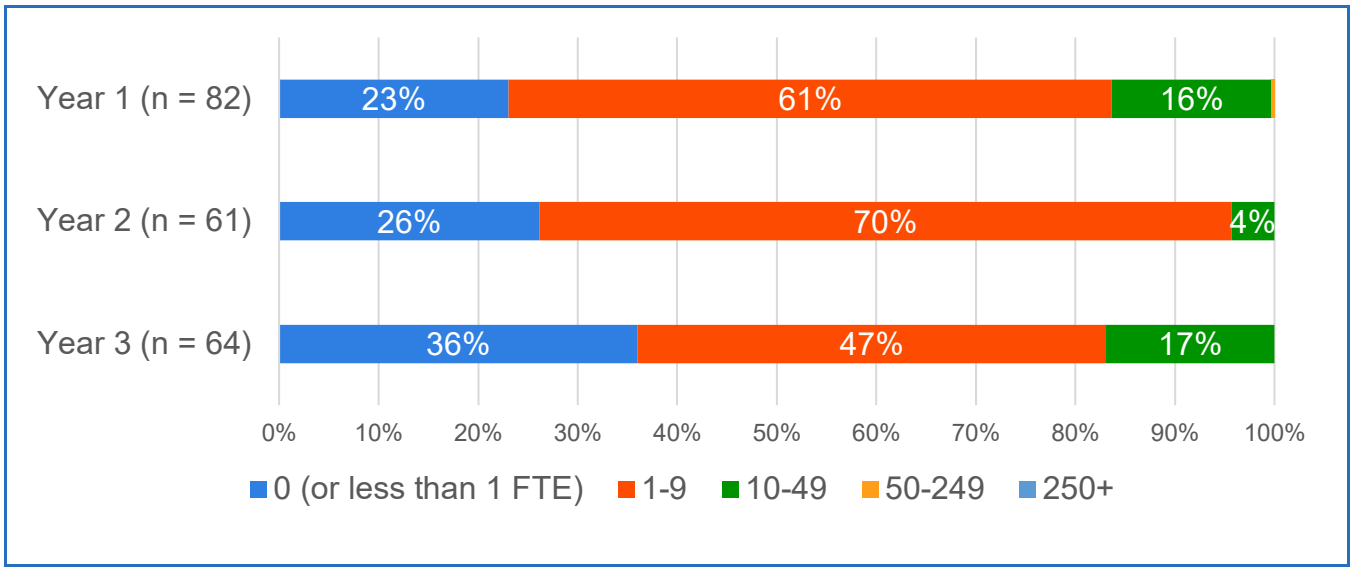
Table 7: FTE employment among UEZ businesses, on-site (median, max and min) (n = 188))

	Median	Max	Min
2021	1.8	18[17]	0
2022	1	15	0
2023	1.6	27	0

Source: Technopolis, based on data from UEZ surveys 2021-23

Based on the responses per year, businesses were categorised into bands to examine the distribution of businesses by size (businesses with no FTEs, and micro, small, medium and large businesses). The weighted results of this distribution are shown in Figure 14, below. There was some fluctuation in the share of businesses by bands across the three survey rounds. However, consistently, most of the responding population consisted of micro businesses. Having said this, an increasing share of responding businesses over time consisted of sole traders, or other ventures with less than one FTE.

Figure 14: FTE employment among UEZ businesses, on-site (size bands) 2021-23



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

Alt text for Figure 14:

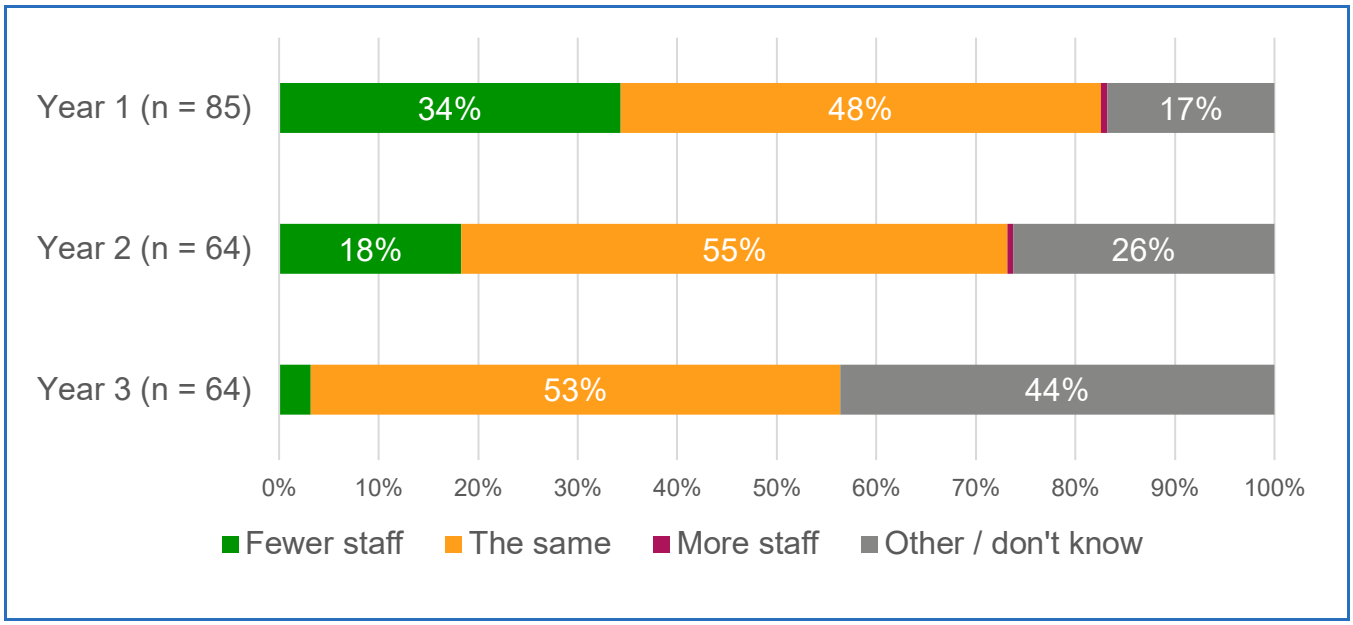
Three stacked bar charts showing FTE employment among UEZ businesses from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: '0 (or less than 1 FTE)', '1-9', '10-49', '50-249' and '250+'. The most common response every year was '1-9' FTEs,

[17] NB: Year 1 survey data included a report of 120 FTEs on site. This was treated as an outlier and removed from data.

but the share of responses reporting '0 (or less than 1 FTE)' increased from Year 1 to Year 3.

In the business surveys, we also asked responding businesses to estimate the difference made to the FTE count by their affiliation to the UEZ. Assigning equal weight to the response pools at each UEZ, we notice that the relative perception of positive impact on the number of FTEs has decreased from 2021 to 2023. This is shown in Figure 15, below. Having said this, the views of no impact (i.e., respondents who indicated that their level of FTEs would be the same without the UEZs) have not increased. Rather, an increasing share of businesses reported uncertainty about this impact.

Figure 15: Projected difference of FTE employment without UEZ engagement (n = 213)



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

Alt text for Figure 15:

Three stacked bar charts showing the projected difference of FTE employment without UEZ engagement from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: 'Fewer staff', 'The same', 'More staff' and 'Other / don't know'. The share of reports of fewer staff without UEZ decreases from Year 1 (34%) to Year 3 (3%). The share of 'The same' responses has remained consistent (48-55%) while the share of 'Other/don't know' responses has increased from Year 1 (17%) to Year 3 (44%).

Sales, costs, investment and profits of UEZ businesses

Over the three data collection rounds, UEZ businesses were asked to fill in financial data from the past 12 months, including generated sales, labour costs incurred, other costs, the value of R&D investment and profit before tax. Between 2021 and 2023, the responding businesses enumerated total information summarised below, in Table 8.

Table 8: Accumulated sales, costs, investment and profits of UEZ businesses 2021-2023[18]

	Sales generated	Labour cost incurred	Other costs	Value or R&D investment	Profit before tax
Responding businesses	72	64	50	56	49
Total	£17,424,313	£13,046,480	£3,575,413	£9,094,840	£3,039,529
Average	£245,413	£207,087	£71,508	£162,408	£62,031
Median	£30,000	£50,000	£8,500	£0	£0
Largest value	£2,300,000	£3,000,000	£700,840	£2,000,000	£700,000

Source: Technopolis, based on data from UEZ surveys 2021-23

As noted in the final annual monitoring report, the value of average sales was reportedly highest in 2023. Removing an outlier in the baseline results, average sales have increased slightly in 2021 and 2023 compared to 2017 (when the reported average was £259k).[19] The average self-reported R&D investment and profit were highest in the first year of observation in 2021, but the baseline profits were surpassed in both, 2021 and 2023. Sales, labour and other costs, R&D investment and profit before tax by year is summarised below in Table 9.

Table 9: Sales, costs, investment and profits of UEZ businesses 2021-2023, by year

	Sales generated			Labour cost incurred			Other costs			Value or R&D investment			Profit before tax		
Year	**21**	**22**	**23**	**21**	**22**	**23**	**21**	**22**	**23**	**21**	**22**	**23**	**21**	**22**	**23**
n	34	18	20	34	12	18	25	10	15	30	13	13	22	10	17
Total	£9.6m	£1.5m	£6.3m	£7.7m	£940k	£4.4m	£2.5m	£546k	£528k	£6.2m	£1.2m	£1.7m	£1.8m	£170k	£1.1m
Average	£284k	£85k	£316k	£234k	£78k	£243k	£100k	£55k	£35k	£205k	£91k	£134k	£82k	£17k	£62k
Median	£50k	£15k	£30k	£120k	£60k	£18k	£40k	£25k	£1k	£25k	£0	£0	£0	£0	£454

[18] An outlier of £66m was removed from reported R&D investment.
[19] NB: An outlier of £8m in reported sales was removed from baseline results, as it exceeds the highest single value reported since by more than three times.

Largest value	£2.3m	£825k	£2m	£1.5m	£320k	£3m	£700k	£255k	£370m	£2m	£500k	£1.5m	£700k	£250k	£400k

Source: Technopolis, based on data from UEZ surveys 2021-23

Businesses were also asked to share the value of external funding from awarded grants, equity investment and loans from the 12 months leading up to each survey round. The combined data from 2021 to 2023 is summarised in Table 10, below. As noted in the latest annual report, the value of reported grants as well as loans increased considerably in 2023 relative to years prior, while the average level of equity investment peaked in 2022.

Table 10: External funding received by UEZ businesses 2021-2023[20]

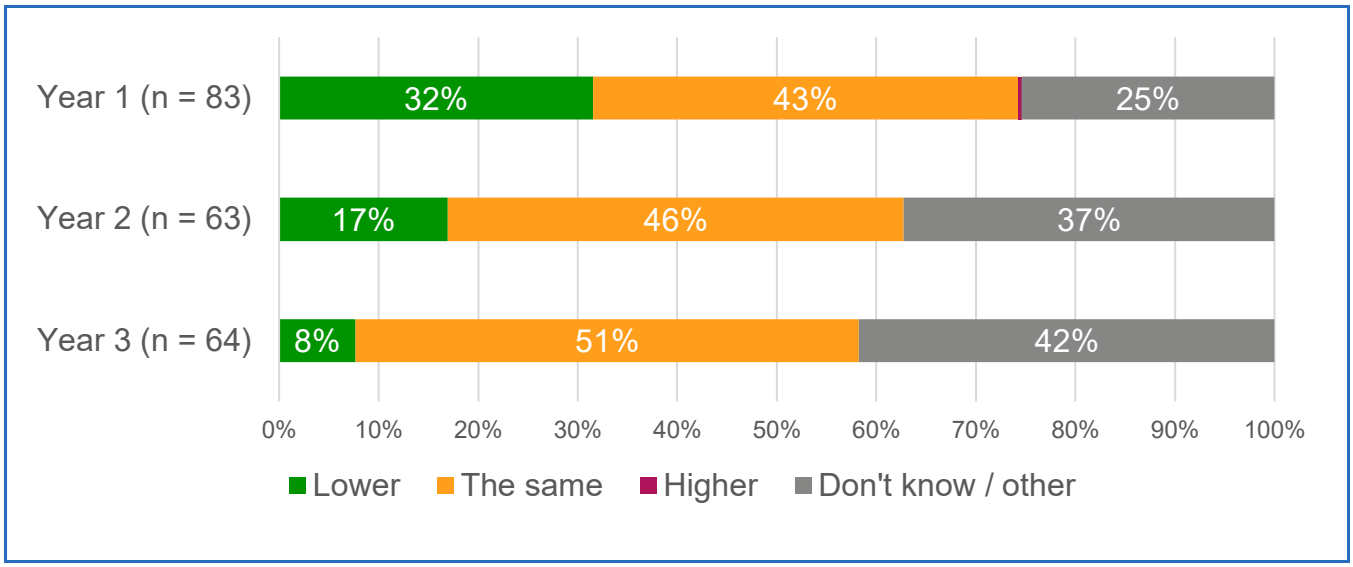
	Grants	Equity investment	Loans
Responding businesses	37	23	12
Total	£10,732,761	£13,528,200	£7,312,900
Average	£ £290,075	£588,183	£609,408
Median	£70,000	£285,000	£50,000
Largest value	£3,000,000	£2,000,000	£5,500,000

Source: Technopolis, based on data from UEZ surveys 2021-23

Surveyed businesses were asked to estimate the level of sales, R&D investment and profit before tax if it were not for the UEZs. Similarly to the projected FTEs, we observe an overarching decline in the perceived positive impact on sales from 2021 to 2023, when equal weights are assigned to the responding population by UEZ. These responses are summarised in Figure 16, below. In the overall population, businesses who reported projected lower sales in lieu of the UEZ in 2023 were located at the Bradfield Centre and Future Space. Similarly to the level of FTEs, the decline in perceived positive impact happens in response to growing levels of businesses opting to indicate not knowing. Based on interview evidence, it appears that UEZ tenants may not associate their occupancy with sales benefits. Several interviewees across UEZs and interview rounds described their main motive for joining the UEZ related to them providing cost-efficient facilities, access to the student body and academic expertise, and collaboration opportunities. Consulted occupants discussed the main outcomes from their UEZ engagement being improved product management and business credibility. It may be that any effect on accumulated sales has been indirect.

Figure 16: Projected difference of sales without UEZ engagement 2021-2023

[20] An outlier of £76.8m was removed from reported equity investment



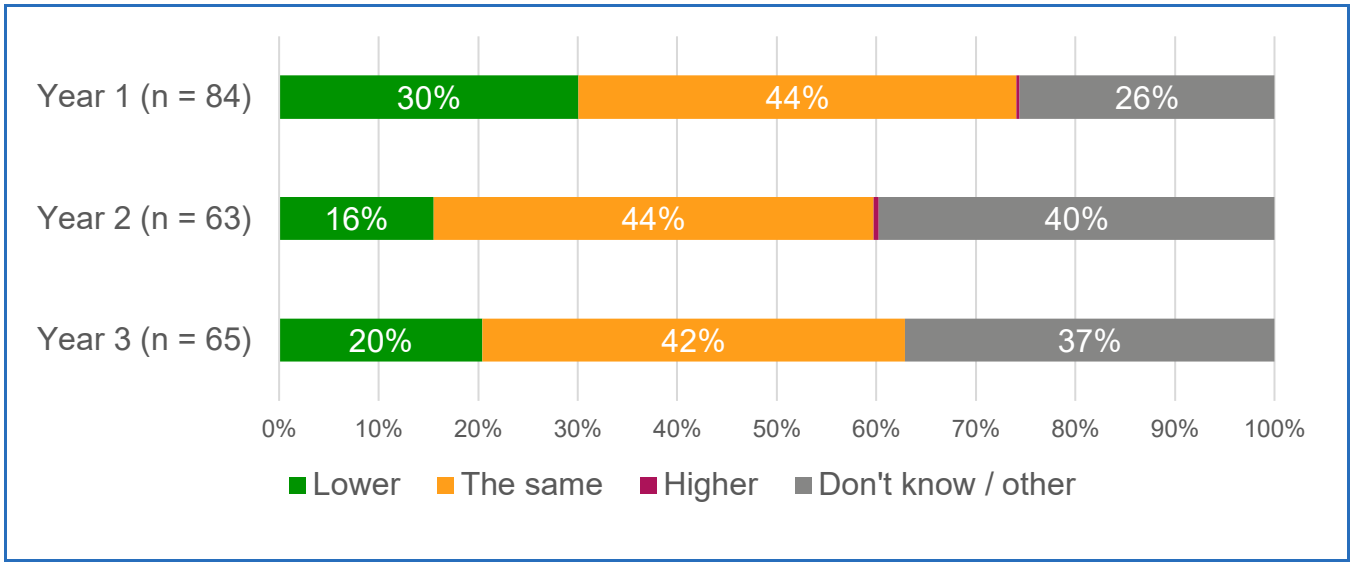
Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

Alt text for Figure 16:

Three stacked bar charts showing the projected difference of sales without UEZ engagement from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: 'Lower', 'The same', 'Higher', 'Don't know/other'. The graph shows that the share of reports of fewer staff without UEZ decreases from Year 1 (32%) to Year 3 (8%). The share of 'The same' responses has remained consistent (43-51%) while the share of 'Other/don't know' responses has increased from Year 1 (25%) to Year 3 (42%).

In addition to sales, occupant businesses were asked to assess the projected impact on R&D investment in lieu of the UEZ participation. The weighted responses are summarised below in Figure 17. Compared to sales, there is slightly more year-on-year fluctuation in terms of R&D investment. Having said this, those who deemed the UEZ engagement to have been positively impactful were still a minority.

Figure 17: Projected difference of R&D investment without UEZ engagement 2021-2023



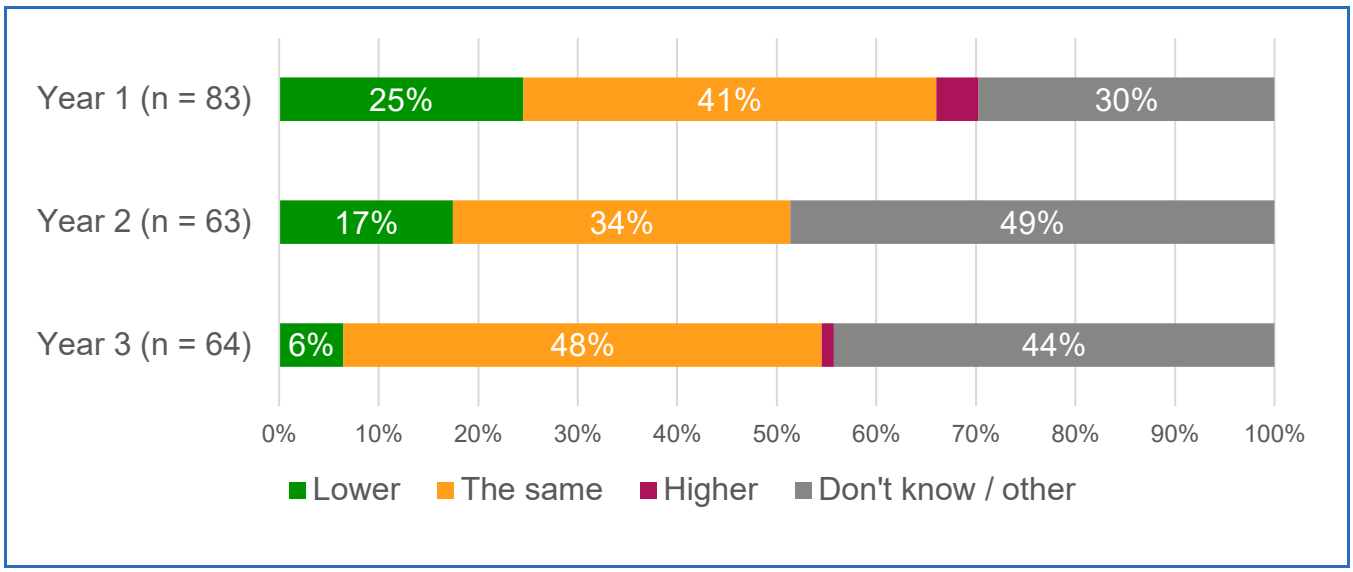
Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

Alt text for Figure 17:

Three stacked bar charts showing the projected difference of R&D investment without UEZ engagement from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: 'Lower', 'The same', 'Higher' and 'Don't know/other'. The graph shows that the share of respondents reporting no difference to R&D investment is consistently highest across years.

Surveyed businesses were asked to assess the difference which the UEZ engagement had made on profit gained before tax in the past 12 months up to the survey rounds in 2021-2023. The weighted responses are summarised in Figure 18, below. As we have seen above, the share of businesses reporting a positive impact has declined from 2021 to 2023, and that a large share of the respondents were not sure about the difference made.

Figure 18: Projected difference of profit before tax without UEZ engagement 2021-2023



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

Alt text for Figure 18:

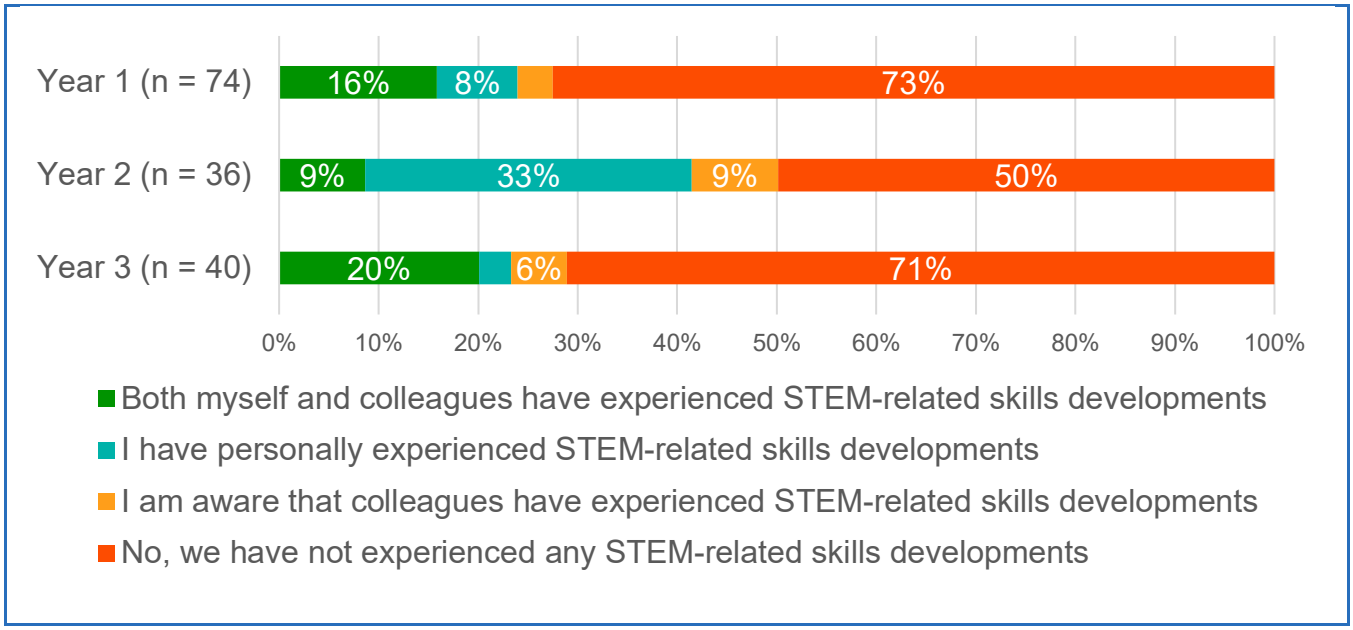
Three stacked bar charts showing the projected difference of profit before tax without UEZ engagement from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: 'Lower', 'The same', 'Higher' and 'Don't know / other'. The graph shows that the share of respondents reporting 'Lower' profit without UEZ has decreased from Year 1 (25%) to Year 3 (6%).

Experience of STEM-related skills developments among UEZ businesses

Finally, UEZ occupants were asked whether they had experienced an increase in STEM-related skills, either themselves, among their colleagues or both. The weighted average of the

responses is summarised below in Figure 19. Based on the results, 19-24% of respondents report some level of STEM-related skills benefit, while 27-65% report no skills gains linked with their UEZ tenancy. There is a substantial decrease in the proportion reporting skills gain in last year, compared with Year 2. Of those who reported increased STEM-related skills, most identified the learning to have occurred with themselves, at least for two of the three years.

Figure 19: Experience of STEM-related skills developments among UEZ businesses 2021-2023



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

Alt text for Figure 19:

Thee stacked bar charts showing the experience of STEM-related skills developments among UEZ businesses from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: 'Both myself and colleagues have experienced', 'I have personally experienced', 'I am aware that colleagues have experienced', and 'No, we have not experienced any'. The responses of no STEM-skill increases were most common across all three years.

Econometric analysis

In this section, we assess the impacts of the UEZ pilot on outcome variables by observing the changes in businesses performance for beneficiaries and non-beneficiaries over time. The analysis is based on data across all UEZs, except for Sensor City where monitoring data was not available for this study.

To perform the econometric analysis, we created a 'counterfactual' group showing the likely trajectory of business performance in the absence of the UEZs support. The comparison group of non-beneficiaries is drawn from the wider business population in the Business Structure Database (BSD) using a method of Propensity Score Matching (PSM). This statistical method

calculates the probability of receiving the treatment based on observable characteristics (such as location, age, industry) and matches each beneficiary to another non-beneficiary business with a similar propensity score. This step ensures that the changes in businesses performance are not influenced by differences in characteristics prior to the interventions. See Appendix C for descriptive statistics on beneficiaries and the wider business population prior to PSM.

To assess the impacts on outcome variables, we implemented a Difference-in-Difference model which compares the outcomes of beneficiary and matched non-beneficiary group before (first difference) and after the intervention (second difference). As such, the model estimates whether beneficiaries have improved their businesses performance and to what extent they have outperformed other similar businesses who did not receive support but are otherwise similar. As the first year of engagement with UEZ varies across businesses, the treatment effects are staggered across all years. For a more detailed explanation of the methodology refer to Appendix A, Section A.1.10.

The analysis below presents the results from the econometric model after PSM. We denote the first year of engagement as t+0 and we show the change in business performance in every period from t+1 to t+6. The figures present the median change in outcome variables since the baseline in both absolute terms (i.e., panel a) and percentage terms (panel b). The baseline (denoted as ‘B’) is defined as the two-year average prior to the first year of treatment. The tables with the difference-in-difference coefficients present the changes in outcome variables from the baseline for beneficiaries (over and above the values for the ‘counterfactual’ group of matched non-beneficiaries). The figures show the median estimates across all businesses for each period and the median across all periods from t+0 to t+6 (marked as ‘Median’ in the tables).

The median difference-in-difference estimate presented at the end of each table show the median annual change in outcome variable for businesses that were treated compared to the median annual change they would have experienced had they not be treated, after controlling for differences in businesses characteristics (such as age, location, and industry). The sensitivity analysis in Appendix D presents a comparison between the median and average treatment estimates.

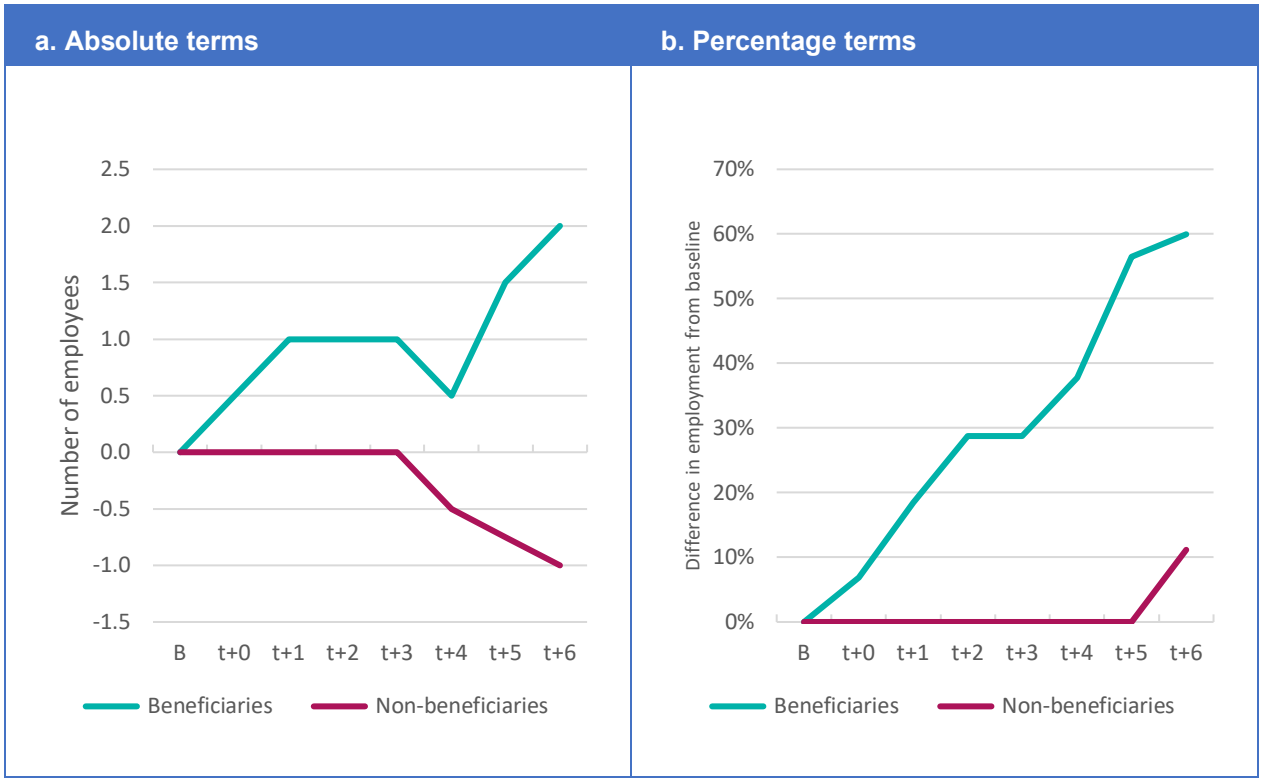
Employment

Overall, the analysis indicates that beneficiary businesses have experienced a steady increase in employment, with a median increase of one employee per business per year (over and above non-beneficiaries) (see Table 11). The median annual increase in employment experienced by beneficiary businesses is 13 percentage points (ppt) higher than that of non-beneficiaries. These median figures show the median annual impact of the funding based on data over the entire treatment period.

When we observe the change in performance over time, we note that beneficiaries added one new employee one year after the first engagement with the UEZs, rising to two new employees after six years (see Figure 20). In comparison, matched non-beneficiaries with similar

characteristics experienced a slight decline in employment compared to their baseline position. Although the increase of two employees may appear modest in absolute numbers, this occurs in a context of a population comprising (mostly) of SMEs. Considering the increase compared to the recorded baseline employment, the figure translates to a 60% increase to the accumulated employment.

Figure 20: Differences in employment from the baseline for beneficiaries and non-beneficiaries



Source: Business Structure Database (BSD)

Alt text for Figure 20:

Two bar graphs illustrating the difference in employment from the baseline for beneficiaries and non-beneficiaries. The graph on the left represents this in absolute terms and the graph on the right represents this in percentage terms. From left to right, the two lines in both graphs represent 'Beneficiaries' and 'Non-beneficiaries'. The graphs show that beneficiaries have employed more staff relative to non-beneficiaries.

Table 11: Difference-in-Difference coefficients for employment

	t+0	t+1	t+2	t+3	t+4	t+5	t+6	Median
Coefficient (absolute)	1	1	1	1	1	2	3	1
Coefficient (ppt)	7ppt	18ppt	29ppt	29ppt	38ppt	56ppt	49ppt	13ppt

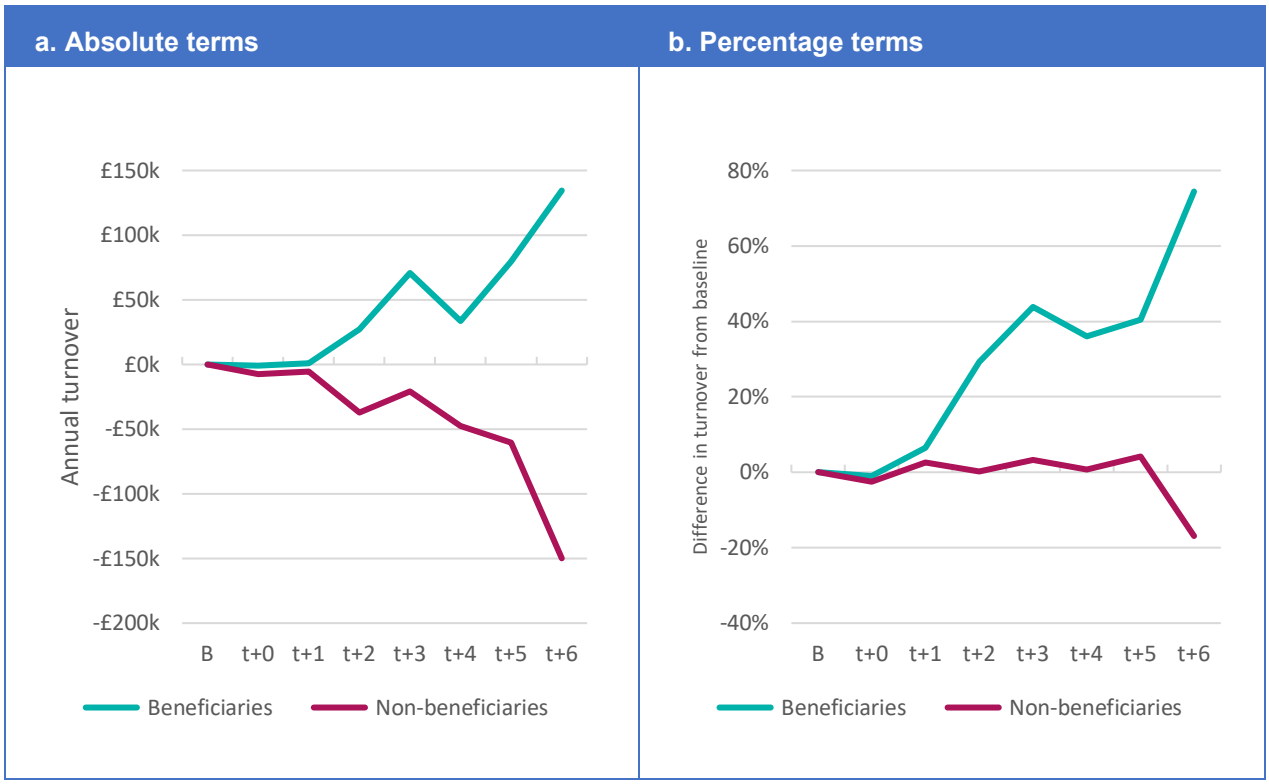
Sample size*	318	226	194	165	123	96	71	318

Source: Business Structure Database (BSD). NB: * The sample size is split equally between beneficiaries and non-beneficiaries.

Turnover

In terms of turnover, the econometric analysis shows that beneficiary businesses have experienced a steady growth, with a median increase of £31k per business per year (over and above non-beneficiaries) (see Table 12). In the year after receiving UEZ support, the median growth in turnover for beneficiary businesses was £1k (7% increase), rising to £134k (74% increase) after six years (see Figure 21). In comparison, over the same period, matched non-beneficiaries experienced a steady decline in turnover compared to their baseline position. The gap between the two groups increased in each subsequent period after the first treatment, peaking at £284k in favour of beneficiaries six years after the first UEZ engagement.

Figure 21: Differences in turnover from the baseline for beneficiaries and non-beneficiaries



Source: Business Structure Database (BSD)

Alt text for Figure 21:

Two bar graphs illustrating the differences in turnover from the baseline for beneficiaries and non-beneficiaries. The graph on the left represents this in absolute terms and the graph on the right represents this in percentage terms. From left to right, the two lines represent 'Beneficiaries' and 'Non-beneficiaries'. The graphs show that beneficiaries have performed better relative to non-beneficiaries.

Table 12: Difference-in-Difference coefficients for Turnover

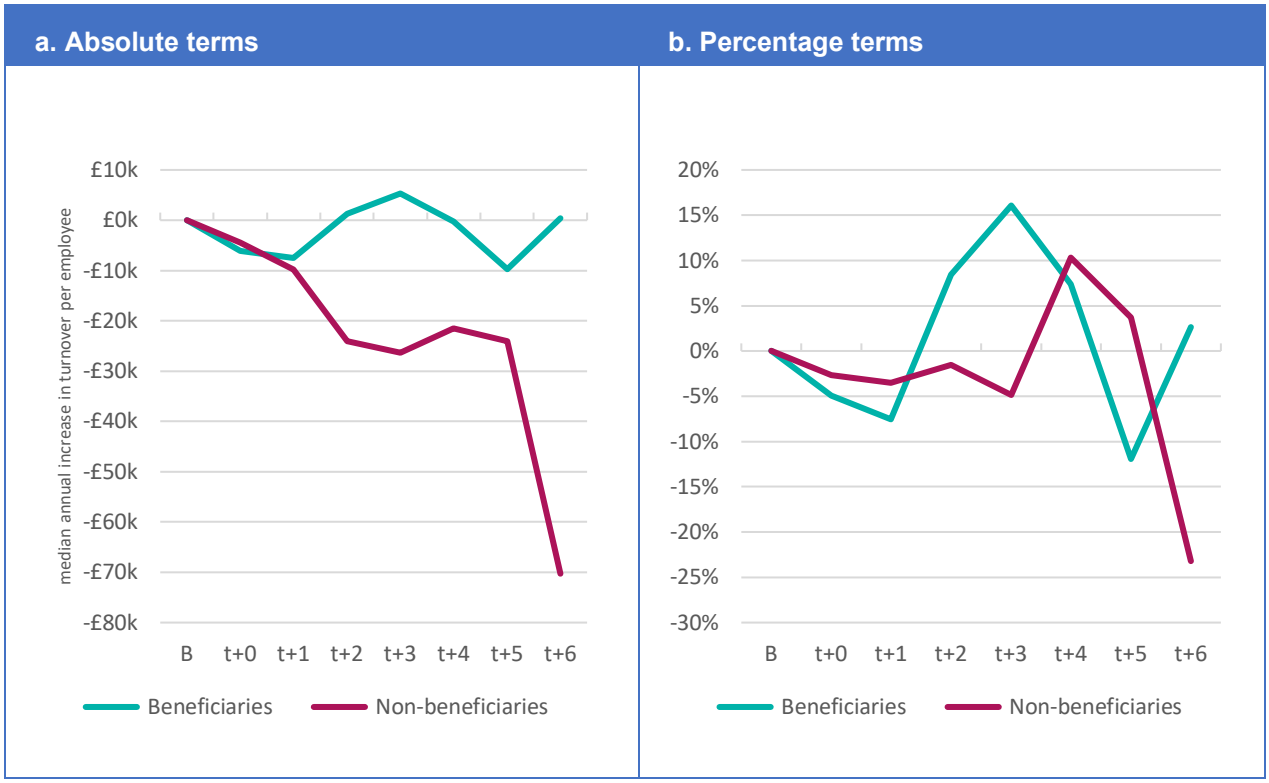
	t+0	t+1	t+2	t+3	t+4	t+5	t+6	Median
Coefficient (absolute)	£7k	£6k	£65k	£92k	£81k	£140k	£284k	£31k
Coefficient (ppt)	2ppt	4ppt	29ppt	40ppt	35ppt	36ppt	91ppt	14ppt
Sample size*	318	226	194	165	123	96	71	318

Source: Business Structure Database (BSD). NB: * The sample size is split equally between beneficiaries and non-beneficiaries.

Turnover per employee

We find that the median annual labour productivity benefit is £5k per business, which is defined as the median annual increase in turnover per employee by which beneficiaries outperform non-beneficiaries over the entire treatment period from t+0 to t+6 (see Table 13). Both beneficiary and non-beneficiary businesses experienced a decline in labour productivity one year after the first treatment. Beneficiaries saw an improvement in subsequent periods, while non-beneficiaries experienced a notable decline over the same period (see Figure 22).

Figure 22 Differences in turnover per employee from the baseline for beneficiaries and non-beneficiaries



Source: Business Structure Database (BSD)

Alt text for Figure 22:

Two bar graphs illustrating the differences in turnover per employee from the baseline for beneficiaries and non-beneficiaries. The graph on the left represents this in absolute terms and the graph on the right represents this in percentage terms. From left to right, the two lines represent 'Beneficiaries' and 'Non-beneficiaries'. The graphs show that the difference per employee favours beneficiaries.

Table 13 Difference-in-Difference coefficients for turnover per employee

	t+0	t+1	t+2	t+3	t+4	t+5	t+6	Median
Coefficient (absolute)	-£2k	£2k	£25k	£32	k21	£14k	£71k	£5k
Coefficient (ppt)	-2ppt	-4ppt	10ppt	21ppt	-3ppt	-16ppt	26ppt	-5ppt
Sample size*	318	226	194	165	123	96	71	318

Source: Business Structure Database (BSD). NB: * The sample size is split equally between beneficiaries and non-beneficiaries.

Economic impacts per UEZ

Table 14 shows the median difference-in-difference coefficients per UEZ. As with the analysis above, these coefficients measure the median annual change from the baseline for beneficiaries (over and above the change observed for matched non-beneficiaries) across the entire treatment period from t+0 to t+6.

The analysis indicates that beneficiary businesses in DHEZ experienced the strongest growth in employment, with a median annual increase of three new employees per business (over and above non-beneficiaries). The median annual growth is slightly lower in Future Space, and zero in both Bradfield Centre and Ingenuity Centre.

There is a positive median annual growth in turnover across all UEZs. At the individual UEZ level, however, we note a fair degree of variance: the strongest performance was observed in Future Space (£84k) and Bradfield Centre (£44k) with slightly more modest increases in DHEZ (£1.3k) and Ingenuity Centre (£1k). When we observe the figure for labour productivity (i.e., turnover per employee), we note positive performances across all UEZs, except for DHEZ where the difference-in-difference coefficient is negative (-£38k median change from the baseline per business per year).

Table 14: Median Difference-in-Difference coefficients, per UEZ

	Bradfield Centre	Future Space	Ingenuity Centre	DHEZ	All
Absolute terms					

Employment	-	1	-	3	1
Turnover (£k)	44	84	1	1.3	31
Turnover per employee (£k)	6	1	27	-38	5
Percentage terms (ppt)					
Employment	-	35ppt	9ppt	26ppt	13ppt
Turnover	19ppt	25ppt	-8ppt	-14ppt	14ppt
Turnover per employee	18ppt	-10ppt	-9ppt	-38ppt	-5ppt
Sample size *	106	130	62	20	318

Source: Business Structure Database (BSD). NB: * The sample size is split equally between beneficiaries and non-beneficiaries.

Cost-effectiveness of the programme

We estimated the cumulative employment and Gross Value Added (GVA) earned by beneficiary businesses over the entire treatment period up to six years after the first point of engagement with UEZs. We implemented the following two approaches:

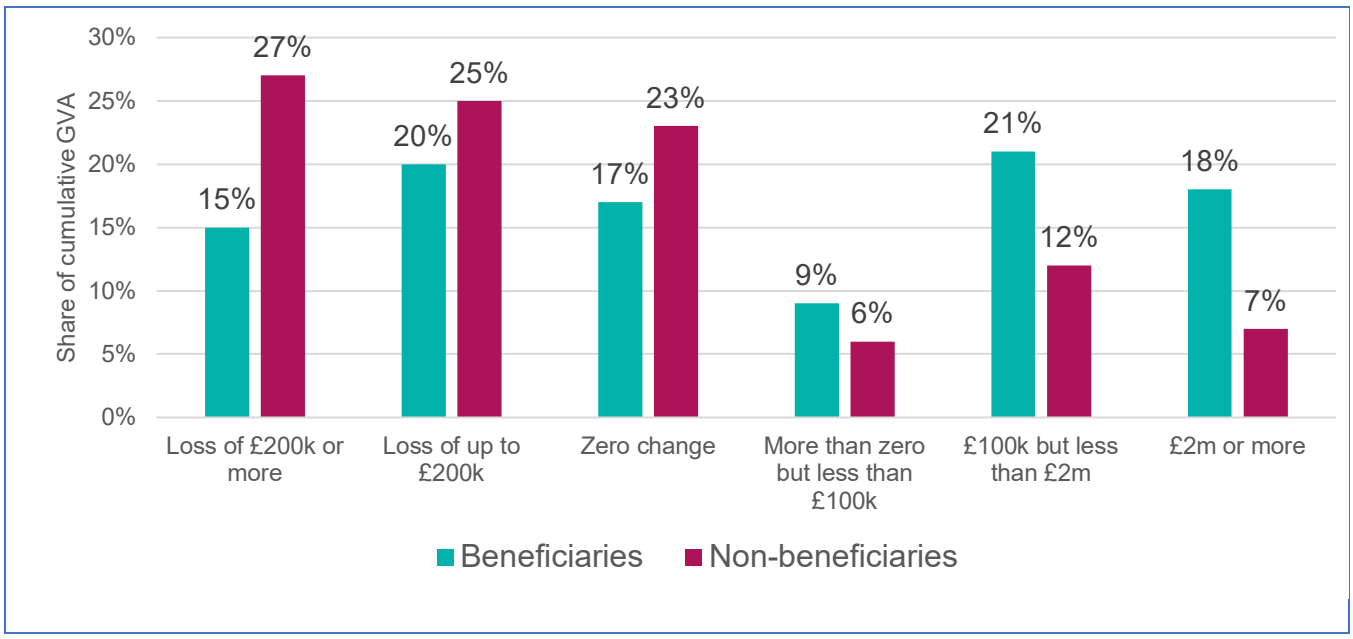
- To estimate the cumulative GVA, we multiplied the BSD turnover figures by the corresponding ONS GVA conversion factors (see Appendix D). We then estimated the annual increase in every post treatment period from the baseline and summed across all periods.
- To estimate the cumulative employment, we estimated the difference in employment between the latest available data and the baseline. This approach ensures that additional workers who remain with the same company in each post treatment period are counted only once.

The charts below show the distribution of cumulative GVA and employment over the entire treatment period. The analysis includes all matched beneficiaries in the sample, including both SMEs and large businesses. As shown in Figure 23, a higher share of beneficiaries than non-beneficiaries have experienced an increase in their cumulative GVA over the treatment period (48% vs 25%). However, the analysis also indicates that 35% of beneficiaries have experienced a decline in their cumulative GVA and further 17% of beneficiaries have experienced no change in their GVA since the baseline.

In terms of cumulative employment, the analysis suggests that 45% of beneficiaries have experienced an increase in employment levels since the baseline, compared to 18% of non-beneficiaries. However, we also note that 19% of beneficiaries have decreased in size,

experiencing a median decrease of two employees per business[21]. Further 35% of beneficiaries have experienced no change in cumulative employment since the baseline.

Figure 23: Distribution of cumulative GVA over the entire treatment period



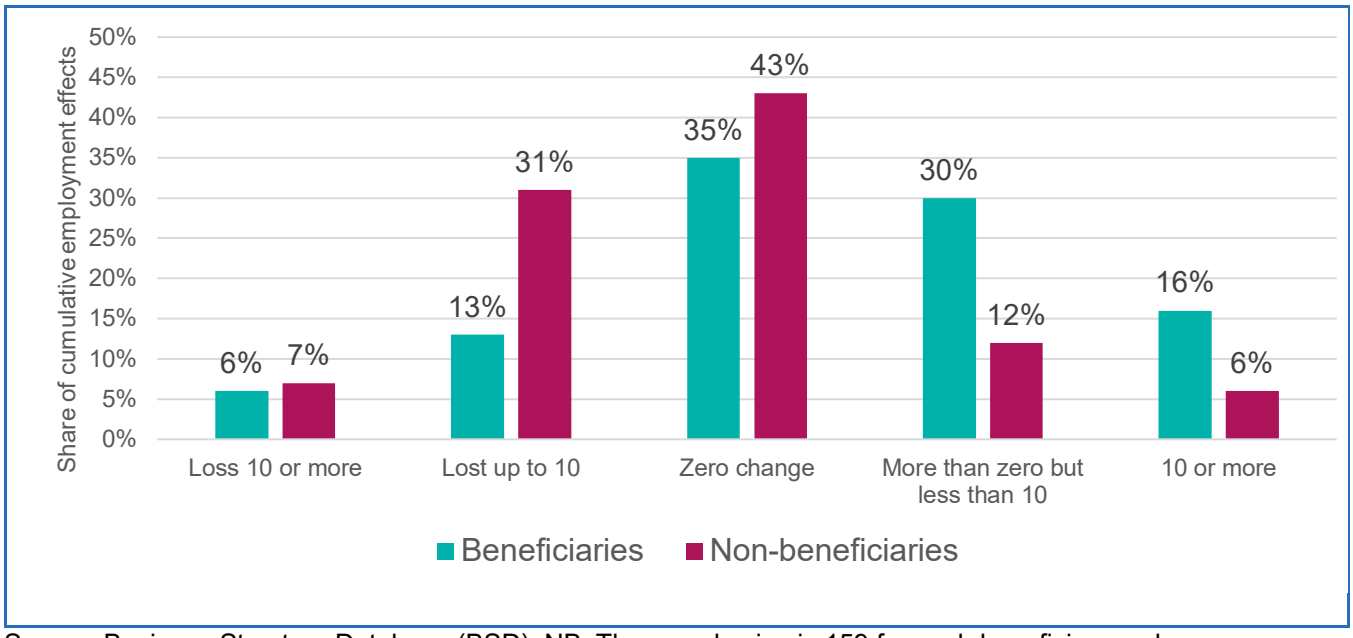
Source: Business Structure Database (BSD). NB: The sample size is 159 for each beneficiary and non-beneficiary group.

Alt text for Figure 23:

A double bar chart showing the distribution of cumulative GVA over the entire treatment period as a percentage for beneficiaries (left) and non-beneficiaries (right). The categories for cumulative GVA from left to right are: 'Loss of £200k or more', 'Loss of up to £200k', 'Zero change', 'More than zero but less than £100k', '£100k but less than £2m', and '£2m or more'. The graph shows that non-beneficiaries were more likely to demonstrate losses, while beneficiaries were more likely to demonstrate positive values.

Figure 24: Distribution of cumulative employment over the entire treatment period

[21] The average decrease is 192 employees per business, indicating the presence of large outliers in the sample of businesses that have decreased in size.



Source: Business Structure Database (BSD). NB: The sample size is 159 for each beneficiary and non-beneficiary group.

Alt text for Figure 24:

A double bar chart showing the distribution of cumulative employment over the entire treatment period as a percentage for beneficiaries (left) and non-beneficiaries (right). From left to right, the categories for cumulative employment are: 'Loss 10 or more', 'Lost up to 10', 'Zero change', 'More than zero but less than 10', and '10 or more'. More beneficiaries than non-beneficiaries demonstrated growth in employees.

The analysis below presents the aggregated data, broken down by employment size to account for the presence of large outliers in the dataset which significantly skew the overall impact figures. We also present the overall estimates for the whole sample excluding the impact of several outliers.

The analysis indicates that the value of GVA accumulated since the baseline is £3.4 million per beneficiary SME business. After accounting for additionality by netting off the growth in GVA observed for the matched non-beneficiary businesses, we find that the net cumulative GVA is £3.3 million per beneficiary SME businesses, or £498 million across all SMEs in the sample (n=149). In comparison, ten large beneficiary businesses have earned a net cumulative GVA of £236 billion since the baseline. This figure is largely driven by outliers in the dataset that account for a significant proportion of the aggregate value. When we exclude all outliers, which are defined as values that are two standard deviations above or below the mean, **the total net cumulative GVA is £376 million** (n=153).

In terms of the cumulative changes in employment since the baseline, we observe positive growth for SME beneficiaries but a notable decline for large beneficiary businesses. The analysis indicates that the cumulative growth in employment is six new employees per beneficiary SME businesses, rising to eight employees after adjusting for additionality. Collectively, SMEs in the sample have added 1,126 new employees since the baseline that

can be attributed to UEZs. However, over the same period, large beneficiary businesses have decreased in size which is largely driven by outliers in the dataset. When we exclude all outliers, which are defined as values that are two standard deviations above or below the mean, **the total net cumulative employment is 751** (n=152).

Appendix D includes additional sensitivity analysis. The appendix shows the extent to which the findings change when the full sample of beneficiaries is included in the analysis, including both matched and non-matched businesses after PSM. To measure the level of sensitivity in our findings, we compare the results under three separate scenarios: i). using the raw data records from all companies without any modifications; ii). applying an inverse employment weighting method which reduces the skewness from large company outliers; and iii). removing outliers defined as values two standard deviations above or below the mean.

Table 15: Cumulative change in GVA and employment over the treatment period

	SMEs	Large businesses	Total	Total excluding outliers
Gross Value Added				
Cumulative GVA per beneficiary business £m *	3.4	23,556	1,485	2.4
Net cumulative GVA per business £m	3.3	23,573	1,486	2.5
Total net cumulative GVA £m	498	235,734	236,232	376
Sample size of beneficiary businesses	149	10	159	153
Employment				
Cumulative employment per beneficiary business*	6	-521	-27	4
Net cumulative employment per business	8	-545	-27	5
Total net cumulative employment	1,126	-5,454	-4,328	751
Sample size of beneficiary businesses	149	10	159	152

Source: Business Structure Database (BSD). NB: * Cumulative growth estimates for beneficiaries from t+0 to t+6.

Table 16 shows the cumulative changes in GVA and employment for each UEZ, based on the full sample of SMEs and large beneficiary businesses. Outliers, which are defined as values two standard deviations above or below the mean, are excluded from the analysis to remove the extreme skewness from the final results. Appendix D presents further sensitivity analysis which shows the extent to which the main findings are influenced by modifications to the methodology or sample size.

The analysis indicates that the total net cumulative GVA values that can be attributed to the UEZ are highest in Bradfield Centre (£240 million) and Future Space (£116 million), followed by relatively lower benefits in DHEZ (£6.4 million) and Ingenuity Centre (£5 million). The total net cumulative GVA benefit across all businesses who were identified in BSD is £376 million. If we assume that beneficiaries who were not identified in BSD experience the same average growth per business as those who were matched, the total net cumulative GVA benefits increases to £768 million.

To estimate the cost-effectiveness of the funding, we compare the scaled-up GVA benefits to the cost of investment, including the values of both public spending and matched private sector leverage. We find that the cost-effectiveness ratio is 1:16 across all UEZ, suggesting that there is £16 in net GVA benefits for every £1 invested in UEZs. The GVA benefits to investment cost ratios range from 1:28 in Bradfield Centre to 1:1 in Ingenuity Centre.

Similarly, for every £1 million invested in UEZs, the funding has helped to create 32 jobs. The employment benefit relative to the cost of investment ranges from 1:69 in Future Space to 1:2 in Ingenuity Centre.

Table 16: Cumulative change in GVA and employment for SMEs and large business beneficiaries over the entire treatment period, per UEZ (excluding outliers)

	Bradfield Centre	Future Space	Ingenuity Centre	DHEZ	Total
Gross Value Added					
Cumulative GVA per beneficiary business £m *	4.9	1.5	0.26	0.169	2.4
Net cumulative GVA per business £m	4.8	1.8	0.13	0.642	2.5
Total net cumulative GVA £m	240	116	5.0	6.4	376
Total net cumulative GVA £m (after adjustment **)	624	223	5.5	11	768
Cost of investment, £m	22	13.4	6.4	7.1	48.9
Cost effectiveness ratio	1:28	1:17	1:1	1:2	1:16

Sample size of beneficiary businesses	50	64	29	10	153
Employment					
Cumulative employment per beneficiary business *	5.9	5.4	1.5	5.2	4.2
Net cumulative employment per business	4.4	7.5	0.3	5.4	4.9
Total net cumulative employment	213	479	10	54	751
Total net cumulative employment (after adjustment**)	578	922	14	92	1,543
Cost of investment, £m	22	13.4	6.4	7.1	48.9
Cost effectiveness ratio	1:26	1:69	1:2	1:13	1:32
Sample size of beneficiary businesses	48	64	30	10	152

Source: Business Structure Database (BSD). NB: * Cumulative growth estimates for beneficiaries from t+0 to t+6. Note: ** The figures are scaled to reflect the number of beneficiary businesses that were not identified in BSD. We assume that they experience the same average growth as those who were matched.

Summary – What impact has the programme had?

Overall, the evidence suggests that the UEZ programme has generated some admittedly limited but useful impacts in a variety of domains, outlined below. However, the level of impact created appears to have been declining over the evaluation period.

Has there been an increase in university-business engagement as a result of the UEZ pilot?

- Early in the evaluation period, it seemed that being a UEZ tenant increased the propensity to use the host university's research and facilities. However, as time has progressed, it seems that the UEZ has become less significant as a driver for engagement with the university's facilities.
- The annual client surveys suggest the majority of tenants do not engage in formal research activities or knowledge exchange with the host university. Where such links did occur, they tended to centre on R&D projects, although, the number has fallen over time.

- The surveys show a greater tendency for UEZ businesses to undertake more informal RDI interactions (though still a minority). Those that have engaged in such exchanges have found it valuable but, again, this type of activity has been declining over time.
- UEZ involvement has increased tenant businesses' propensity to engage more broadly with their host university. These engagements have most often taken the form of student placements, graduate recruitment and employing university staff.

Has there been an increase in co-operation between universities and LEPs as a result of the UEZ pilot?

- Collectively, the level of engagement by UEZs with LEPs remains low and there has been no impact on host universities' cooperation with LEPs. Most UEZs have an arm's length relationship with their LEP and there are no evident links with individual UEZ clients.
- More generally, a minority of UEZ-supported businesses do engage with the wider public sector. Examples of organisations engaged with include research and innovation funders like Innovate UK and various public sector clients such as the NHS or local authorities. However, it is unclear how far the UEZ programme has been the main contributing factor in these interactions.

Has the UEZ pilot led to better business and economic performance both for those who worked with the five UEZs and the LEPs?

- Overall, while most survey respondents have a positive view of their UEZ engagement, the majority do not consider that relationship to have had a substantive impact on their business performance, in terms of income, employment, investment or profitability. Consulted tenants appear to attribute the value of UEZ to more direct elements, such as credibility and access to students, graduates and academic experts.
- While a minority of UEZ clients state that the UEZ programme has helped improve their business performance, the proportion reporting this positive outlook has fallen over time.
- That being said, the econometric analysis finds that UEZ beneficiaries compare favourably to a matched sample of untreated businesses with similar characteristics. In the case of employment and revenue, the difference to the untreated population appears to increase gradually, suggesting that the advantage offered by UEZ tenancy increases over time. We find that the net cumulative GVA is £768m after adjustment compared to an investment cost of £48.9m, giving us 1:16 return on investment.

Overcoming market failures

This section addresses the research question did the funding of incubator/grow-on space successfully overcome the market failure?

What market failures were the UEZs looking to tackle?

As Table 17, below, shows, as place-based initiatives each of the UEZs had their own local market failures which they hoped the programme would help address. There are however two overlapping market failures which most of the UEZs all share:

- A lack of connectedness between innovation actors in the university and business communities respectively. This has stifled the development of the local innovation ecosystem, characterised by difficulties in commercialising university research, and technology start-ups lacking the infrastructure, knowledge and social capital needed to scale-up their businesses.
- A shortage of good quality and/or affordable incubation space for local entrepreneurs and start-ups.

Table 17: Identified local market failures in each UEZ's proposal (note that no proposal available for the Bradfield Centre)

UEZ	Local market failures, as identified in each UEZ's proposal	Extent to which UEZ has successfully tackled the market failures
DHEZ	Demand for health services is growing faster than the public sector's ability to meet demand. Digital health and telehealth provide a way of increasing productivity while also enhancing the quality of care. It, however, is an underdeveloped industry and requires inter-sector collaboration (e.g. public health and telecoms). Occupancy rates of a current workspace in the area are low and unable to	According to local stakeholders DHEZ has played an important role in helping create a better-connected digital health sector locally. DHEZ has undertaken a considerable amount of engagement activity with the business community including events, webinars and newsletters. Consequently, there is now good private sector awareness of the UEZ, helping to better connect business and university stakeholders. As a physical space, DHEZ has been a conduit for greater interaction between local players in the digital health ecosystem. While stakeholders have commented on the local area having plenty of spaces for university and business stakeholders to meet, DHEZ has provided an important signal to the ecosystem, demonstrating there is now dedicated space for digital health interactions to occur. Nevertheless, interviewees have spoken of how the

	compete with other general managed workspaces.	lack of revenue funding has meant that DHEZ has not been able to facilitate as much interaction and engagement as it would have wanted. DHEZ is not necessarily competing successfully with other innovation incubators in the area. Local stakeholders do not view DHEZ as being the best quality innovation incubator in the area, with others like Nexus in Leeds being better rated.
Sensor City	Investment in the electronic systems sector is thinly spread, with insufficient alignment and connectivity between industry, academia and funding bodies. There is disconnect between industry (especially SMEs), academic research into sensors, and access to facilities for research and development. Skills shortages in the sensor market. Difficulties in bridging the "Valley of Death" sensor innovation, including high prototype costs.	Sensor City has been closed for much of the evaluation period and therefore has not been able to help meaningfully address the market failures listed at proposal stage. Sensor City may, however, have contributed indirectly to improved connectivity and collaboration between businesses and academia. When developing Sensor City, the centre's managing body created a brand to attract interest from academics and businesses. This brand has been successful, attracting considerable interest which the University of Liverpool has serviced at alternative premises not paid for through the UEZ programme. Nevertheless, the UEZ-funded building itself does not appear to have done much to improve university-business interaction.
Future Space	A lack of private investment in supported office, workshop and laboratory space, including wet labs. The demand for specialist business support and flexible employment space was higher than the	Stakeholders have commented on how Future Space has greatly enhanced the quality of commercial workspace in the area. The lab space in particular is very well regarded and considered to be one of Future Space's main selling points. Such is the Centre's reputation, it has also hosted international delegations. The provision of a quality workspace is all the more important given the close of the University of Exeter's Innovation Centre.

	capacity at the time of the project bid. A need for greater co-ordination between key players in the local innovation ecosystem to help boost collaboration.	Future Space also appears to have helped boost connections between different players in the local innovation ecosystem. For example, it has established links with organisations such as Invest Bath and Bristol, and Tech SW, working with them to run events, and advertise workspace. However, some stakeholders noted that Future Space could benefit from developing closer links to Innovate UK. Interviewed stakeholders have, however, commented on how there are some market failures that Future Space has not been able to address, namely around funding and investment in local businesses.
Ingenuity Centre	Opportunities for SMEs to exploit and commercialise the University's research were not being optimised. At the time of application there was little appetite for the private sector to invest in incubation centres as the returns do not justify the capital outlay.	From the evidence, it is not entirely clear the extent to which the Ingenuity Centre has successfully tackled all of the market failures noted in their application. University stakeholders believe that the UEZ programme has helped create new opportunities for student businesses at least to commercialise research and business ideas. The Ingenuity Centre has given students access to additional insights on how to grow a business and crate a start-up. The Centre has also run competitions which have provided funding to student businesses. There was a belief amongst stakeholders that without the Ingenuity Centre, there would have been fewer opportunities for students at Nottingham to start their own ventures. However, some external stakeholders within the business community alluded to how the UEZ programme might not have been a significant contributing factor to changes seen in the local innovation and business ecosystem. The programme is not well known amongst stakeholders, and other place-based policies such as Investment Zones and the East Midlands Freeport may be playing a bigger role locally.

Source: Technopolis analysis

As noted above, no proposal for the Bradfield Centre is available so there is little evidence on which market failures it was looking to address. Nevertheless, interviewed stakeholders have highlighted their belief that the Bradfield Centre has offered some added value. In particular, it provided good networking and collaboration space, and therefore enabled knowledge exchange. They have also provided space for companies to develop and evolve. Stakeholders noted that while the Bradfield does not serve all the needs of the local innovation community, it

is part of a wider Cambridge-based innovation and incubation space base which collectively meet local needs well.

How successfully have the UEZs tackled the market failures?

Poor connectedness of local innovation actors

The UEZs have been successful in this respect. Nearly all have expanded the physical spaces available locally, which has helped initiate and foster interactions between local businesses and university stakeholders and researchers. In the case of Future Space, the UEZ programme has also served as a way of connecting local innovation actors to more regional players, and has also been a conduit to attracting international interest to Bristol.

Sensor City is the only UEZ not to have meaningfully contributed to an improved connectedness of local innovation actors. With it having been closed for much of the evaluation period, it did not provide physical space for interactions between different stakeholders.

Shortage of good quality and affordable incubation space

The programme has seen mixed success against this market failure. Some UEZs, most notably Future Space, have greatly enhanced the provision of incubation space in their locality. For the other UEZs, while they have provided good quality workspace, stakeholder feedback is that they have not had a transformational effect on either the quality or affordability of incubation space available locally.

Summary - did the funding of incubator/grow-on space successfully overcome the market failure?

- Collectively, the UEZs seem to have been effective in addressing market failures around the lack of connectedness and collaboration between local innovation actors.
- The programme has been much less effective in meaningfully addressing shortages in good quality and affordable incubation space at a wider local level.

Programme additionality

This chapter examines the research question **has the UEZ pilot led to better business and economic performance both for those who worked with the five UEZs and the LEPs? What other factors may have contributed?** It specifically examines the second half of this question, exploring how far the programme may be responsible for outcomes seen, or whether other factors may have been equally important.

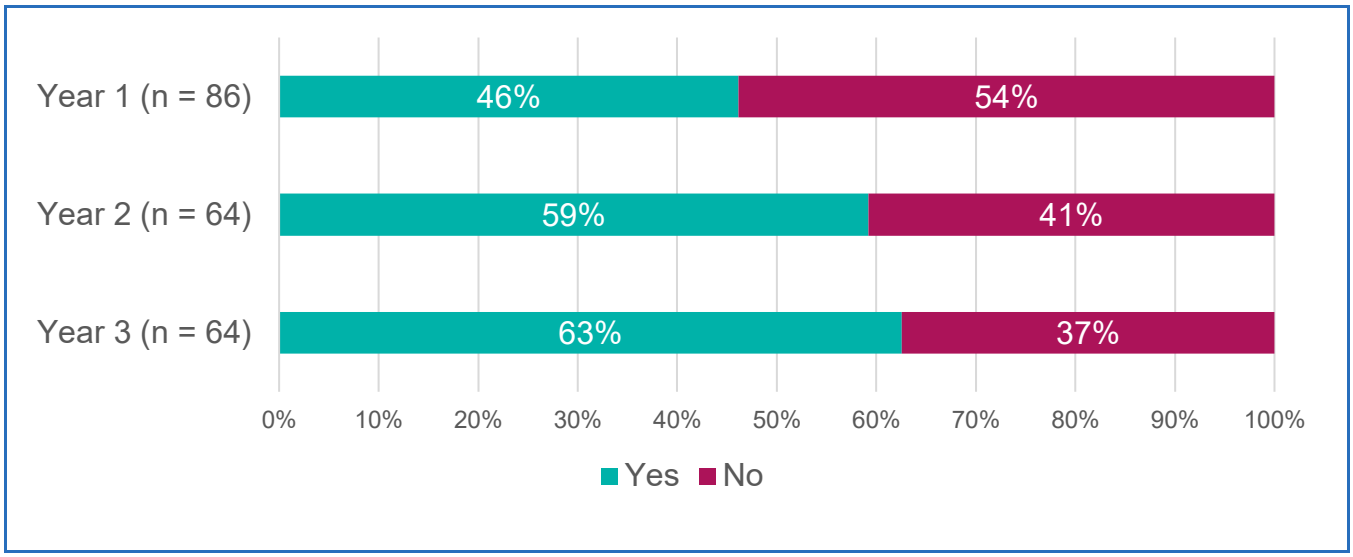
Tenant perceptions on the UEZ's added value

We approach the added value of the UEZs via the following characteristics: the uniqueness of the UEZs compared to incubators in general, the UEZs as a determinant for business location, and the overall worthwhileness of the UEZ participation. These views were generally collected from the three years of surveys, with added evidence collected from business consultations via interviews.

UEZs and broader support provision

To understand how the occupant businesses perceive the UEZs to which they are affiliated, we asked them via surveys whether they deemed the offer at the UEZ to differ from an incubator. Based on the weighted responses, there is a growing perception among occupant businesses across the UEZs that the centres differ from a typical incubator in their offers (Figure 25). By UEZ, this perception is particularly strong at Future Space and Bradfield Centre, where more than half of responding businesses indicated that they found the centres to differ. This being said, the difference is not great for the DHEZ and the Ingenuity Centre; 40% and 43% of the population across all three years deemed the offer to be unique.

Figure 25: UEZ business' assessment of whether the offer at the UEZ differs from that of a typical incubator (n = 214)



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

Alt text for Figure 25:

Three stacked bar charts showing UEZ business' assessment of whether the offer at the UEZ differs from that of a typical incubator from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: 'Yes' and 'No'. The graph shows that an increasing share of respondents from Year 1 to Year 3 responded 'Yes', indicating a perceived difference.

The connection to host university was brought up across all UEZs, although there are variations in the concentration of this feedback. Beyond the university connection, there was more variety between UEZs as to the elements which made them stand apart from incubators. Depending on the context, differentiating elements concerned a better sectoral focus, exceptional equipment and facilities, better understanding of business journeys, or the overall culture at the UEZ.

Compared to the other centres, the feedback from businesses at Bradfield Centre was slightly more rounded; the connection to the university had less of a focus but was one of several mentioned aspects. The most common type of element concerned collaborative and community-related elements; businesses indicated a high level of satisfaction with the networks curated by the management team and the overall atmosphere created on site. Within the larger Cambridge Science Park, Bradfield Centre was characterised as a meeting place. It appears that the centre has successfully leveraged the existing innovation ecosystem in Cambridge with connections or networks mentioned by more than half of respondents.

Future Space businesses generally deemed the proximity and access the university resources to offer a unique advantage over a typical incubator. Respondents highlighted elements like networks with academic experts and programmes at UWE, as well as the physical presence on campus. Future Space occupants also deemed the available facilities to be of particularly high quality and relevance. Access to workshops and laboratories of their own and better-standard equipment was said to set Future Space apart from other similar service offers. One respondent assessed that Future Space was one of only two spaces locally with the right type of facilities.

Other recurring themes concerned an enjoyable environment (both aesthetically and socially), a welcome sectoral focus on the technology industry, as well as good quality business services. The combination of all the above was deemed to present the best available option by a few of the responding businesses.

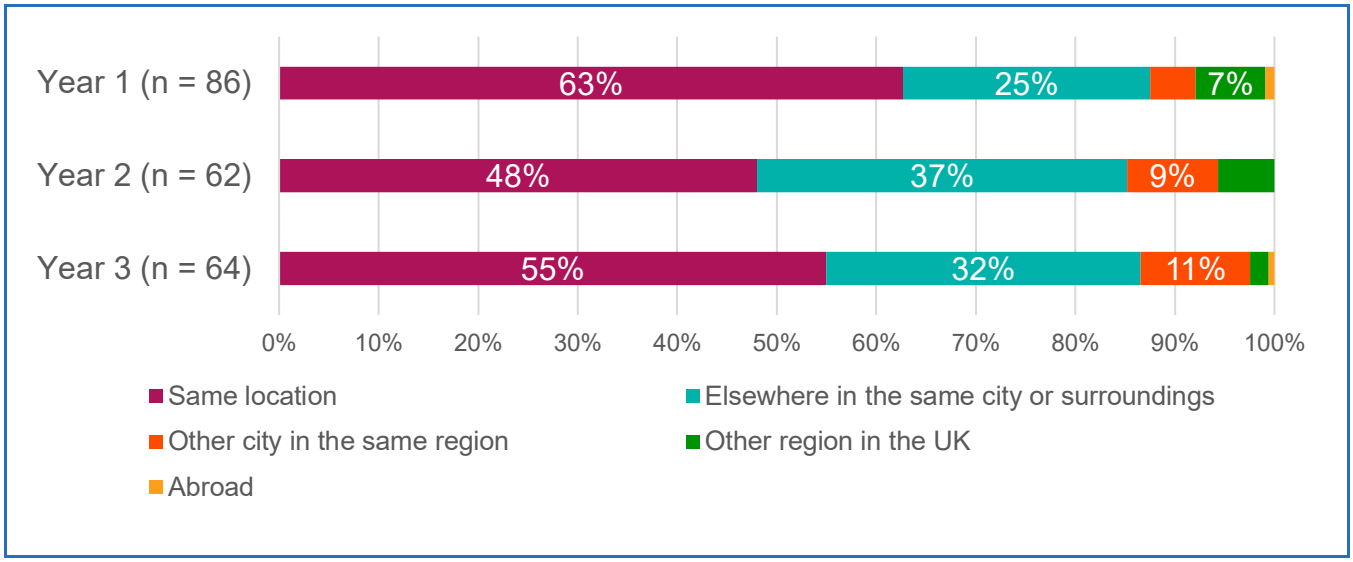
Businesses at Ingenuity Centre characterised the uniqueness of the centre with the proximity to skilled or expert individuals (both in terms of students and graduates, and lecturers) and the technology transfer office. There was also indication that the Ingenuity Centre expresses exceptional investment in the overall business journeys of the occupants.

Open answers at DHEZ-based businesses highlighted the additional opportunities offered by proximity to the host university. In addition, the respondents praised the exceptional health-sector expertise. This suggests that DHEZ has successfully managed to establish itself as a hub for health-specific digital innovation in Bradford and the regional area.

Projected view of business location

In the annual survey, UEZ businesses were asked whether they would relocate if the same support offer was available elsewhere. Based on the responses, the occupants appear to be mostly set on their present locations and wider cities, as demonstrated in Figure 26, below. The relative stability of this response over time supports this view, although the businesses indicate differing willingness to move within their present region. Based on interview insight, one reason for this is simply that businesses want to provide the stability for their employees to be based near their homes.

Figure 26: Projected impact of UEZ on business location (n = 212)



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

Alt text for Figure 26:

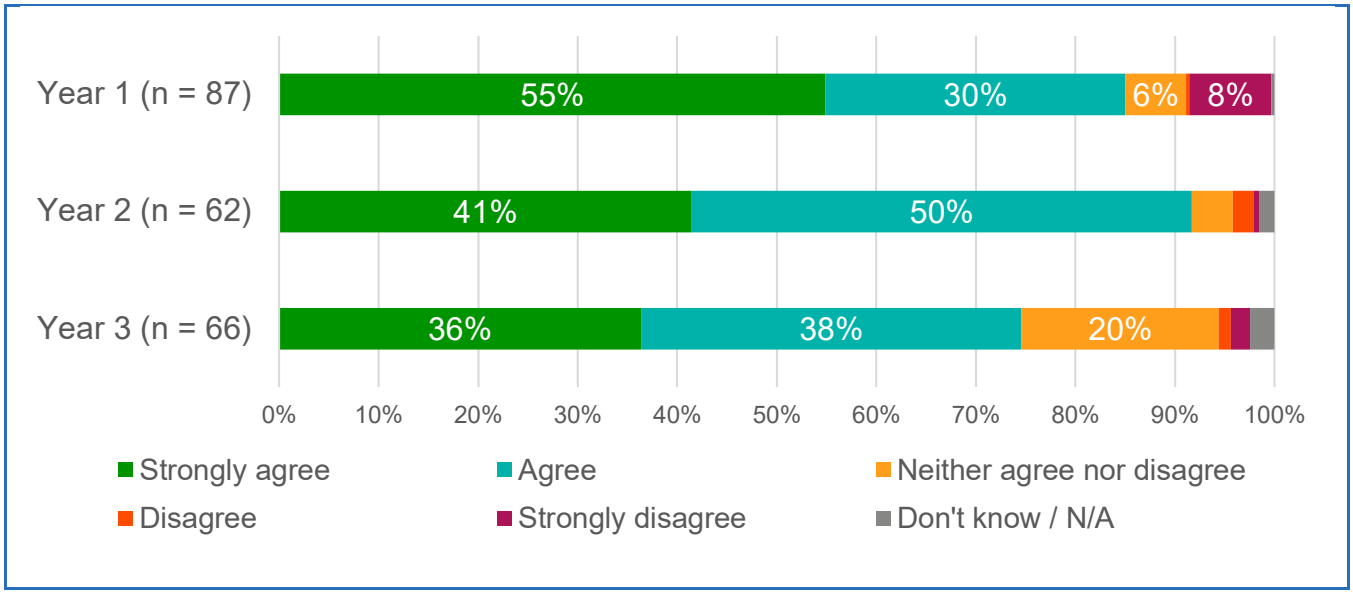
Three stacked bar charts showing the projected impact of UEZ on business location from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: 'Same location', 'Elsewhere in the same city of surroundings', 'Other city in the same region', Other region in the UK' and 'Abroad'. 'Same location' was the most common response every year.

Perception of worthwhileness of UEZ engagement in light of effort and costs

The businesses were asked to assess the overall worthwhileness of their participation in the UEZs. The response across observed years is summarised in Figure 27, below. Across the surveyed three years, more than 70% of respondents have deemed their participation worthwhile. In the overall weighted terms, however, there is a decline from 2022 to 2023. This is explained with a more neutral assessment among businesses at the Ingenuity Centre wherein two out of three businesses responded 'Neither agree or disagree' to the statement of worthwhileness. Across the other UEZs, 76% (Bradfield Centre) to 100% (DHEZ) of respondents agreed or strongly agreed that participation had been worthwhile in 2023. In addition, the levels of outright dissatisfaction with the UEZs are consistently very low.

Considering these trends over the full observed period, this is a strong indication that occupants have deemed presence at UEZs worthwhile for their businesses.

Figure 27: Taking into account the effort and costs, do you agree or disagree that it has been worthwhile participating in UEZs (n = 215)



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Weights detailed in Survey annex.

Alt text for Figure 27:

Three stacked bar charts showing level of agreement that it has been worthwhile participating from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: 'Strongly agree', 'Agree', 'Neither agree nor disagree', 'Disagree', 'Strongly disagree' and 'Don't know / N/A'. At least 74% of respondents in each year responded 'Agree' or 'Strongly agree'.

Further insight on worthwhileness was gained by asking surveyed businesses about the effect which the UEZs have had on the nature, scale and activities of occupant businesses. The following themes were identified in responses.

Access to rare or critical facilities

Access to specific workspace has elevated the level of innovation and expanded R&D activities into new areas. It is also noted that some of the workshops available are otherwise difficult (if not impossible) to come by elsewhere. Businesses reported a new ability to engage in R&D which had thus far been impossible for them. This type of feedback typically came from more specialised businesses in health or advanced technological sectors. The ability to increase subsequent R&D activities has additionally led to more investment in some businesses.

Access to faculties, researchers and research community

The ability to connect with academics and researchers was perhaps not the most common element, but was described by a subset of businesses. Moreover, to those businesses, these

connections were highly valuable. For some, the affiliation with the UEZ meant access to the research community in more general terms. This has enabled keeping up with current research agendas and being up to date with opportunities. Others indicated having benefitted from more strategic connections with specific schools or faculties which would have otherwise not been possible.

Facilitation of student placements and graduate recruitment

A reoccurring piece of feedback across UEZs has concerned access to university talent. Proximity to a campus itself or connections to particular schools or careers services have enabled businesses to find students for placements or projects, and recruit graduates. In places, the acquired talent has directly enabled the businesses to expand on new areas

Access to networks, community and clients

Common feedback concerned actualised and potential collaborations with other businesses on site. Whether this has occurred 'organically' or via signposting from management teams, the collaboration opportunities were thought to be highly meaningful.

Businesses also describe learning-based benefits through engaging with peer businesses on site. This has included gaining fresh perspectives to products and ideas, and generally learning from other businesses.

In addition, several businesses described the community to provide an enjoyable or inspiring atmosphere, which itself has supported productivity and growth.

Strategic advice or insight

A subset of businesses deemed the business support on site (either in-house or access to third party resources) to have been particularly valuable. It was noted that the level of available support was not possible to access outside of the UEZ.

Added prestige

Business from all UEZs deemed the affiliation with or presence on site to be beneficial for business branding and credibility. Generally, this was associated with either the host-universities, Science Park locations, or the buildings themselves. Some Bradfield Centre-based businesses also noted benefitting from the association with the Cambridge innovation community specifically. This has supported visibility and reputation to collaborators and clients, which has been particularly useful for younger businesses.

Access to coworking space

Although this is not unique to the UEZs, several businesses raised the ability to bring together teams who would otherwise be working separately. This has been deemed to enhance working culture and was particularly characteristic of younger SMEs and start-ups to whom the UEZs provide the first home-base. In this process, accessing meeting rooms and co-working space has been deemed particularly valuable. Additionally, the sites are often simply described as enjoyable.

Reputational benefits

Businesses surveyed and consulted across UEZs have mentioned reputational benefits via association with the host university which was characterised as prestigious. This has occurred through the professional site itself, but for the most part through business association with the university. It has supported credibility towards clients and peers.

In addition, consulted stakeholders reported reputational benefits from all open UEZs. This has taken the form of increased awareness of the host university, talent retention, and the ability to attract a skilled workforce from elsewhere in the area (this was particularly mentioned by stakeholders in Bristol, Nottingham and Bradford). In addition, the UEZs have raised the profile of the key sectors serviced. For instance, despite competing with the general reputation of Cambridge, local stakeholders felt that the profile of deep technology in the area has been raised.

Contribution analysis

The starting point for our contribution analysis has been the Theory of Change. We have used this to develop a series of contribution claims – statements as to how policy makers saw the UEZ programme as being the mechanism for change in the Theory of Change. We have set out both the evidence that strengthens the contribution claim, and evidence that refutes it, enabling us to assess the extent to which the Theory of Change has held true.

Appendix E presents our contribution analysis in full. However, from it, we draw the following conclusions on the Theory of Change.

- **Input and activities to outputs**: the evidence indicates that the programme has successfully achieved most of its target outputs. For example, all UEZs have achieved some level of occupancy from local firms, and attracted new companies over time, indicating demand for this type of space. Most UEZs also report consistent income while open. Furthermore, the evidence strongly supports the notion that the Theory of Change explains how these observed outputs have occurred. Therefore, we can say with a large degree of confidence that the **UEZ programme has achieved its target outputs, and that the programme mechanisms are a key driver behind doing so**.
- **Outputs to outcomes**: our analysis suggests that the programme has achieved approximately two-thirds of the target outcomes present in the Theory of Change. We could confirm with a good degree of confidence that the UEZs increased HEIs' capability to support innovation and entrepreneurship. We also found they facilitated collaboration between beneficiary businesses, HEIs and public sector bodies, even if leveraging HEI resources was found to be declining. Innovation activity was also indicated in primary data, and most UEZs have had a degree of positive effect on local areas. However, in most cases, there is not a strong evidence base to conclude that the Theory of Change can explain the materialisation of these outcomes. Consequently, while **the programme has achieved many of its intended outcomes, we cannot say with high confidence that the programme mechanisms alone have caused them**.

- **Outcomes to impacts**: our analysis indicates that the programme has achieved only a small number of its target impacts (social benefits generated through the activities at DHEZ and additional GVA and employment). For impacts like continued relationships with UEZ alumni or knowledge exchange between beneficiaries and broader business communities, we only found localised anecdotal evidence. Similarly, there is **no conclusive evidence either way as to whether the UEZ programme itself has been a causal factor for them**.

Summary – what is the programme's additionality?

- A small majority of tenant survey respondents believe that their UEZ provides a different offer to other incubators. The main differentiating points include:
    - University links
    - Better equipment and facilities
    - A sectoral focus (especially for DHEZ)
- Most survey respondents believe that participation in the UEZ has been worthwhile for them.
- The programme has achieved most of its target outputs (e.g. attracting innovative businesses and generating income) and programme mechanisms have been a strong enabler for this.
- The pilot has also achieved many of its intended outcomes (e.g. increasing university-business collaboration, and encouraging greater innovation and entrepreneurship). However, we cannot say with high confidence that the programme has caused all of the outcomes.
- The UEZs have achieved some of their target impacts (increasing the number and value of businesses in key sectors, and social benefits through developed services and technologies, particularly in relation to health-related benefits).

Cost-effectiveness of the University Enterprise Zones

This section addresses the research question **what is the overall cost-effectiveness of the programme?**

Benchmarking to other similar programmes

In this study, we have considered cost-effectiveness and value for money in a relatively broad manner, examining how far the benefits generated are reasonable given the inputs and resources allocated to the programme. Key to this is comparing the pilot's performance to other similar initiatives. We have compared the UEZ pilot to five other schemes:

- Sci-Tech Daresbury Campus
- SETsquared
- XPLOR research and innovation centre
- Edge Hill University's Productivity and Innovation Centre
- Roslin Innovation Centre at the University of Edinburgh

We have chosen these schemes for two reasons: the study team identified as schemes with sufficient similarity to the UEZ pilot (bearing in mind that no two programmes are identical), and the availability of programme data.

We have compared programmes in terms of (i) delivery efficiency – the conversion of inputs into activities i.e. the number of businesses supported per £, and (ii) programme effectiveness, the ability to generate outcomes and impacts.

Table 18: Comparators used in the cost-effectiveness assessment

Scheme	Rationale for use as comparator	Limitations to use as comparator
Sci-Tech Daresbury Campus	Like the UEZs, this is a science and innovation campus, providing inter alia innovation and incubation space to tech start-ups and other growth businesses. It is also located close to one of the UEZ areas (Sensor City)	The campus' impact evaluation pre-dates the current study and the COVID-19 pandemic. Impacts may not be comparable as they relate to a period that had a very different context. The campus is larger than the individual UEZs. It is co-located with a research centre (STFC Daresbury) rather than a university.

SETsquared Scale-Up Programme	Like the UEZs, it looks to link innovative technology businesses with research talent at one or more of its six partner universities (Bath, Bristol, Cardiff, Exeter, Southampton, and Surrey). Businesses have access to the same kinds of support provided by UEZs e.g. peer networking, access to HE resources, support for raising investment. One UEZ (Future Space) operates in the same city region as a SETsquared university (University of Bristol).	There is no workspace offer with SETsquared, and no incubation space provided (albeit that some UEZs also provide a virtual offer).
XPLOR Research and Innovation Centre	Provides innovation space and support to R&D intensive businesses, including opportunities for SMEs and academic organisations to collaborate. Located in the same region as one UEZ (DHEZ)	Targets the arts and the live events industry unlike the UEZs which primarily focus on science, technology and innovation.
Edge Hill University's Productivity and Innovation Centre	Like the UEZs, it is a university-linked innovation and accelerator support programme. It has a strong focus on linking the university and locally-based SMEs.	No workspace associated with the scheme (albeit that some UEZs also provide a virtual offer)
Roslin Innovation Centre	Like the UEZs, provides not only physical workspace linked to a university, but also business development advice, and an environment which encourage industry-academic collaborations. Opened in 2017, a similar time to several UEZs.	Based in Edinburgh, it is not located in the same region as any of the UEZs.

Direct comparisons between programmes are difficult, not only due to differences in the services delivered and the types of business supported, but as the results are dependent on the underlying assumptions regarding the time period being examined, and what costs and benefits are included. Therefore, these comparisons can only be indicative.

In terms of delivery efficiency, the UEZ pilot compares favourably especially next to its closest comparators (marked in bold in Table 19): incubation and innovation centres linked to a research establishment. While there has been high government expenditure on the UEZ pilot, it has also supported a large number of businesses, which in turn, have generated a high volume of additional employment and net GVA. The Roslin Innovation Centre like the UEZs, is university linked, and began at a similar time to the UEZs, and had a similar level of government investment. However, the UEZ pilot has supported many more businesses. The comparison with Roslin Innovation Centre needs to be treated with some caution – the evaluation report indicated a £30 million joint investment in the centre by BBSRC, Scottish Government and the University of Edinburgh, but does not indicate the precise amount of public funding provided (i.e. the amount that the University itself has invested). As such the cost per business supported may be an overestimate. Nevertheless, the UEZ pilot still appears to have delivery efficiency that is at least on par with those offering physical workspace, albeit considerably worse than programmes that do not.

Table 19: Benchmarking the UEZ pilot's value for money

Scheme	Time period assessed	Total expenditure (£000s)	Delivery efficiency Businesses supported per £100,000 spent	Delivery efficiency Cost per additional job	Delivery effectiveness Cost per additional £100,000 GVA
UEZ pilot	**2017-2023**	**£48,900[22]**	**0.64**	**£31,692[23]**	**£6,367[24]**
Sci-Tech Daresbury Campus	**2014/15**	**£54,500[25]**	**0.18**	**£102,830**	**£57,979**
SETsquared Scale-Up Programme	2018-2021	£8,469	5.44[26]	£2,704[27]	£2,606[28]

[22] This figure is based on the total expenditure across UEZs (including Government and additional leveraged co-investment) as indicated in the baseline report.
[23] This figure is based on the 1,543 created jobs based on the Total net cumulative employment after adjustment, as shown in Table 16
[24] This figure is based on the adjusted net cumulative GVA of £768m, as shown in Table 16
[25] This combines the £42.5 million input costs of running STFC operations on campus (as quoted in SQW (2017) *Sci-Tech Daresbury Campus Impact Study*, and a £12 million capital cost quoted in https://www.langtreepp.co.uk/sci-tech-daresbury-submits-planning-application/ (accessed 8 March 2024)
[26] Assumes that the 461 'members' supported, as quoted in Warwick Economics & Development (date unknown) *The economic and social impacts of the SETsquared Scale-Up Programme*, relates to businesses supported.
[27] Ibid. indicates supported firms have 3,1332 employees, but unclear if these are net additional jobs. Have assumed this to be the case.
[28] Ibid. indicates £1.3 billion GVA between 2018 and 2030. Have assumed that this is evenly spread over time period, and that figure is net additional.

XPLOR	**2020-2022**	**£7,242**	**0.83**	**£724,237**	**£146,755**[29]
Edge Hill University's Productivity and Innovation Centre	Not indicated	£844	12.8	£3,802	Not conducted
Roslin Innovation Centre	**2016/17-2021/22**	**£30,000**	**0.09**	**£56,711**	**£35,047**[30]

Source: Technopolis analysis

Summary - what is the overall cost-effectiveness of the programme?

- Our analysis shows that the programme's delivery efficiency (0.89 businesses supported / £0.1m programme expenditure) compares broadly with other programmes that have provided innovation or incubation space linked to a research establishment, with the exception of SETSquared. However, its measured efficiency benefits greatly from the fact that the large capital investments underwritten by the UEZ programme were funded through grants that predate the 2018-2021 expenditure figures used here.
- We find that the UEZ pilot represents good value for money in terms of additional £100k in GVA and additional jobs relative to its closest comparators, Sci-Tech Daresbury Campus, XPLOR and the Roslin Innovation Centre. This being said, the number of serviced businesses for the same amount of funding is slightly smaller compared to XPLOR.

[29] Total GVA derived from project receiving £3.5 million ERDF grant, and total GVA of £1.41 per £1 of ERDF grant, as quoted in Forever Consulting (2022) *Final Evaluation of XPLOR – A new research and innovation centre.*

[30] Based on a mid-case estimate of GVA to the UK as presented in *Bearing Point (2022) Identifying, capturing, and measuring the merging outcomes, benefits and impacts from the BBSRC, University of Edinburgh and Scottish Government's £30 million investment in the Charnock Bradly Building and Roslin Innovation Centre (RIC)*. If lower case and upper-case estimates used, this figure would be £91,463 and £16,103 respectively.

Conclusions

Conclusions

Evaluation Question 1: What, if any, impact has the programme had?

1a: Has there been an increase in university-business engagement as a result of the UEZ pilot?

- **Based on our primary data, university-business engagement has occurred at all UEZs, and has grown over time. The rate of this growth has fallen but there is limited evidence of an increasing effect which UEZs have had on this engagement. This increase is also found declining over our data collection rounds, and unevenly distributed between UEZs.**
- We observe a range of positive outcomes and attribution at the level of individual UEZs. That said, our evidence of causality is limited. Moreover, the evidence is not sufficient to be generalised at the overall programme level.
- Turning to individual UEZs, a significant minority of client businesses are engaging with HEIs in a variety of different ways across all (open) UEZs and tend to credit this engagement to the UEZ. Despite this positive outcome, the level of engagement bas been declining from 2021 to 2023 (and generally remain lower than in the baseline phase in 2017).
- While the overall picture is broadly positive, there is a high level of variation among the UEZs in terms of the nature and extent of engagement activities.
- Relative to its business population, it appears that Future Space hosts the population most inclined to work with the HEI (and vice versa).
- There are some research-intensive businesses at Bradfield Centre (which also wants to attract the rising stars from Cambridge), but the general client population is more inclined to collaborate with other businesses.
- Similar to Future Space, the Ingenuity Centre businesses report relatively high levels of engagement with the facilities and other research capacity at the host HEI.
- DHEZ as a centre hosts a high level of HEI engagement, but this may not always materialize as collaborations for businesses specifically (as much as for other R&D actors in the health sector).

1b: Has there been an increase in co-operation between universities and LEPs as a result of the UEZ pilot?

- **Our findings suggest that the specific relationships with LEPs were highly limited, although UEZs have supported connections with an array of other public sector**

actors. However, we have not managed to confirm causality except perhaps for DHEZ.

- We found no evidence to suggest the pilot has led to an increase in cooperation between universities and LEPs. Collectively, the level of UEZ engagement with LEPs remains low. The nature of relationship between LEPs and most UEZs is arm's length.
- In terms of the public sector more generally, UEZ businesses demonstrate a healthy level of engagement (although levels vary from UEZ to UEZ) with public sector client organisations (e.g., NHS) and business support (e.g., Innovate UK).
- We do not have clear evidence on whether the UEZ engagement has contributed to the high degree of public sector collaboration. DHEZ is a likely exception to this, as the UEZ facilitates collaboration with public sector health bodies in general.

1c: Has the UEZ pilot led to better business and economic performance both for those who worked with the five zones and the LEPs? What other factors may have contributed?

- **We found evidence of a good level of performance among UEZ businesses in relation to GVA, employment, investment and overall survival rates. We also identified a variety of ways through which UEZs support business outcomes. However, the level at which businesses attribute their outputs to the UEZs varies between UEZ and data collection round. One limiting factor concerns the pre-existing avenues to academic resources which a subset of the business population reported.**
- Across the five UEZs, a majority of client businesses have reported positive business outcomes through their participation in the UEZ.
- Supported businesses have demonstrated good survival rates, even with the evaluation period covering the COVID-19 pandemic period.
- UEZs have connected clients with on-site and other investors and other modes of support for resources (e.g., bid writing advice).
- There is a declining trend in terms of how much of business performance is credited to the UEZ engagement (with the exception of the perceived impact on R&D investment)
- The volume of outcomes and impacts, and the volume of impact attributed to UEZ engagement has varied from one UEZ to another.
- There were indications of other contributing factors to the level of impact of the UEZs. Business connections with academics, partners and clients predating UEZ engagement (or happening through other connections) was one recurring factor.

Evaluation Question 2: How, if at all, has the programme achieved these impacts?

- **Our data collection identified a number of factors which have supported impact-attainment. We deem physical proximity to the host HEI, level of relationship between the UEZ and the HEI as well as surrounding business support all to be determinants. In addition, we found specialised eligibility to support the relevance of available offer.**
- The evidence indicates that orientation and delivery model has considerably influenced the level of impact that each UEZ has achieved.
- We see a link between on-campus location and higher levels of HEI engagement (i.e., where the UEZ does not reside on campus, the businesses collectively tend to engage with the HEI less)
- The (level of) relationship-development between the UEZ and the HEI tends align with the level of overall interaction between staff and students, and businesses.
- The degree of available business support (e.g., financing, advice, professional services) depends on the extent to which UEZs have engaged with other business support provision (HEI and external).
- In some cases, UEZ tenant eligibility criteria have helped them select businesses that can best benefit from the provided support. This has included restricting support to firms in certain sectors.

Evaluation Question 3: What is the overall cost-effectiveness of the programme?

- **Our analysis shows that the programme's delivery efficiency (number of businesses supported / £m programme expenditure) compares reasonably favourably with other similar programmes that have provided innovation or incubation space linked to a research establishment. UEZs also compare favourably to its similar counterparts in terms of generated employment and especially GVA.**

Evaluation Question 4: Did the funding of incubator / grow-on space successfully overcome the market failure?

- **We found that the UEZs have addressed two market failures with mixed levels of success. As added available space for innovators, the Centres were not found to add meaningfully to existing provision. However, as spaces for improving connectedness between HEIs and businesses, we found the UEZs to have successfully met a need. In addition, there is evidence of other local needs to which UEZs have addressed individually.**
- At a programme level the UEZ has sought to address two overarching market failures: a shortage of affordable good-quality incubation space for local entrepreneurs, and a lack of connectedness between the university and business communities which in turn, has stifled the development of local innovation ecosystems.

- On the first point, the evidence presents mixed results about the UEZ programme's ability to meaningfully add affordable and good-quality innovation space to the total square footage available locally. While this has been achieved in several places, elsewhere, the UEZ facilities did not add significantly to existing local capacity, or were not deemed affordable.
- On the second point, the UEZ programme was found to have improved the connectedness among local innovation actors and the host universities, at least for their immediate clients. All open UEZs have facilitated some degree of interaction and collaboration between local businesses and university stakeholders. The scale of the offering however was not sufficient to overcome the market failure for the local areas more generally.
- In addition, the UEZs have helped tackle some place-specific market failures including aspects like increased health inequalities from the lack of public sector capacity and lack of investment.

Methodological notes

Annual data collection rounds

The structure of annual data collection rounds

The fieldwork for the annual data collection comprised three annual rounds between 2021 and 2023 to provide evidence for the respective process, impact, and value for money evaluations. In addition to informing annual evaluation reports following each data collection round, these were combined to support the final evaluation. Each annual round was designed around a repeating series of strands: i) Completion and return of a management information proforma; ii) annual performance conversations with UEZ managers; iii) A survey of UEZ businesses; iv) annual interview programme with UEZ occupant businesses.

Annual University Enterprise Zone business survey

The survey of businesses addressed questions related to the make-up of the business, the nature of their relationship with the UEZ, links to the university, and other public sector bodies, collaborations with other businesses, changes in business performance, and the value of the UEZ to the business. We have adapted the survey from that used in the interim evaluation via i) implementing the recommendations from the delivery note that followed the interim evaluation, and ii) from the discussion undertaken at the UEZ manager workshop. Maintaining as much consistency as possible with the interim evaluation survey allows us to use that as a baseline for this evaluation, in common with the approach undertaken to assessing management information proforma data.

The first annual survey was live between the 9th of March and the 26th of April 2022. The second survey was launched on the 7th of November 2022 and closed on the 31st of January 2023. Finally, with one exception, the third annual survey ran from 19th of October to the 8th of December 2023. The survey was circulated within all five UEZs in the first round of data collection. Due to the closure of Sensor City however, subsequent data collection was limited to the other four UEZs.

Survey implementation was supported by UEZ managers in two ways:

- Raising awareness among businesses ahead of circulation of the survey via an email to alert consultees to the survey. This also served as a quality check on the held email data
- Provision of business names, a registration number, and contact details (email address and telephone number) to the study team (for businesses that consented to being contacted)

One UEZ had to obtain consent from their occupants to share their details with external parties (this consent pre-existed at other UEZs). Obtaining the consent affected the survey launch to an extent throughout the three annual data collection rounds.

Each year, the survey was implemented by our partners in the evaluation, Strategic Research and Insight (SRI). SRI used a hybrid web and telephone survey to maximise responses rates. This was important in order to address the challenges experienced in securing responses during the interim evaluation. The invitation to tender for the evaluation outlined a phased target of 100 to 600 survey responses. While the higher end of this target range is not possible due to the overall number of UEZ businesses, the study team aimed to meet the 100-response target. However, due to both, the small number of businesses present at some UEZs, and not gaining consent from all target businesses for the consultation, our overall response group was remained limited from targets throughout the three data collection rounds. Nevertheless, we still believe that the sample is sufficiently large enough to draw meaningful results from them.

The cross-year survey sample is broken down in the table below, along with key details on timings.

Table 20: Survey sample (invites) and responses by location

UEZ	Contact details received	Survey launch date	Sample size / invites sent	Responses received	Response rate
Year 1 (March 2022-April 2022)					
Future Space*	28/03/2022	31-Mar	9	8	89%
Ingenuity Centre	22/03/2022	24-Mar	18	6	33%
Sensor City	15/12/2021	09-Mar	7	3	43%
DHEZ	28/02/2022	09-Mar	7	6	86%
Bradfield Centre	18/02/2022	09-Mar	112	64	57%
		Total	153	87	57%
Year 2 (November 2022-January 2023)					
Future Space	7/11/2022	09-Nov	7	7	100%
Ingenuity Centre	7/11/2022	09-Nov	11	7	64%
Sensor City	N/A	N/A	N/A	N/A	N/A
DHEZ	30/11/2022	01-Dec	6	4	66%

Bradfield Centre	28/11/2022	01-Dec	133	48	36%
		Total	157	66	42%
Year 3 (August 2023-December 2023)					
Future Space	N/A**	16-Aug	75***	20****	27%
Ingenuity Centre	17/10/2023	19-Oct	13	3	23%
Sensor City	UEZ CLOSED	UEZ CLOSED	UEZ CLOSED	UEZ CLOSED	UEZ CLOSED
DHEZ	22/11/2023	24-Nov	5	3	60%
Bradfield Centre	19/10/2023	09-Mar	115	42	37%
		Total	208	68	33%

NB: * Future Space issued a second version of the survey via an open link to another group of businesses to bolster responses. Unfortunately this did not yield additional data **Future Space circulated an open link to the survey, and as such, Technopolis did not receive contact information; ***sample size contained all Future Space occupants although no individual invite was sent out; ****responses pertain to the population who indicated affiliation with Future Space

A set of steps were taken to address the low number of responses in data collection and analysis both.

The survey team at SRI issued reminders and chased businesses over the phone thrice to encourage participation.

In addition, Future Space collaborated with the study over several data collection rounds. In Year 1 (2021-2022), the UEZ issued a second version of the survey via an open link to another group of businesses to bolster responses. In the third data collection round, Future Space proposed for the survey to be merged with an in-house survey which the UEZ launches annually. This was done to boost the uptake of the evaluation survey and to avoid survey fatigue at the UEZ in question. In this instance, business names were not shared with Technopolis, but instead, the merged survey used an open link which was internally circulated by the UEZ at the point of launch. Participation was also encouraged by the UEZ. The merged survey was designed to keep all questions in the original survey design, and to additionally include others uniquely asked by the UEZ. To align the survey with the schedule of the in-house survey, it was launched on 16th of August 2023 and closed on 25th of September 2023. The open link was shared with both, Future Space occupants and Launch Space clients, and respondents selected whether they were affiliated with one or the other (or both). In analysis, responses from those who did not report affiliation with Future Space were removed.

Despite these efforts, consistent discrepancies in responses occurred between UEZs. In this is due to the sheer number of occupants at the different UEZs. For that reason, responses collected from the Bradfield Centre consistently outnumbered those from the other UEZs. To

overcome the scenario where the overall results are overly influenced by the UEZ or UEZs with a higher response volume, we opted to use weighted averages in analysing the survey responses. This means that each cohort of UEZ businesses per question and year was assigned a certain value (or weight). This, in turn, enabled each UEZ cohort to have an equal weight in the analysed responses. Questions measuring the overall impact in absolute numbers (e.g., the value of R&D investment) were left unweighted.

Annual University Enterprise Zone business interviews

In each data collection round, the study team selected potential interviewees from the list of survey responses by reviewing their responses to the initial UEZ survey. In addition to ensuring a spread of candidates across the five UEZ sites, particular attention was paid to those UEZ businesses that had i) identified benefits in their survey responses, and ii) indicated that the benefits would not have materialised under other circumstances.

Business interviews added detail to the survey responses and overarching findings of the evaluation, gave an opportunity to the study team to explore businesses' relationships with and experiences of their UEZs, and any to unpack any examples of business benefit. Business interview data was used to form vignette-based case studies for each year of reporting. Interview requests were sent out in three batches. Two-to-three weekly reminders followed to encourage uptake.

The number of invites sent, undertaken interviews and response rates for each data collection round are summarised in table below:

Table 21: Interview invites and respondents by location

UEZ name	Invites sent	Interviews undertaken
Year 1		
Future Space	6	1 (17% response rate)
Ingenuity Centre	6	4 (17% response rate)
Sensor City	3	-
DHEZ	6	2 (33% response rate)
Bradfield Centre	6	-
Year 2		
Future Space	5	2 (40% response rate)
Ingenuity Centre	5	1 (20% response rate)

Sensor City	N/A	-
DHEZ	5	1 (20% response rate)
Bradfield Centre	5	1 (20% response rate)
Year 3		
Future Space	4	1 (24% response rate)
Ingenuity Centre	3	1 (33% response rate)
Sensor City	N/A	N/A
DHEZ	5	1 (20% response rate)
Bradfield Centre	9	4 (44% response rate)
Total (Year 1-3)	**68**	**19 (28% response rate)**

Annual interviews with University Enterprise Zone managers

UEZ managers have been consulted three times during the first annual data collection round, and once each during the second and third data collection rounds. It allowed the study team to consult UEZ managers in more depth as part of the annual performance conversations. These conversations were held in the last halves of 2021, 2022 and 2023, and covered areas including the impact of the COVID-19 pandemic changes to the orientation of offer of the UEZs, changes to aims and objectives, changes to partnerships, and gauging if and how the UEZs are set apart from other similar provision. The annual performance conversations also provided an opportunity to check on i) the completion of management information proformas and provide advice and guidance where needed, and ii) arrangements for survey dissemination. In addition, insight from managers was collected during a programme of scoping interviews, and a workshop in April to July of 2021 of the first data collection round.

Completion of management information proformas

Management information proformas were sent to UEZ managers for completion in the last quarters of 2021-23. The management information proformas collect data on the key performance indicators (KPIs) related to inputs, activities, and outputs of the UEZ.

UEZ managers were asked to provide data against each KPI for the current year, as well as all available data for each year since the baseline in 2017. UEZ managers worked hard on this exercise and were thorough. However, much of the information was drawn from disparate

sources, and some UEZs reported changes in their monitoring systems over the intervening years of 2017-2023.

Additional data collection

The structure of additional data collection

In addition to the annual data collection efforts, further data has been collected, analysed and synthesised towards the Final report. Primary data was collected in parallel to the third annual data collection round. Secondary data has been obtained towards the end of the annual data collection period and since.

Stakeholder interviews

For the final evaluation, stakeholder insight was collected from external actors. This group consisted of external delivery partners, members of the local ecosystem, representatives of LEPs and other local authorities, and members of staff from the host Universities.

UEZ managers at the Bradfield Centre, DHEZ, Future Space and the Ingenuity Centre were approached for recommendations and introductions to relevant stakeholders. This resulted in a list of 41 contacts across the four locations. Invites were sent to all 41 contacts followed by up to two follow-up emails where relevant. Finally, 20 interviews were completed (including one instance where the contact reviewed and answered questions in writing).

Interview analysis in final evaluation

In order to code the stakeholder interviews and business vignettes efficiently, an internal tool called the ‘AI Policy Concierge’ developed by Technopolis’ Data Science Unit was implemented. This tool expands our experts' qualitative capabilities by allowing them to find policy-relevant insights in large amounts of textual data quickly and accurately. The tool automates topic detection over large amounts of documents regardless of language, complexity, or size, explaining such detection and providing sources for sense checking. Moreover, it answers project-relevant questions about every single document or summarising and synthetising groups of documents solely based on the information they contain, explaining the reasoning behind each answer, assuring transparency and accountability.

The write ups of each external stakeholder interview, and the tenant vignettes were input into the tool, where they were asked a series of questions relating to their experience engaging with the UEZ. These questions were asked to subgroups based on UEZ affiliation, as well as to the full group of documents as a whole. This enabled us to identify different experiences associated with each UEZ, along with any commonalities shared by all external stakeholders

or tenants. Once responses were collected, they were sense checked and rerun if insufficient information was returned. In addition to this, any reference to named interviewees was removed to ensure anonymity. Once all interviews were analysed with AI Policy Concierge, the interview team validated the findings with checks against the interview write-ups.

Notes on data privacy

We fully control the source data of our AI Policy concierge tool and restrict insights only based on the information we feed. Therefore, we always have access to the raw text that originates each output and can fact-check results by linking the explanation of each output to the respective raw text.

We only use Large Language Models data that assure input and output data remain private and confidential (by not feeding into model improvement). This understanding required a thorough legal examination of the terms and conditions and contractual arrangements of different service providers and modes of access.

Descriptive statistics

To complement the self-reported profile of UEZ business population and the findings from the econometric analysis, we opted to obtain a comprehensive set of descriptive statistics of the UEZ business population. A list of present and past occupant businesses was obtained from each open UEZ,[31] which was matched against secondary datasets for insight on UEZ businesses (the treated group) and a control group consisting of other businesses in the UK and Ireland. For this exercise, data was obtained from FAME, Crunchbase and NOMIS.

FAME is a database that contains information about companies in the United Kingdom and Ireland. It combines comprehensive and detailed company information with flexible software that allows for searches and analysis of over 15 million companies. Crunchbase is a company that provides information on businesses. Their database contains information on investment and funding, executives, and corporate news. It uses live data that is updated daily to provide the most up-to-date information on private companies. NOMIS is a service provided by the UK's largest independent producer of official statistics, the Office for National Statistics (ONS). They publish statistics on population, society, and the labour market at the national, regional, and local levels. We also used data from Companies House, which provides quarterly and annual statistics on company register activity and size, as well as annual figures on late filing penalties.

[31] NB: the acquired set of UEZ businesses were subject to limitations due to changes in management and CRM systems at various UEZs. In addition, due to the closure of Sensor City, we did not include businesses from the site.

Econometric analysis

Finally, the evaluation included an econometric analysis with the use of secondary data on UEZ businesses and comparators in the UK and Ireland from the Inter-Departmental Business Register (IDBR) of the Office of National Statistics (ONS). We have measured the performance and behaviour difference over time within the UEZ businesses and control groups to eliminate group-specific unobserved factors which are fixed in time. Afterwards, the study team took the difference of all the performance differences to eliminate any time trends in the results (which assumes that the beneficiary group would have followed the same time trend as the control group). Ultimately, the technique allows us to test if there has been any change over time in the beneficiary group's performance, and if this change has been higher than compared to the control group and attributable to the programme. The analysis examined dimensions of economic impact, like employment and GVA.

University Enterprise Zone profiles

Bradfield Centre

The Bradfield Centre was opened in the Cambridge Science Park in July 2017. The management at the UEZ was contracted to the external management agency, Central Working. Following the closure of Central Working, however, the management of the Bradfield Centre was taken on by Mantle Space.

Table 22: Financial resourcing secured for the Bradfield Centre

Government funding	Additional leveraged co-investment
£4.8m	**£17.2m**

Source: Data collected at the time of interim evaluation (2018)

By all observed parameters but number of FTE staff, the Bradfield Centre is the largest of the pilot UEZs. The number of FTEs decreased during COVID-19, responding to the declining number of occupants at the time. Since then, the level of both has increased to match, or exceed, the baseline in 2017. The overall revenue generated at the UEZ has also increased from baseline to 2023, and overall, the Bradfield Centre has generated the highest level of revenue across all pilot UEZs. In addition, the UEZ hosts a considerable number of events, many of which are public-facing for general awareness-raising. The Bradfield Centre is also perhaps most outward-facing in general terms, by participating in community initiatives beyond its core sectors.

Table 23: Descriptive information about space, staff, client businesses, events and income at the Bradfield Centre

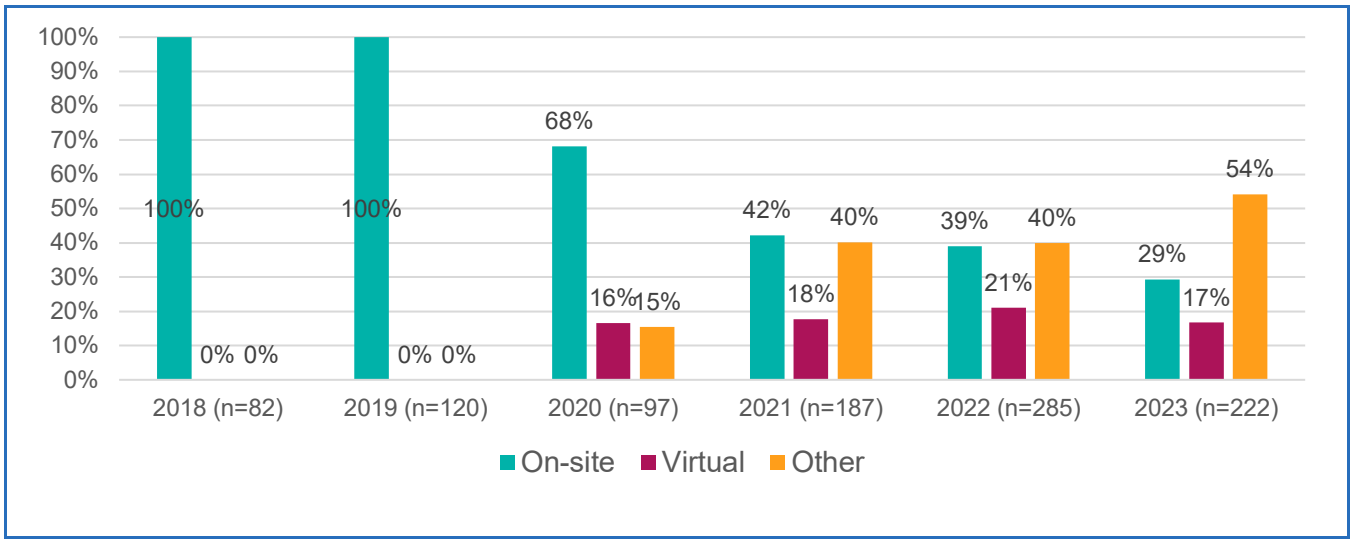
	2018	2019	2020	2021	2022	2023
Opening date	**July 2017**					
Provision of space	**3,065**	**3,400**	**3,400**	**3,400**	**3,400**	**3,400**
Number of FTE staff	**4**	**4**	**2**	**3**	**3**	**4**
Total UEZ businesses	**82**	**120**	**97**	**187**	**285**	**222**
Number of events	**350**	**469**	**95**	**12**	**85**	**99**
Average attendance per event	**41**	**22**	**30**	**48**	**35**	**29**
Total income	**£1,524,866**	**£2,483,041**	**£1,352,768**	**£1,347,611**	**£2,677,945**	**£3,174,892**

Source: Management information proformas completed by UEZ managers.

The UEZ focuses on marketing itself and delivering on-site support to high technology businesses with a fairly strict set of selection criteria. Participating business population contains actors in FinTech, MedTech and software developers, for instance. The management team requires joining businesses to plan to place technical staff at the Bradfield Centre (as opposed to sales staff, for example), and places more weight on young start-ups rather than larger businesses.

The Bradfield Centre began recording virtual occupants and other businesses (who had in some way benefitted from the UEZ) in 2020. Since then, the share of virtual and other business beneficiaries has increased relative to on-site occupants. In 2023, more than half of the businesses at the Bradfield Centre were 'other' type of beneficiaries.

Figure 28: Distribution of occupant types at the Bradfield Centre 2018-2023



Source: Technopolis based on data collected via Management Information Proformas

Alt text for Figure 28:

A triple bar chart showing the distribution of occupant types at the Bradfield Centre from 2018 to 2023. From left to right, the bars represent: 'On-site', 'Virtual' and 'Other'.

The UEZ offers professional space for occupant businesses which is made up of private offices, co-working space, a co-lab space offering screens and a whiteboard, as well as various meeting spaces, an atrium and an auditorium. Additionally, access can be facilitated to university-owned lab space at Trinity College.

Operated mostly independently of the host HEI, Trinity College, the Bradfield Centre has sought to increase its relationship with the University in more recent times. The UEZ attracts high-promise student start-ups to join by offering complementary memberships to the finalists of the Trinity Bradfield Prize. In addition, the UEZ has developed relationships with institutes like the Cambridge Judge Business School, and Møller Institute for leadership and professional development.

DHEZ

The Digital Health Enterprise Zone (DHEZ) was originally envisioned to have a split-presence across two refurbished sites. The first space, Digital Exchange, opened in April 2016 with the second innovation space in the Phoenix Building, on the University of Bradford's City Campus opening at the end of 2017. Presently, DHEZ retains the second space while Digital Exchange was ultimately sold to the local council. A joint venture between the host University of Bradford, BT, NHS and City of Bradford Metropolitan District Council, DHEZ is managed entirely by the HEI.

Table 24: Financial resourcing secured for DHEZ

Government funding	Additional leveraged co-investment
£3.8m	£3.3m

Source: Data collected at the time of interim evaluation (2018)

Due to the closure of Digital Exchange, DHEZ is presently the smallest of the open UEZs in terms of available space for occupants. The UEZ underwent a considerable revision during its early years of operation in 2018. During this time, DHEZ held no business support activity, but re-opened for businesses at the on-campus site in the following year. From there on, DHEZ has managed to increase its business population, managing staff and events and their attendance. These developments are summarised in Table 25, below.

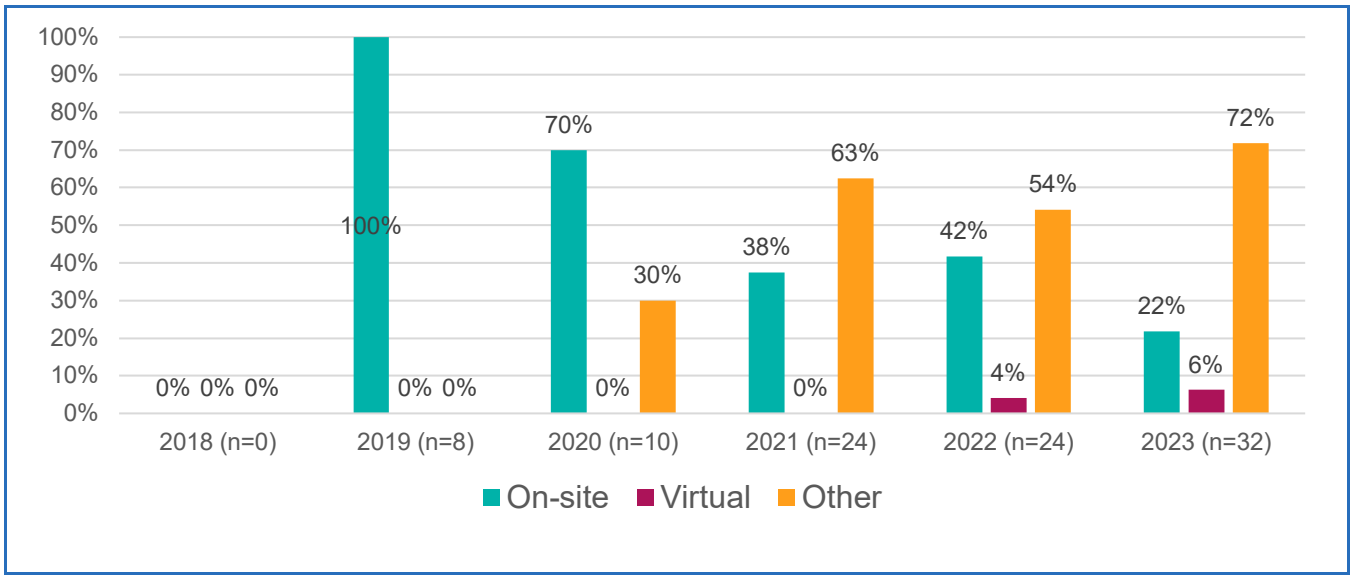
Table 25: Descriptive information about space, staff, client businesses, events and income at DHEZ

	2017	2018	2019	2020	2021	2022	2023
Opening date	**April 2016**						
Provision of space (sq m)	**1,261**	**340**	**340**	**340**	**340**	**340**	**340**
Number of FTE staff	**3**	**1**	**1**	**2**	**2**	**2**	**2**
Total UEZ businesses	**68**	**0**	**8**	**10**	**24**	**24**	**32**
Number of events	**45**	**0**	**0**	**6**	**27**	**35**	**15**
Average attendance per event	**27**	**0**	**0**	**20**	**9**	**7**	**21**
Total income	**£103,078**	**£0**	**£19,076**	**£49,138**	**£49,159**	**£99,909**	**£76,450**

Source: Management information proformas completed by UEZ managers.

We note that DHEZ has gradually increased its share of 'Other' type of beneficiary businesses over time in line with the UEZ's established presence in the region's digital health ecosystem. Comparatively, the share of on-site businesses has decreased, but in absolute numbers remained fairly consistent (n=7-10). In management interviews, an interest in virtual occupants has arisen, which is evident in the small but growing share of such businesses by 2022.

Figure 29: Distribution of occupant types at DHEZ 2018-2023



Source: Technopolis based on data collected via Management Information Proformas

Alt text for Figure 29:

A triple bar chart showing the distribution of occupant types at DHEZ from 2018 to 2023. From left to right, the bars represent: 'On-site', 'Virtual' and 'Other'.

The target audience at DHEZ is most clearly defined among the UEZ pilot sites. As a Digital Health-focused UEZ, related innovation specialism is required of joining businesses. This being said, DHEZ also houses some legacy businesses whose focus area is outside digital innovation. The management team aims to introduce increased digitalisation to those businesses.

DHEZ offers a range of specialised healthcare and innovation-related support and clinics on site. This offer has several designated spaces, such as rooms for consultations and minor procedures, a 'living lab' simulating home environments for innovation testing, a wet laboratory, cold store room, and additional spaces for lectures, meetings and events.

The UEZ has also established itself as an interface for health and digital health innovation and services for all actors in the ecosystem. The clinics run at DHEZ (a physiotherapy clinic and an eye clinic) are public-facing and largely delivered by students for professional training. Accredited phlebotomy training is also provided, and the UEZ is presently facilitating a series of pain management training for students in collaboration with Pain Management Scotland. In addition, DHEZ has hosted a larger trial to facilitate the administration of the Novavax COVID-19 vaccination to volunteers for the NIHR.

Future Space

Future Space was launched on the Frenchay Campus of the University of the West of England (UWE) in August 2016. The UEZ was established in partnership between UWE and the University of Bristol with further support from stakeholders like the West of England LEP, South Gloucestershire Council. The management of the UEZ was contracted to Oxford Innovation Network, although the management team retains a close relationship with the host HEI through, for example, recruiting members of staff from the University.

Table 26: Financial resourcing secured for Future Space

Government funding	Additional leveraged co-investment
£4.0m	£9.4m

Source: Data collected at the time of interim evaluation (2018)

Overall, Future Space keeps the highest number of FTE staff among UEZs and, along with the growing business population and increasing space, has increased the number of staff in recent years. In addition, Future Space has increased the income generated from occupancy on an annual basis. With this said, the number of events has fallen slightly in the two most recent years. These aspects are summarised below, Table 27.

Table 27: Descriptive information about space, staff, client businesses, events and income at Future Space

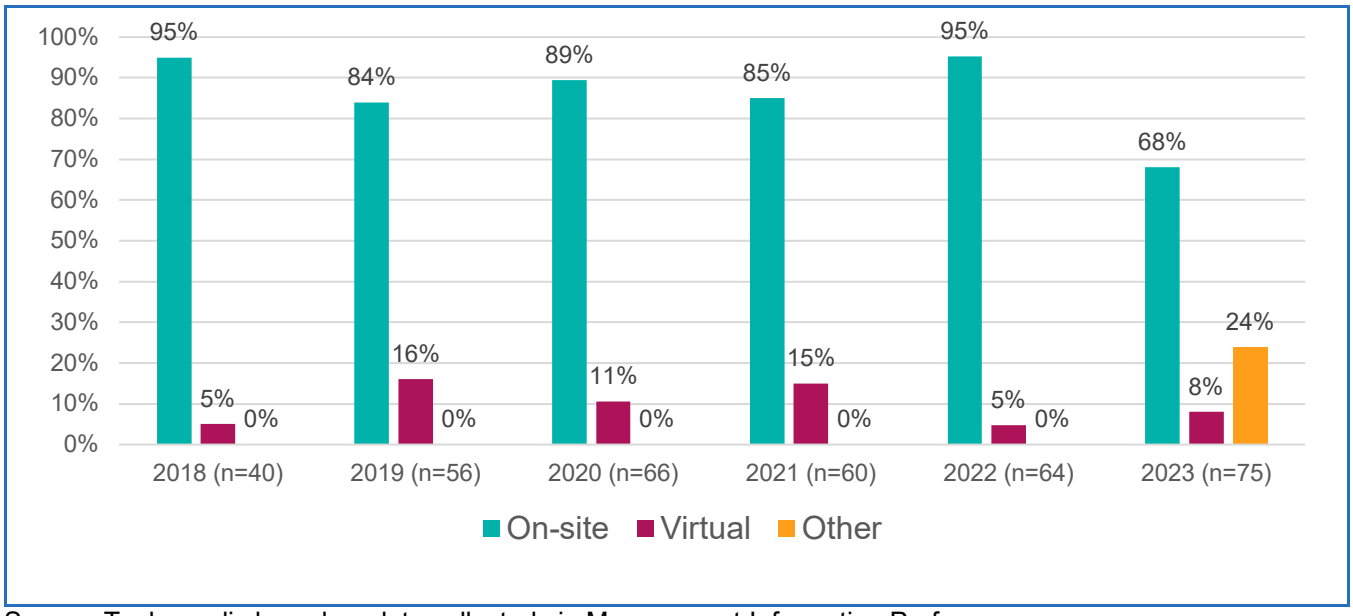
	2017	2018	2019	2020	2021	2022	2023
Opening date	August 2016						
Provision of space	2,199	1,976	2,063*	2,063	2,193**	2,193	2,193***
Number of FTE staff	5	4.2	5.8	5.6	5.2	6.6	7.1
Total UEZ businesses	30	40	56	66	60	64	75
Number of events	37	23	25	24	25	13	19
Average event attendanc	35	5	4	3	5	16	6

e per event							
Total income	**£309,236**	**£806,981**	**£961,693**	**£1,017,550**	**£1,176,741**	**£1,369,946**	**£1,377,634**

Source: Management information proformas completed by UEZ managers. Note: *additional space configuration taking in offices **Addition of extra lab for eXmoor. *** Space at the time of reporting and excluding planned future grow-on space.

A large majority of Future Space businesses has consistently resided on site. In the most recent year however, the share of on-site businesses has declined somewhat in response to the surge of 'Other' businesses. This is due to the partnership established with the UWE incubator, Launch Space, whose young start-ups benefit from Future Space support and have an option to move to the UEZ upon completing the 12-month residency at the incubator. Comparatively, the level of virtual occupants has remained low throughout the years.

Figure 30: Distribution of occupant types at Future Space 2018-2023



Source: Technopolis based on data collected via Management Information Proformas

Alt text for Figure 30:

A triple bar chart showing the distribution of occupant types at Future Space from 2018 to 2023. From left to right, the bars represent: 'On-site', 'Virtual' and 'Other'.

The UEZ supports early-stage, high-growth businesses in the advanced technology sector with specific focus on advanced engineering, green, health and digital technology. Future Space has also recently tightened its entry criteria to require planned collaboration with the host University.

Future Space offers an extensive range of specialised laboratories and workspaces. In part shared with adjacent facilities (Bristol Robotics Laboratory and Health Tech Hub), part of its

own, the UEZ offers a microbiology lab, a tissue culture lab, private lab space, and scalable workshop space for activities like manufacturing and assembly. In addition, the UEZ offers private and shared office space, in-house support teams, and meeting and event rooms. Additionally, Future Space has operationalised a range of advisory services and student placement activity with UWE.

Ingenuity Centre

The Ingenuity Centre opened in the University of Nottingham Innovation Park (UNIP) on the Jubilee Campus of the University of Nottingham in October 2016. The UEZ expanded on the existing range of SME support and accommodations offered by UNIP and has been managed by members of the UNIP team throughout its operation.

Table 28: Financial resourcing secured for the Ingenuity Centre

Government funding	Additional leveraged co-investment
£2.6m	**£3.8m**

Source: Data collected at the time of interim evaluation (2018)

Although the number of business occupants at the Ingenuity Centre has decreased in the intervening years, the UEZ has increased its occupant-generated income since the baseline of 2017. In addition, the number of on-site businesses has remained relatively stable over time with up to 26 on-site occupants present at any given year. The UEZ supported 249 'Other' businesses in the baseline year of 2017 explaining the high number of UEZ businesses in its early years. The Ingenuity Centre has also hosted a fluctuating number of events over the years with a fairly high attendance recorded overall throughout this time. This is summarised below in Table 29.

Table 29: Descriptive information about space, staff, client businesses, events and income at the Ingenuity Centre

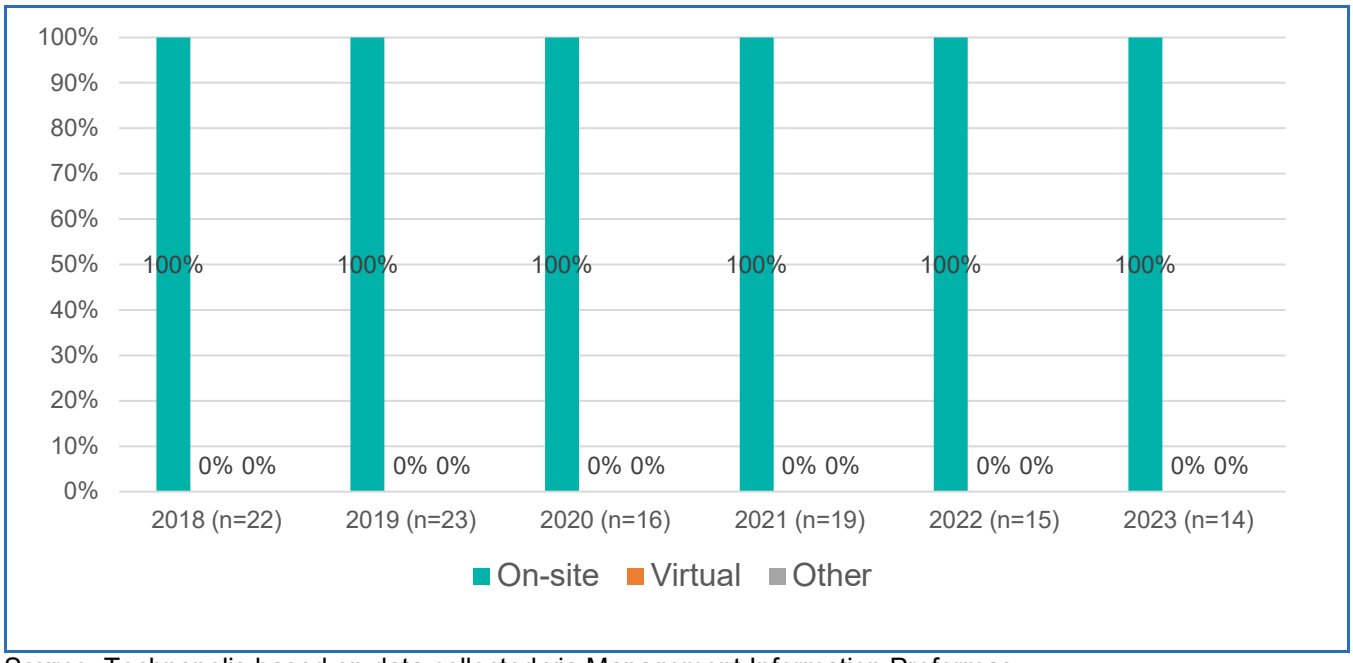
	2017	2018	2019	2020	2021	2022	2023
Opening date	**October 2016**						
Provision of space	**2,000**	**1,440**	**1,440**	**1,440**	**1,440**	**1,440**	**1,440**
Number of FTE staff	**1.8**	**1.5**	**1.5**	**1.5**	**1.5**	**1.5**	**3**

Total UEZ businesses	**299**	**22**	**23**	**16**	**19**	**15**	**14**
Number of events	**61**	**Unknown**	**Unknown**	**7**	**2**	**1**	**5**
Average event attendance per event	**29**	**-**	**-**	**23**	**30**	**30**	**12**
Total income	**£140,438**	**£293,599**	**£364,033**	**£352,535**	**£312,553**	**£342,181**	**£306,978**

Source: Management information proformas completed by UEZ managers.

As seen in Figure 31, below, from 2018 onwards, the business population at the Ingenuity Centre has comprised on-site occupants entirely.

Figure 31: Distribution of occupant types at the Ingenuity Centre 2018-2023



Source: Technopolis based on data collected via Management Information Proformas

Alt text for Figure 31:

A triple bar chart showing the distribution of occupant types at the Ingenuity Centre from 2018 to 2023. From left to right, the bars represent: 'On-site', 'Virtual' and 'Other'.

The target audience at the Ingenuity Centre consists of businesses in various high technology sectors which align with the research expertise at the University of Nottingham. These include

areas like zero carbon, medical technology, food and drink and digital technology. The UEZ enforces this specialisation with a gateway policy which is actively reviewed for relevance.

The Ingenuity Centre leverages business support particularly through facilitated access to the expertise and equipment at the University's technology centres of excellence. In addition, the UEZ has connected with the University's Careers and Employability Centre through which student placements are regularly facilitated to occupant businesses. The UEZ also houses the Ingenuity Lab, a student incubation service, with a view to introduce further incubation support, 'incubation@UNIP' specifically for existing businesses in the future.

Sensor City

Sensor City opened in the Liverpool Knowledge Quarter in June 2017. It was established in partnership between the University of Liverpool, the Liverpool John Moores University, Liverpool City Region (LCR) LEP and Liverpool City Council (LCC). The UEZ was originally run by the Host University (University of Liverpool), but with the later addition of an external workspace expert, Sciontec Developments Ltd. Sensor City was closed during the COVID-19 pandemic, at which point the on-site business occupants were moved over to the Liverpool Science Park, also managed by Sciontec. The UEZ has remained closed since the pandemic, as renovations have been implemented at the site to ensure that the site is safety-compliant. At present, in March 2024, there is no firm opening date, although the management at Sciontec is active in furthering the finalisation of the site.

Table 30: Financial resourcing secured for Sensor City

Government funding	Additional leveraged co-investment
£5.0m	**£8.1m**

Source: Data collected at the time of interim evaluation (2018)

Sensor City achieved a healthy level of business occupants during its time open. At present, there are eight prospective tenant businesses looking to move to the UEZ following its reopening. In addition, from 2017 to 2020, the UEZ hosted large number of events with a good level of attendance up the pandemic.

Table 31: Descriptive information about space, staff, client businesses, events and income at Sensor City

	2017	2018	2019	2020	2021	2022	2023
Opening date							

Provision of space	**1,738**	**1,127**	**1,127**	**1,127**	**1,127 / CLOSED**	**CLOSED**	**CLOSED**
Number of FTE staff	**1.8**	**6.4***	**5**	**5.5**	**3.5****	**N/A**	**N/A**
Total UEZ businesses	**30**	**38**	**43**	**22**	**CLOSED**	**CLOSED**	**CLOSED**
Number of events	**20**	**300**	**200**	**43**	**1**	**0**	**0**
Average attendance per event	**40**	**35**	**38**	**35**	**30**	**N/A**	**N/A**
Total income	**£10,591**	**£127,428**	**£191,731**	**£100,214**	**£2,358**	**N/A**	**N/A**

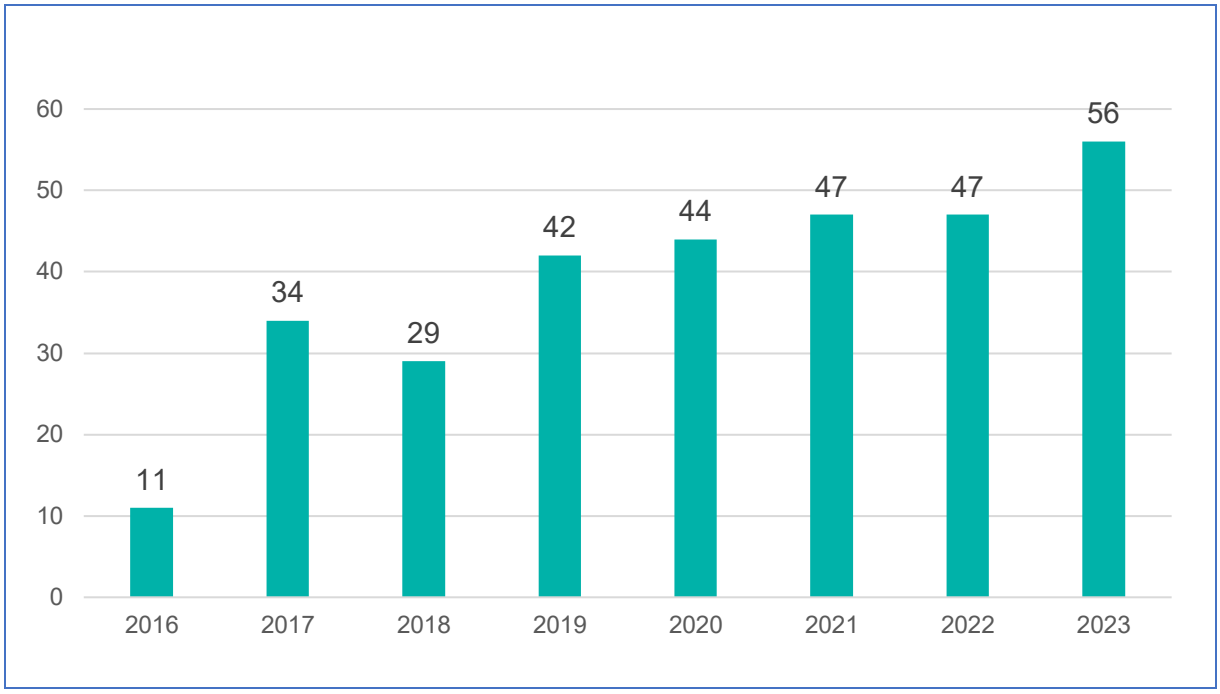
Source: Management information proformas completed by UEZ managers. * Figure made up of 1.95 permanently seconded, 2 temporary staff, 2.4 secondees. ** The 3.5 FTE figure for Sensor City was until October 2021

Sensor City operated a sector specific focus in its target audience; leveraging the academic expertise in sensor technology, the recruited business population consisted of enterprises in sensor-related applications. In the same vein, the UEZ was able to leverage the surrounding ecosystem focused on sensor and IoT. Additionally, the management team leverages the academic expertise and student talent at the host HEIs for businesses located at the Science Park. This offer will be further supported with specialised relevant laboratory testing facilities, as well as working, meeting and events space on the final UEZ site.

Descriptive Statistics

The match rate of businesses in FAME is 93% for the FAME database (with 294 of the 315 businesses identified. Whereas the match rate in CrunchBase was higher at 99% (with 311 of the 315 businesses identified).

Figure 32: Number of UEZ businesses by year of joining

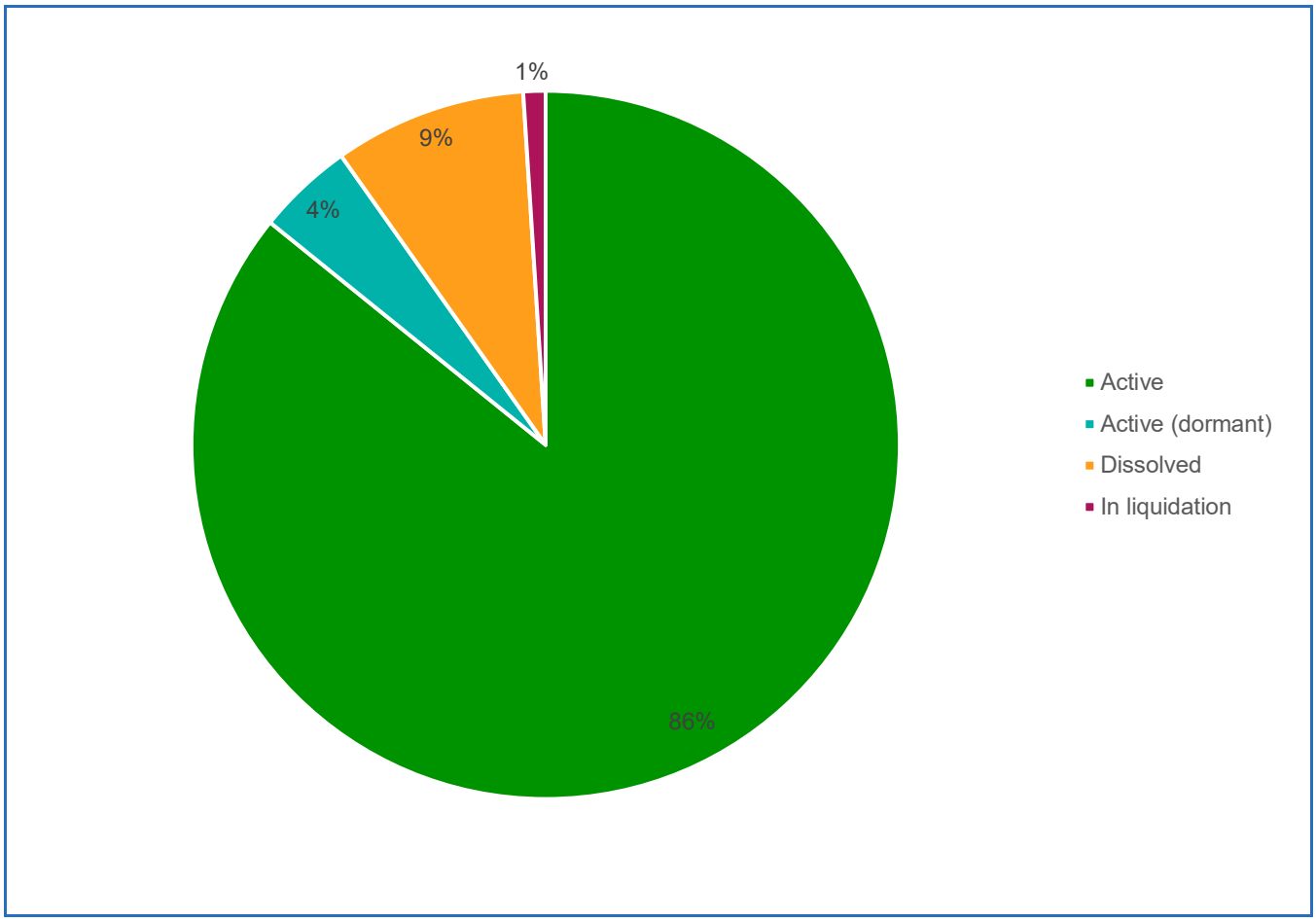


Source: Monitoring data

Alt text for Figure 32:

Bar charts showing the number of UEZ businesses by year of joining from 2016 (left) - 2023 (right).

Figure 33: Company status breakdown, 2024



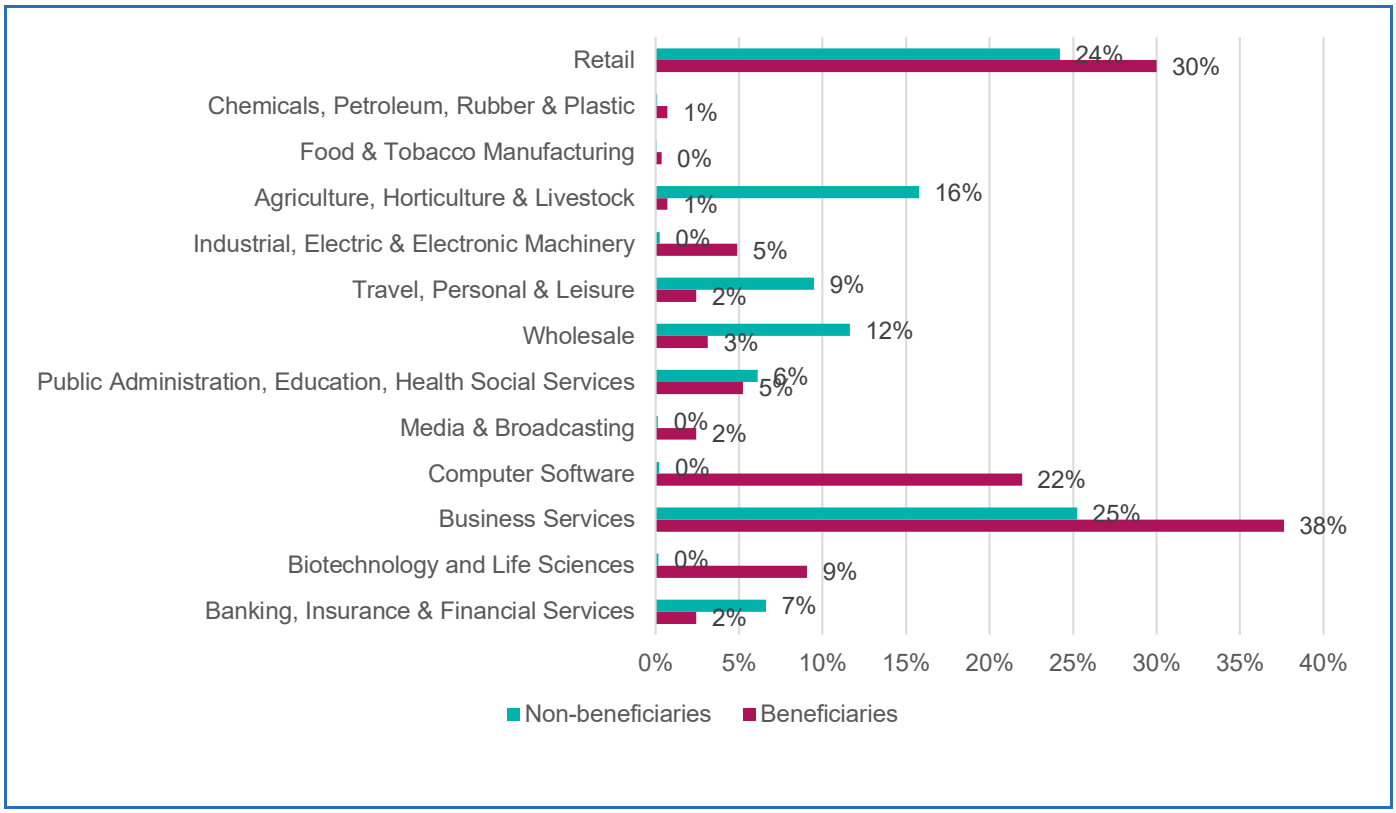
Source: FAME database. Base: 296 beneficiaries.

Alt text for figure 33:

Pie chart showing company status breakdown. It is divided into four wedges: Active – 86%, Active (dormant) – 4%, Dissolved – 9% and In liquidation – 1%.

Regarding company status, Figure 33 highlights that most beneficiaries are still actively operating (86%). In comparison, 4% is active but is not currently carrying on any business activity or receiving any income. Around 9% of businesses supported by the programme have dissolved, and 1% are undergoing liquidation.

Figure 34: Sector of operation breakdown, 2023



Source: FAME database and NOMIS website providing ONS. Base: 287 beneficiaries and 896,275 non-beneficiaries.

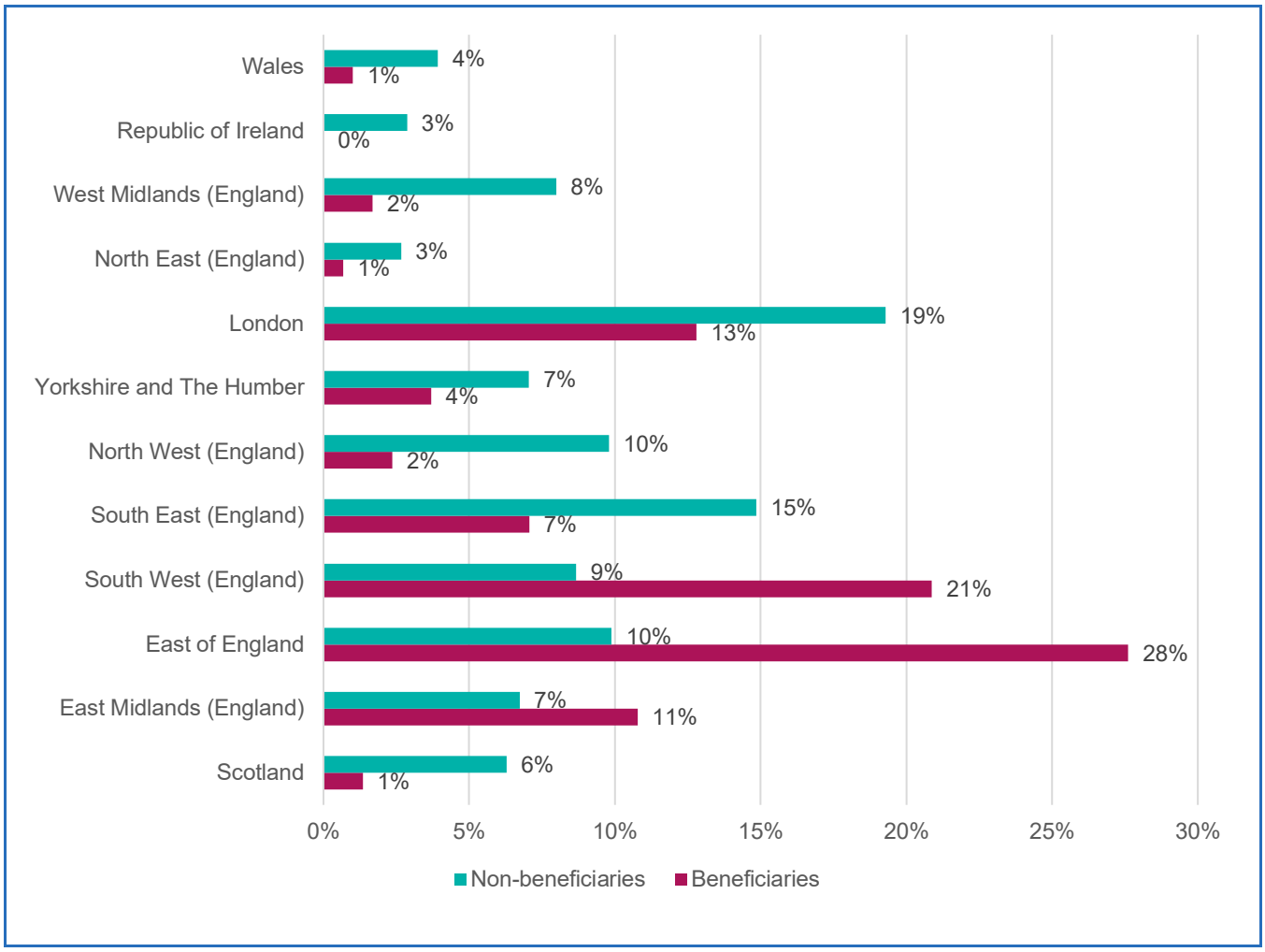
Alt text for Figure 34:

Double bar chart showing the sector of operation breakdown as a percentage for Non-beneficiaries (above in chart) and Beneficiaries (below in chart).

This analysis examines the breakdown of business types in terms of status, sector of operation, region, size and age. We compare this to a counterfactual group of businesses that have not engaged with the programme.

Figure 34 shows that engagement with the university enterprise zones is representative across business services and retail. The top three most represented sectors of operation are business services (38%), retail (30%), and computer software (22%). The sector distribution is similar across the treatment (beneficiaries) and control (non-beneficiary) groups, although beneficiaries demonstrate a larger share of businesses in business services and retail. However, the sector distribution is different in the case of computer software, where there is a high percentage of beneficiaries but a low percentage of non-beneficiaries (<1%).

Figure 35: Regional breakdown of active businesses, 2023



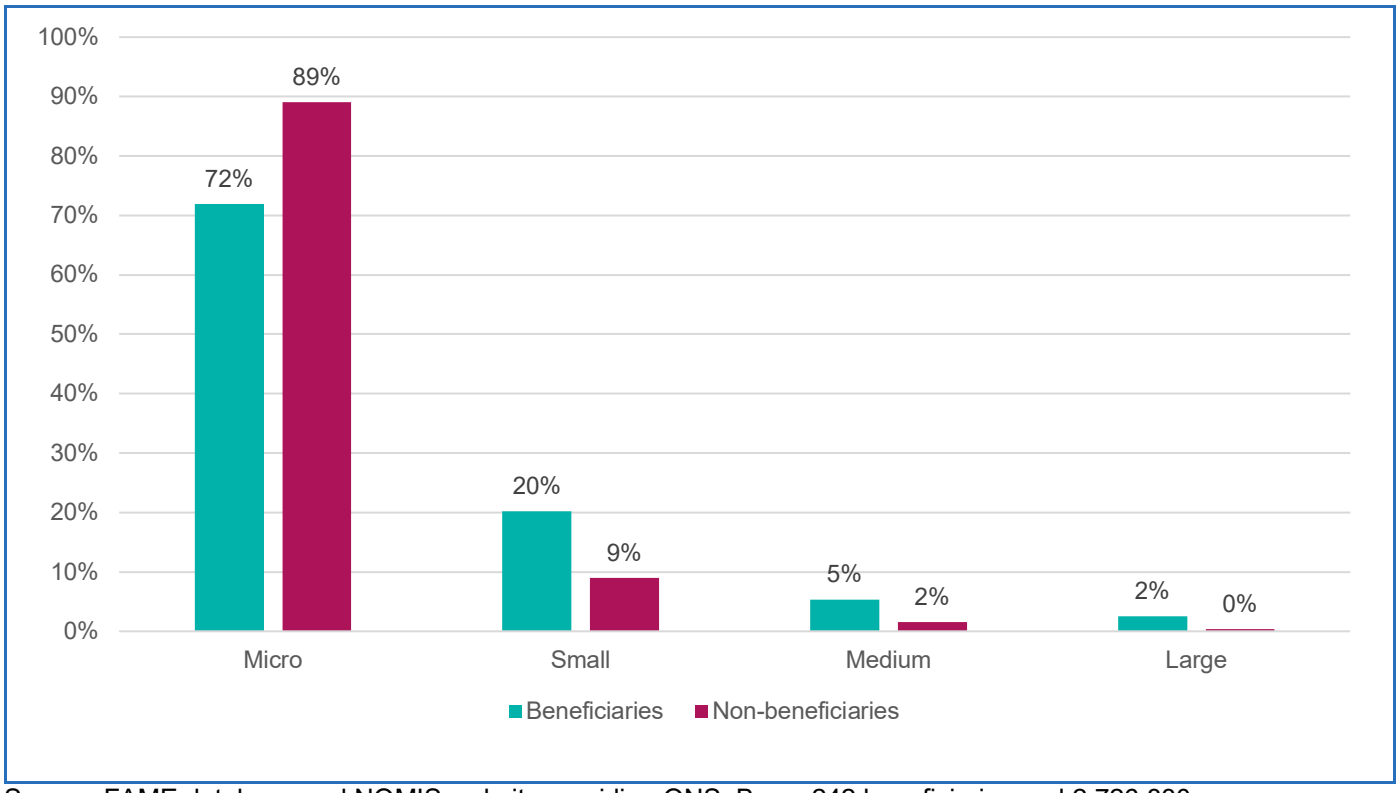
Source: FAME database and NOMIS website providing ONS. Base: 297 beneficiaries and 2,726,825 non-beneficiaries.

Alt text for Figure 35:

Double bar chart showing a region breakdown of active businesses as a percentage for Non-beneficiaries (above in chart) and Beneficiaries (below in chart).

According to Figure 35, the proportion of beneficiaries is located mainly in East England (28%) and Southwest England (23%). The region distribution varies slightly among beneficiaries and non-beneficiaries, with London being where most businesses are located (19%). Even though London for beneficiaries is still quite similar (13%) to non-beneficiaries, other regions have opposite distributions, with one group having a high percentage of companies in that region and the other group having a lower rate.

Figure 36: Size breakdown of active businesses, 2023



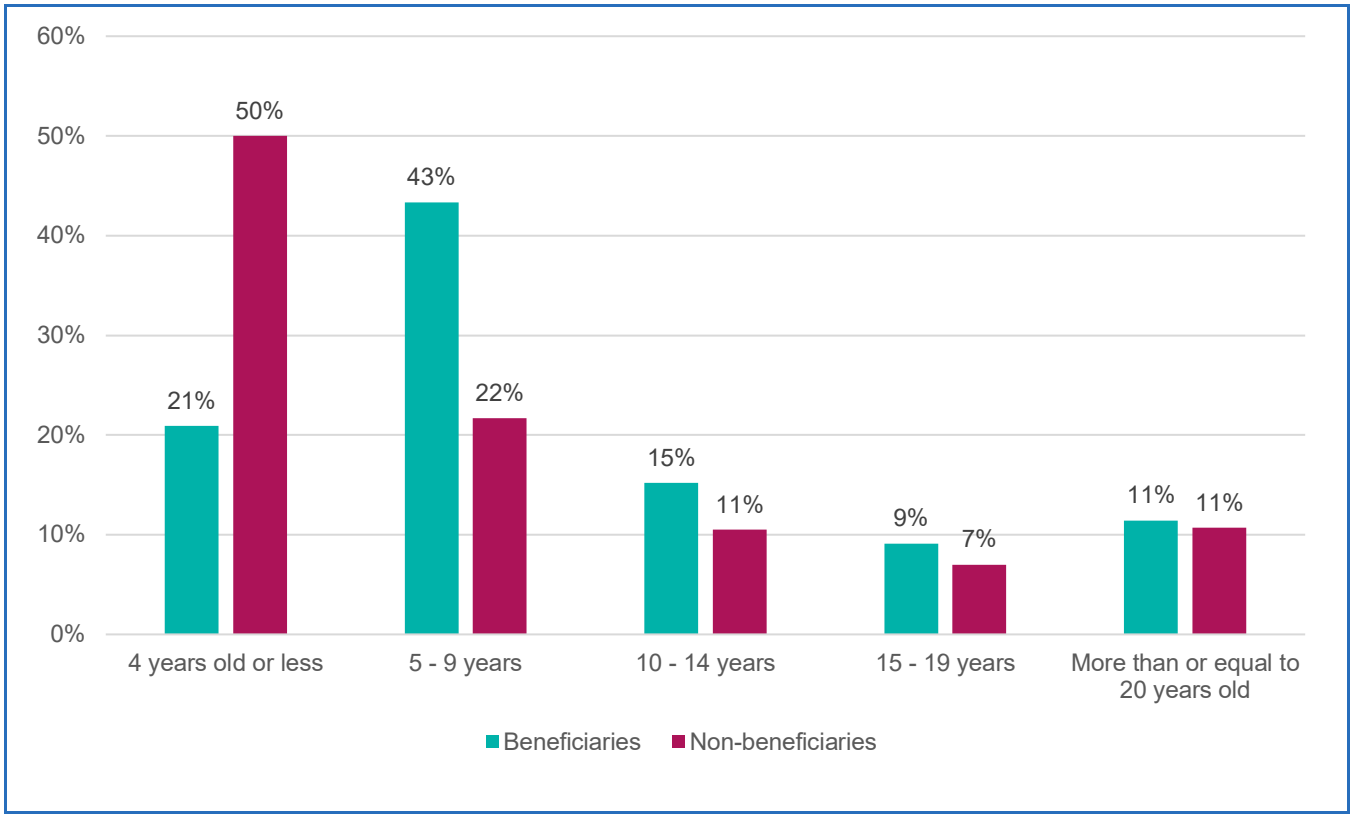
Source: FAME database and NOMIS website providing ONS. Base: 242 beneficiaries and 2,726,830 non-beneficiaries. Micro (0 to 9), Small (10 to 49), Medium-sized (50 to 249), and Large (250+).

Alt text for Figure 36:

Double bar chart showing the size breakdown of active businesses. From left to right, the bars represent: 'Beneficiaries' and Non-beneficiaries'. From left to right, the sections represent: 'Micro', 'Small', 'Medium' and 'Large'. Left bar for each population represents Beneficiaries, and right bar represents non-beneficiaries. For both groups, micro businesses make up the largest sub-group

In terms of size, Figure 36 shows that most beneficiaries (70%) and non-beneficiaries (89%) are categorised as micro or small businesses with 49 employees or less. Around 21% of beneficiaries' businesses are small, compared to 9% of non-beneficiaries.

Figure 37: Age breakdown of active businesses, 2023



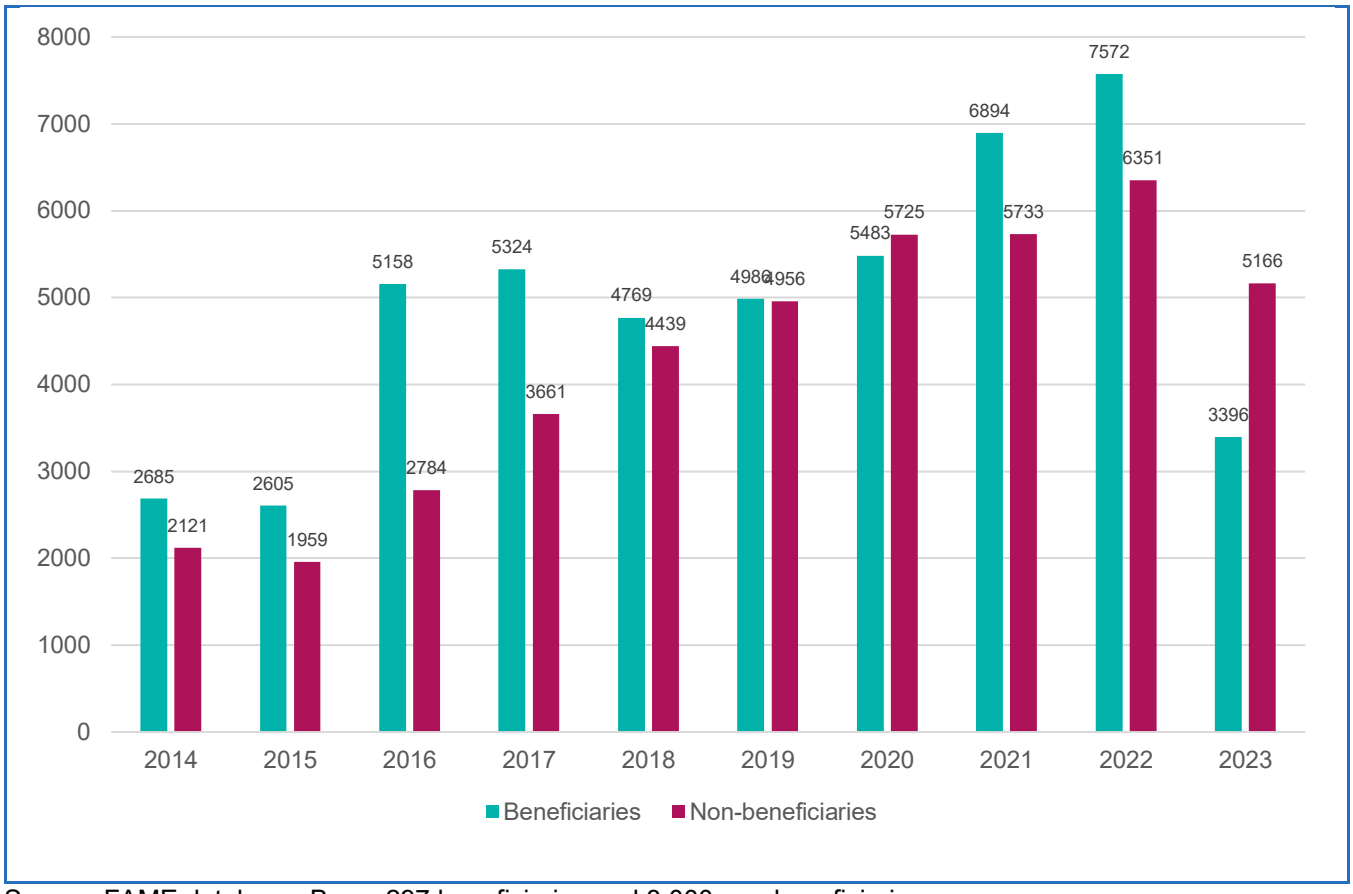
Source: FAME database and Company House statistics. Base: 263 beneficiaries and 4,645,402 non-beneficiaries.

Alt text for Figure 37:

Double bar chart showing age breakdown of active businesses for Beneficiaries (left) and Non beneficiaries (right). From left to right, the sections represent '4 years old or less', '5-9 years', '10-14 years', '15 – 19 years' and 'More than or equal to 20 years old'. Beneficiaries are most commonly five to nine years old, whereas non-beneficiaries tended to be four years old or youngers.

The age breakdown of beneficiaries largely mirrors that of the rest of the business population, from ten years old onwards. However, there are noticeable differences for businesses aged four years or less and between 5 and 9 years. The share of businesses that are in the youngest age group (four years old or less) is smaller for beneficiaries (21%) compared to non-beneficiaries (50%), and that of businesses in the 5 to 9 group is the opposite. Around 43% of beneficiaries are between five and nine years old, compared to 22% of non-beneficiaries. As a result, the median age of beneficiaries is ten years, and that of non-beneficiaries is lower (eight years).

Figure 38: Total number of employees in active business, 2014-2023.

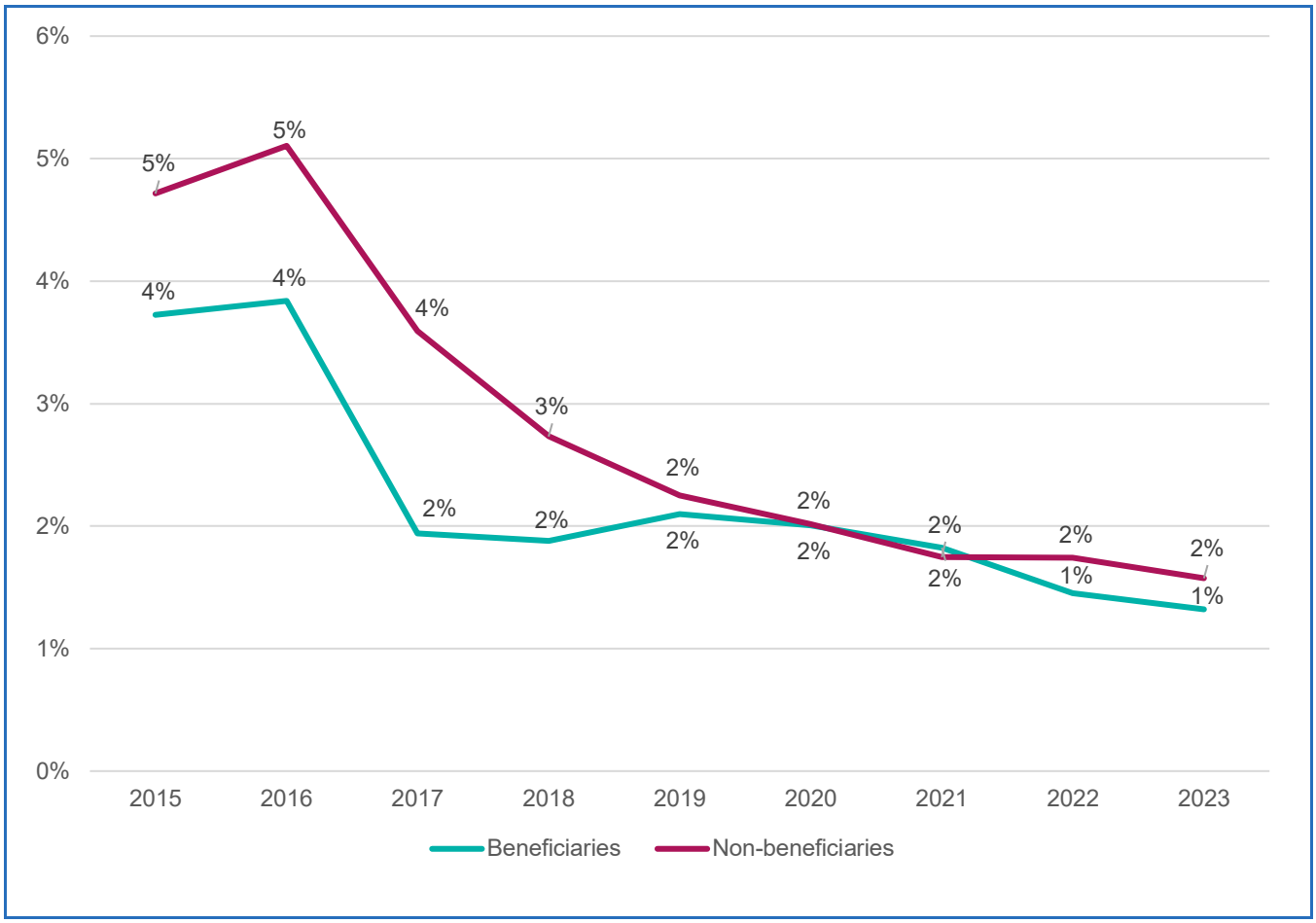


Source: FAME database. Base: 297 beneficiaries and 3,000 non-beneficiaries.

Alt text for Figure 38:

Bar chart showing the total number of employees in active business from 2014-2023. From left to right, the bars represent 'Beneficiaries' and Non-beneficiaries'. The chart shows a rapid rise in beneficiary employees from 2015 to 2016, steady levels until 2019 and consecutive growth until 2022. For non-beneficiaries, the graph shows a steady growth from 2015 to 2022.

Figure 39: Employment growth breakdown of active businesses, 2015-2023.



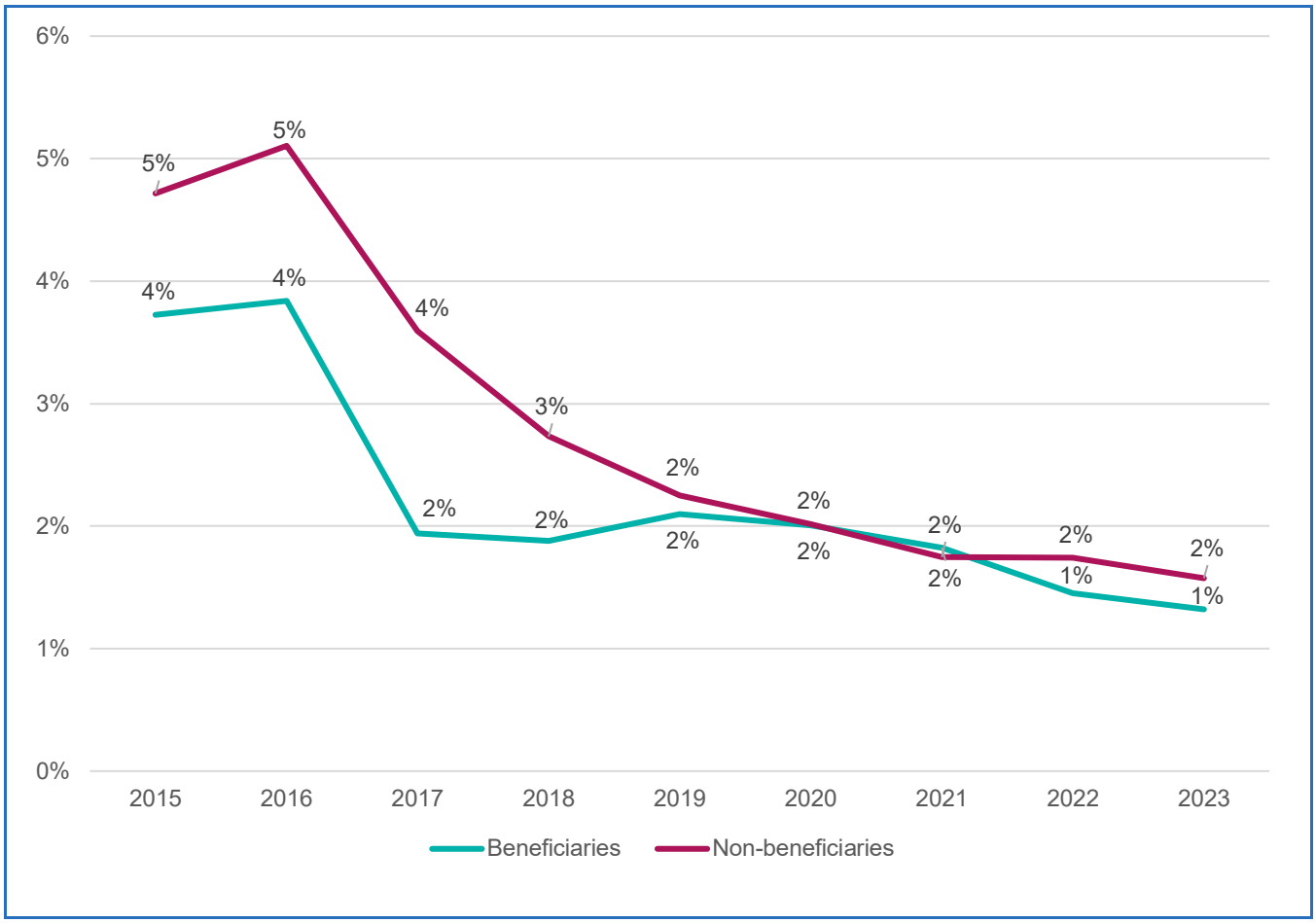
Source: FAME database. Base: 297 beneficiaries and 3,000 non-beneficiaries.

Alt text for Figure 39:

Line graph showing employment growth of active businesses as a percentage from 2015-2023. From left to right, the lines represent: 'Beneficiaries' and 'Non-beneficiaries'.

Figure 38 and Figure 39 show that since the inception of the UEZ pilot scheme in 2014 there has been an upward trend in the number of employees in active businesses for all businesses (both beneficiaries and non-beneficiaries). 2022 was the highest number of employees since 2014 with 7,572 employees in beneficiary business compared to 6351 employees in non-beneficiary businesses. Figure 39 highlights that there has been employment growth in businesses since the inception of UEZ, starting off with a 4 to 5% growth in 2015 and dropping to 1 to 2% growth in 2023.

Figure 40: Turnover breakdown in active businesses, 2022.



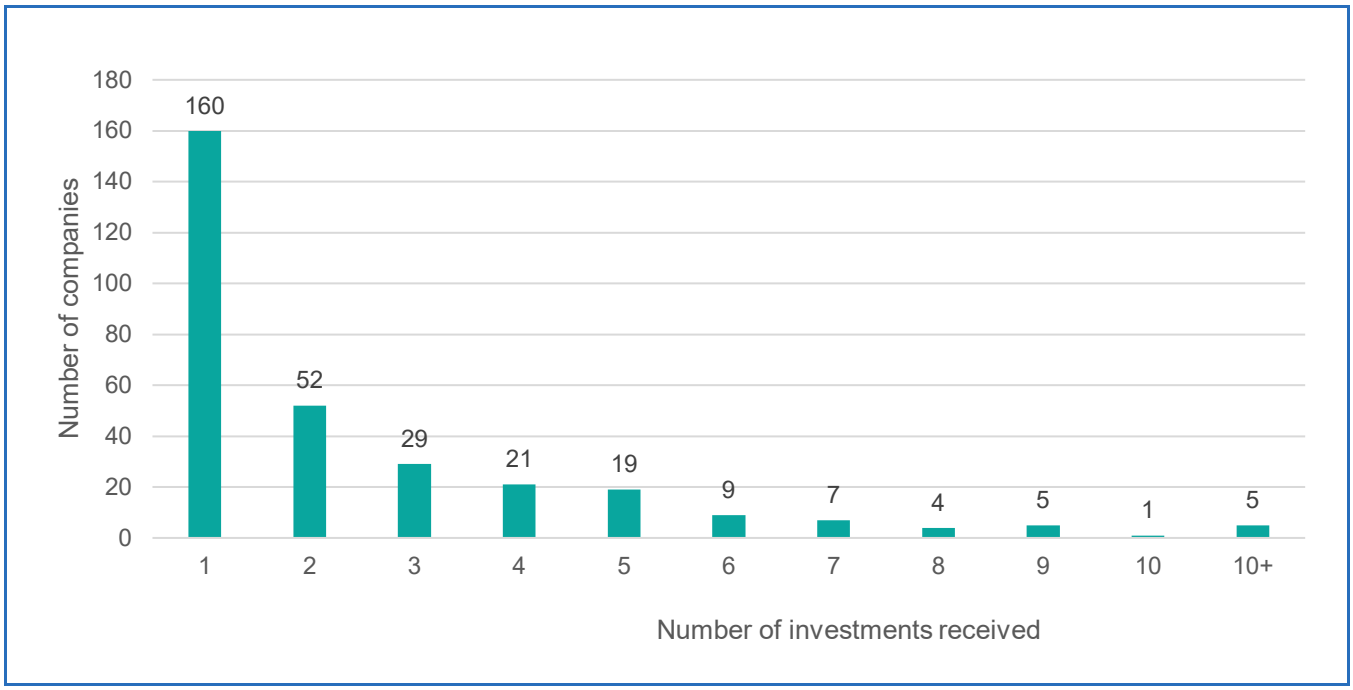
Source: FAME database and NOMIS database. Base: 27 beneficiaries and 2,767,700 non-beneficiaries

Alt text for Figure 40:

Bar chart showing turnover breakdown in active businesses. From left to right, the bars represent: 'Non beneficiaries' and 'Beneficiaries'.

In 2022, the average turnover reported by beneficiaries was £46k. This is highlighted in Figure 40 that shows that the majority of beneficiaries earned between 0 and 49 thousand in 2022 (81%). These figures are biased due to the presence of large outliers in the data and missing figures from majority of the beneficiaries. The distribution of turnover reported by businesses supported by UEZ compared to the rest of the business population is significantly different with majority of non-beneficiaries (31%) earning between £100k and £199k compared to a very small number of beneficiaries (7%). Overall, beneficiaries have a median turnover of £14k.

Figure 41: Breakdown of the annual number of investments received for beneficiaries, 2023.

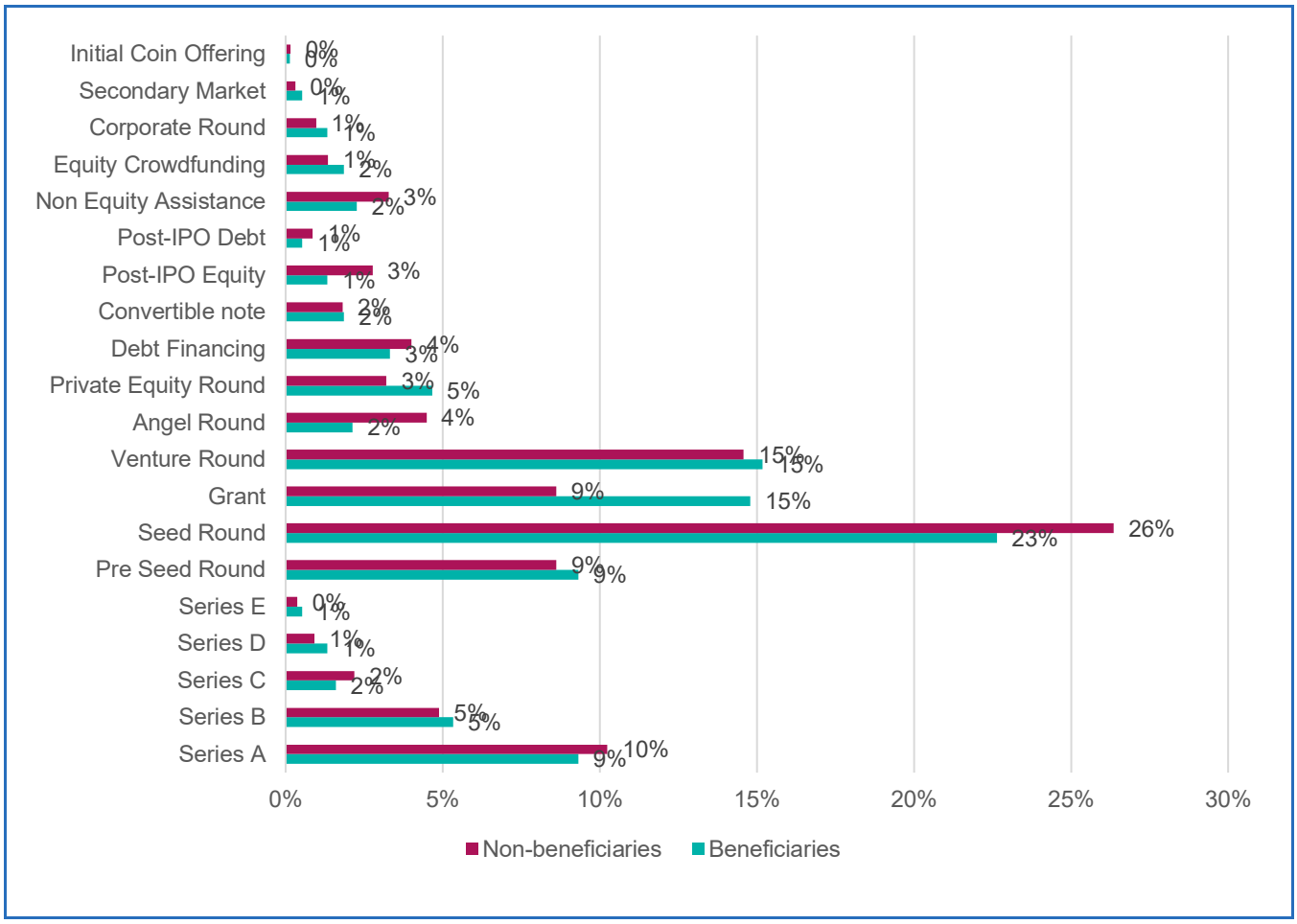


Source: Crunchbase Database. Base: 312 beneficiaries and ~ non-beneficiaries.

Alt text for Figure 41:

Bar chart displaying the number of companies that received a specific number of investments: left to right from 1 investment to 10+ investments.

Figure 42: Breakdown of types of investments received for active businesses, 2023.



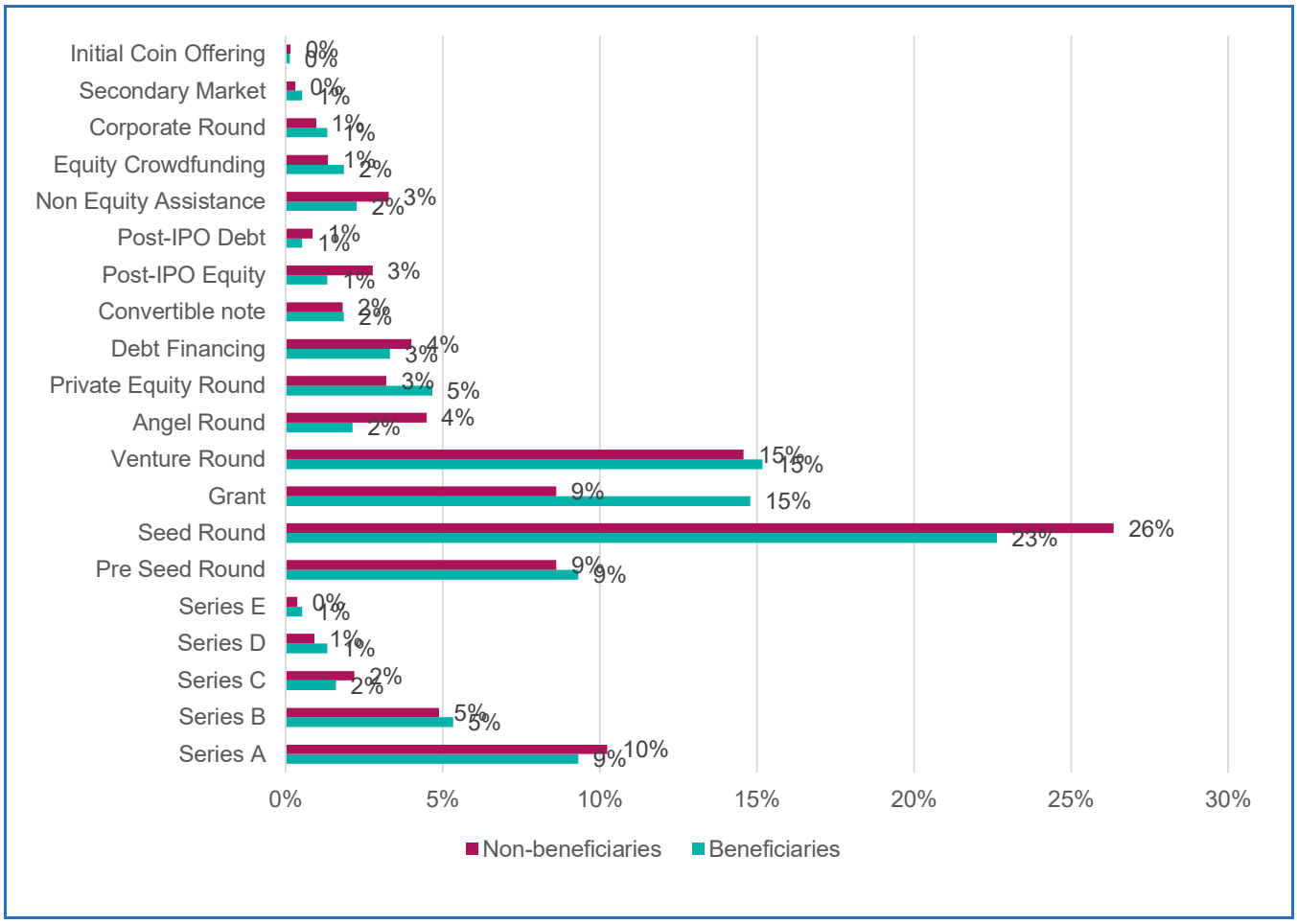
Source: Crunchbase Database. Base: 312 beneficiaries and ~ non-beneficiaries.

Alt text for Figure 42:

Bar chart showing the breakdown of types of investments received for active businesses. From left to right, the bars represent 'Non-beneficiaries and 'Beneficiaries'.

Figure 42 shows that a significant number of beneficiaries had received at least 1 investment. In 2023, the average investment received by beneficiaries was £14.7m, with an average of 2 investments per business. Figure 32 shows the distribution of investments reported by businesses supported by UEZ compared to the rest of the business population. Around 23% of beneficiaries received investment through a seed round, compared to 26% of non-beneficiaries. The majority of beneficiaries received investments through seed rounds, grants, and venture rounds, with non-beneficiaries following a similar trend.

Figure 43: Breakdown of investments received by beneficiaries before and after joining UEZ



Source: Crunchbase Database. Base: 312 beneficiaries

Alt text for Figure 43:

A double bar graph showing the breakdown of investments received by beneficiaries before and after joining UEZ. From left to right, the sections represent: ‘Less than 1 year’, ‘1 year’, ‘2 years’, ‘3 years’, ‘4 years’, ‘5 years’ and ‘Greater than 5 years’.

Econometric analysis

Methodology

This section outlines the data sources and the methodological approach adopted for the study, before concluding with a summary of the key assumptions and limitations of the approach.

Data sources

We have utilised several data sources for the purposes of this study, including the following:

- **Business Structure Database (BSD)**: this dataset provides longitudinal records for all firms registered for VAT and PAYE in the UK. As such, the dataset provides significant coverage of all economic activity in the country. The dataset includes information on businesses' descriptive characteristics (e.g., industry of operation, location, and age) and their economic performance (e.g., employment and turnover). The dataset has a long lag of one year because the data for the prior financial year is taken around April and made available to researchers in September of each year. For the purposes of this study, we have utilised data from 2014 (i.e., two years before the first engagement with the UEZ) to 2023 (i.e., the latest available year). Additional analysis performed to test the impact of lagging the BSD dataset by one year showed limited impact on the final results. As a share of businesses first engaged with UEZs in 2023, we performed the main analysis using the unlagged dataset to keep these businesses in the analysis. The economic impact associated with these businesses is only captured at t+0.
- **UEZ monitoring dataset**: the dataset includes a list of current and former member businesses from the time each UEZ has been in operation. It includes a list of 312 businesses, the name of the UEZ that each business is associated with, and the first year of engagement. The information was provided to Technopolis separately by each UEZ lead. The dataset includes all UEZs in scope of the evaluation, except Sensor City where data on supported businesses was not available. Figure 10 show a breakdown of the number and percentage of beneficiary businesses who have been identified in BSD. The identification rate across all UEZs is 75%, ranging from the lowest of 59% in DHEZ to the highest of 93% in Ingenuity Centre.
- **Gross Value Added (GVA) conversion factors**: The dataset includes GVA and turnover estimates per region and industry, for the years between 2008 and 2022. The data is based on findings from the Annual Business Survey and published by the ONS[32]. We have utilised information from this dataset to convert the BSD turnover estimates to GVA by multiplying these turnover figures by the corresponding GVA per £1 of turnover conversion factors for each industry, region, and year.

[32] Non-financial business economy, regional results: Sections A to S, All Regions, 2008 to 2022 https://www.ons.gov.uk/businessindustryandtrade/business/businessservices/datasets/uknonfinancialbusinesseconomyannualbusinesssurveyregionalresultssectionsas

- **Consumer Price Index (CPI)**: we used the CPI to adjust the turnover estimates to 2022 prices. As such, the estimates of impact reflect growth in real terms (rather than nominal).

Methodological approach

The econometric analysis implemented for this study aims to estimate extent to which UEZ support has contributed to improvements in business performance amongst beneficiary businesses compared and a similar group of non-beneficiaries. The latter group allows us to control for deadweight by providing an estimate of the likely trajectory of business performance in the absence of UEZ support. Non-beneficiary businesses, who have not engaged with UEZs at any point in time, are selected from the wider business population to act as control units against which the performance of beneficiaries is compared.

To make this comparison credible, we controlled for pre-treatment characteristics using **Propensity Score Matching (PSM)**. This statistical method estimates the probability of receiving support prior to the first UEZ engagement based on observable characteristics (such as location, age, and industry) and then matches each beneficiary business to a comparable non-beneficiary business with a similar propensity score. As businesses have engaged with UEZs at different points in time, the baseline for each business is defined as the two-year average prior to the first engagement and denoted as 'B'. Beneficiaries are matched with active non-beneficiaries. Businesses who become inactive (e.g., dissolved/liquidated) in future periods are kept in the dataset with their turnover and employment figures replaced with zeros up to the latest year of analysis.

To estimate the impacts of UEZ support, we implemented a **Difference-in-Difference** model using the reduced sample of matched businesses identified via PSM. This model follows a two-step approach: first, it compares the changes in outcomes variables before and after the first contact with UEZ; and second, it calculates the difference between beneficiary and non-beneficiary businesses to provide an estimate of additionality. As such, the difference-in-difference coefficient provide an average estimate of the change in business performance after the first UEZ engagement, over and above what is observed for the non-beneficiary group.

As the first year of engagement with UEZ varies across businesses, the treatment effects are staggered across all years. In our analysis, we denote the first year of engagement as t+0 and we trace the change in business performance in every period from t+1 to t+6. The estimates for t+0 reflect the impact for all matched beneficiary businesses, while the estimates for t+6 reflect the impacts on businesses who first engaged with UEZs in 2016. As such, the trends presented in our analysis are influenced by the changes in the composition of the sample size.

Our analysis explores the impacts on employment, real turnover in 2022 prices (i.e., after adjusting for inflation), and labour productivity (i.e., turnover per employee). To estimate the Gross Value Added (GVA) impacts, we multiplied the turnover figures by the ONS GVA conversion factors per region and industry (see section 3.2). These GVA estimates provide a suitable measure of economic impact as they illustrate the portion of businesses' turnover that

represents value added after removing value created elsewhere in the supply chain. The GVA and employment benefits accumulate since the first year of UEZ engagement are then estimated and adjusted for additionality by subtracting the changes observed for the counterfactual group of non-beneficiaries. The cost-effectiveness analysis compares the net cumulative benefits to the total value of public investment and private sector leverage invested in UEZs to date.

Assumptions and limitations

The methodological approach relies on several key assumptions describe below.

- **Parallel trends assumption**: in the absence of the treatment, it is assumed that beneficiary and non-beneficiary businesses would have maintained similar differences as in the baseline period.
- **Conditional independence assumption**: implies that the variables used to perform the propensity score matching are sufficient to ensure that businesses in the non-beneficiary group are a suitable counterfactual. While PSM offers a way to controlling for several different characteristics prior to the intervention, it omits important aspects that cannot be observed in the BSD, including the quality of the leadership team in each business and their overall propensity to undertake innovative activities). Furthermore, the propensity score estimates represent a rough approximation based on a basket of different characteristics and it is therefore unlikely to provide an exact match for every one of them.
- **Common support assumption**: implies that there is overlap in the propensity scores of beneficiaries and non-beneficiaries. Our analysis indicates that 68% of beneficiary businesses (159 out of 235) have a match (i.e., non-beneficiary businesses with similar propensity scores).

Figure 44: Identification and match rate for beneficiary businesses

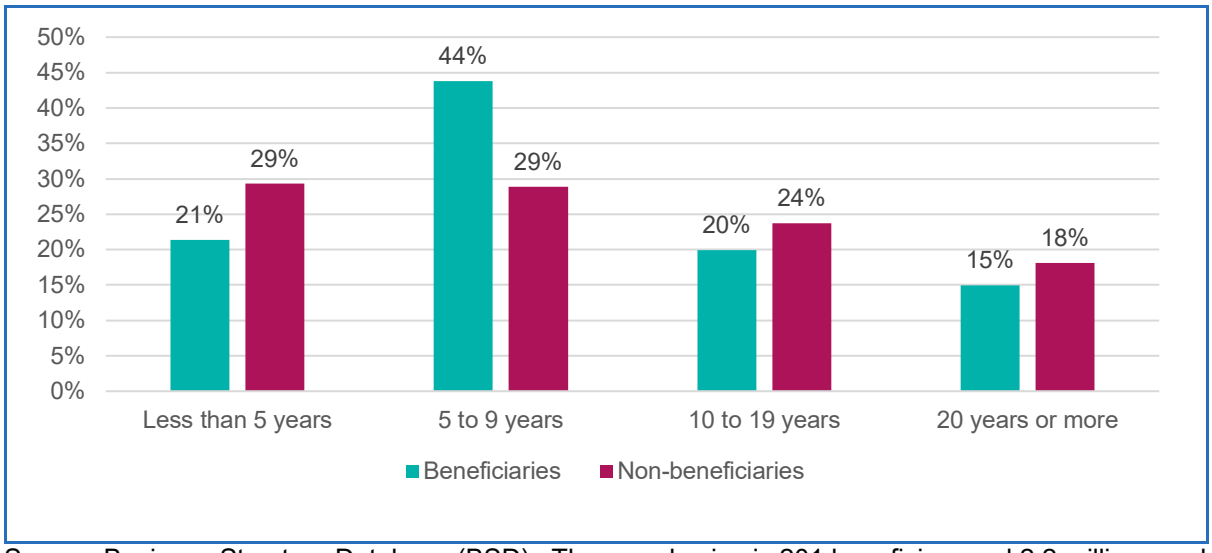
	Number of businesses in monitoring dataset	Number of businesses identified in BSD	Identification rate (%)	Number of businesses with a match after PSM	Match rate (%)
Bradfield Centre	**130**	**92**	**71%**	**53**	**58%**
Future Space	**123**	**94**	**76%**	**65**	**69%**
Ingenuity Centre	**42**	**39**	**93%**	**31**	**79%**
DHEZ	**17**	**10**	**59%**	**10**	**100%**

Total	**312**	**235**	**75%**	**159**	**68%**

Source: Business Structure Database (BSD)

Descriptive statistics

Figure 45: Age breakdown for beneficiaries and non-beneficiaries in the wider business population, 2022

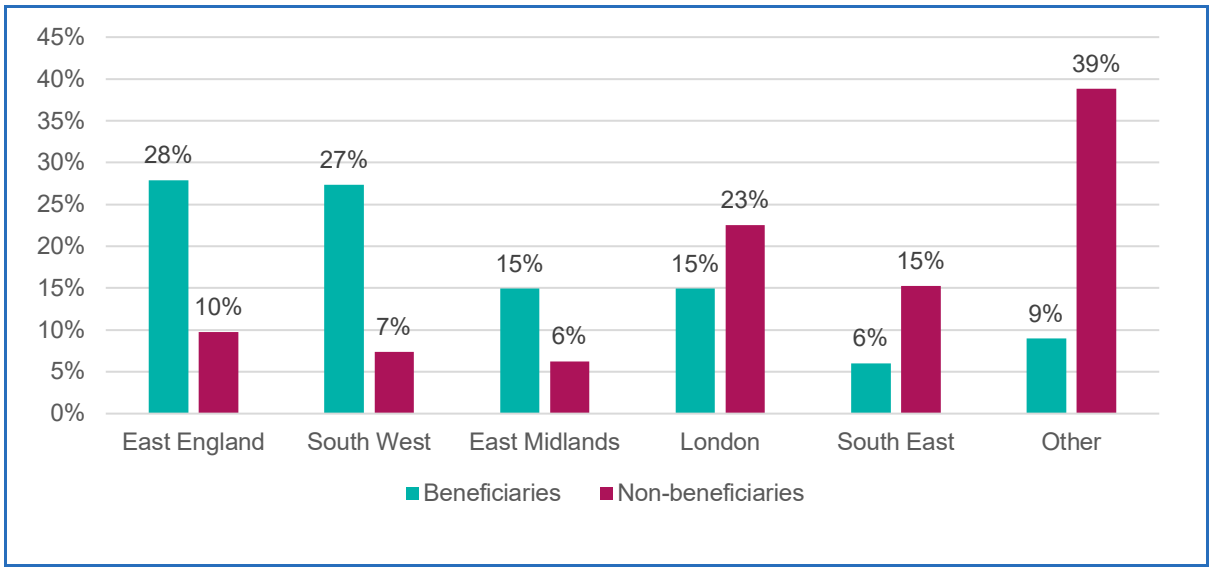


Source: Business Structure Database (BSD). The sample size is 201 beneficiary and 2.2 million non-beneficiary businesses.

Alt text for Figure 45:

Bar chart showing the age breakdown for beneficiaries (left) and non-beneficiaries (right) in the wider business population. From left to right, the sections represent: 'Less than 5 years', '5 to 9 years', '10-19 years' and '20 years or more'. Beneficiaries were most commonly between five and nine years, whilst non-beneficiaries were most commonly either under five years old, or five to nine years old.

Figure 46: Regional breakdown for beneficiaries and non-beneficiaries in the wider business population, 2022

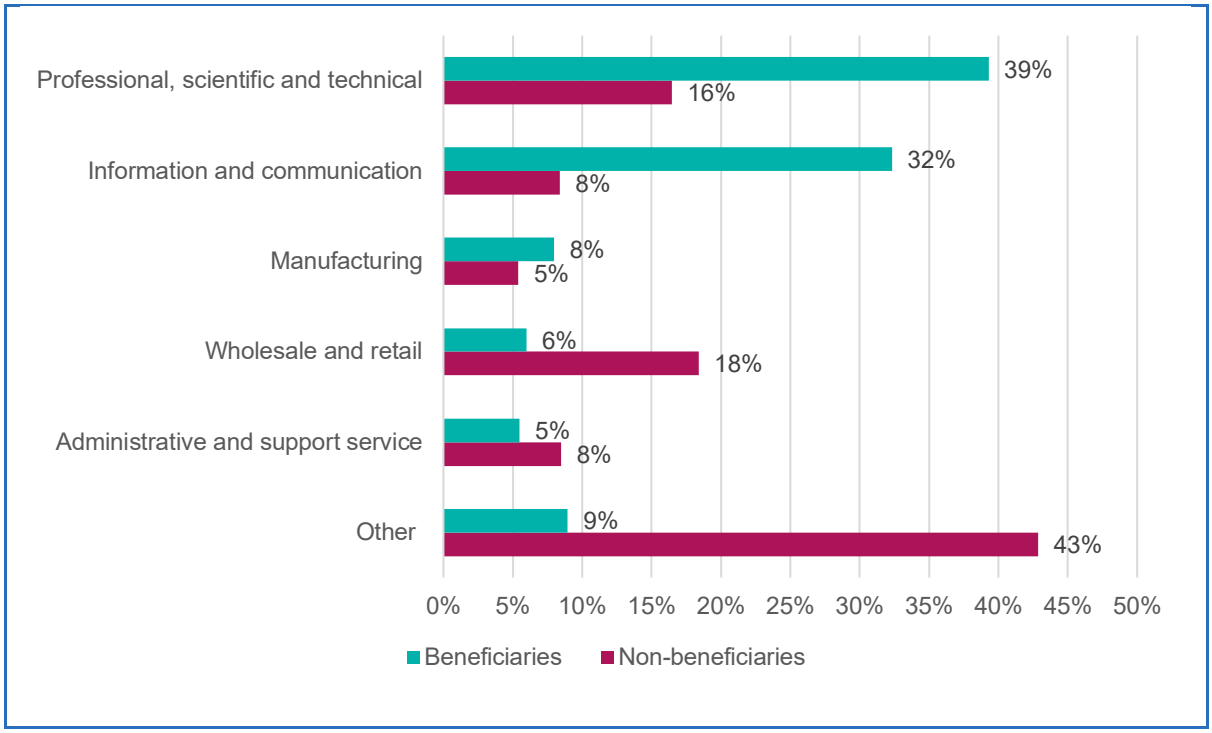


Source: Business Structure Database (BSD). The sample size is 201 beneficiary and 2.2 million non-beneficiary businesses.

Alt text for Figure 45:

Double bar chart showing the regional breakdown for beneficiaries (left) and non-beneficiaries (right) in the wider business population. From left to right, the sections represent: 'East England', 'South West', 'East Midlands', 'London', 'South East' and 'Other'. Beneficiaries were most commonly located in East England or South West. By contrast, non-beneficiaries tended to be located either in London or 'Other' area(s).

Figure 47: Industrial breakdown for beneficiaries and non-beneficiaries in the wider business population, 2022



Source: Business Structure Database (BSD). The sample size is 201 beneficiary and 2.2 million non-beneficiary businesses.

Alt text for Figure 47:

Double bar chart showing the industrial breakdown for beneficiaries (left) and non-beneficiaries (right) in the wider business population. From top to bottom, the sections represent: 'Professional, scientific and technical', 'Information and communication', 'Manufacturing', 'Wholesale and retail', 'Administrative and support service' and 'Other'. Most beneficiaries were either in professional, scientific and technical assignments or in information and communication, while non-beneficiaries were most commonly in 'Other' roles.

Results from the sensitivity analysis

We performed sensitivity analysis to test the extent to which the main findings are influenced by modifications to the methodology or sample size. These key modifications include:

- **Including treated businesses without a matched control unit after PSM**. The sensitivity analysis demonstrates to what extent the median treatment effects change after 76 non-matched treated businesses are incorporated in the analysis. The additional cost-effectiveness analysis presents the raw figures for the full sample without any modifications. We also test the impact of making two different adjustments to reduce the influence of large outliers, including using a weighting approach or removing outliers.
- **Estimating the Average Treatment Effects on the Treated (ATT) based on a generalised fixed effects regression**. This analysis estimates the average difference-in-difference coefficients (instead of the median) using the reduced sample of matched treated businesses and their control units identified through PSM. As expected, the average absolute values are significantly different from the median values due to large outliers in the dataset. We used the log transformation of the dependent variable to control for these extreme values in the dataset.

The results from the sensitivity analysis are presented below.

Including treated businesses without a matched control unit after PSM

In this section, we present the findings from our sensitivity analysis which incorporates treated businesses without a matched control unit after PSM. Our analysis indicates that 68% of beneficiary businesses (159 out of 235) have a match after implementing PSM. The remaining 76 businesses were dropped from the main analysis because the PSM model was not able to identify a suitable control unit (i.e., non-beneficiary businesses with similar propensity scores).

The analysis below presents how robust the treatment effects are when non-matched businesses are included in the sample, potentially giving us insights into whether the results

can be generalised to the whole treatment population. The analysis in Table 31 includes both SMEs and large businesses. The estimates are based on the median figures to remove the influence from large outliers in the dataset.

The sensitivity analysis indicates that the results are broadly similar to our main findings. As shown, there are negligible difference in the employment treatment effects between the two sample groups which are mainly concentrated in treatment periods where the sample size is lower. We note slightly larger differences in the turnover treatment effects which increased from £31k to £46k when non-matched businesses are included in the sample, compared to when they are excluded. Similarly, we note a slight change in the labour productivity estimates, rising from £5k when non-matched businesses are excluded from the analysis to £11k when these businesses are included.

Table 32: Sensitivity analysis: difference-in-Difference coefficients (including non-matched treated businesses)

	B	t+0	t+1	t+2	t+3	t+4	t+5	t+6	Median
Employment									
Absolute	0	0	0	1	1	2	2	3	1
Ppt	0	8ppt	21ppt	29ppt	29ppt	35ppt	53ppt	48ppt	13ppt
N	0	394	302	270	241	199	172	147	394
Turnover									
Absolute £k	0	7	6	59	102	113	138	250	46
Ppt	0	2ppt	4ppt	28ppt	40ppt	35ppt	31ppt	84ppt	11ppt
N	0	394	302	270	241	199	172	147	394
Turnover per employee									
Absolute £k	0	4	10	27	40	33	29	94	11
Ppt	0	-4ppt	-4ppt	9ppt	21ppt	-2ppt	-15ppt	25ppt	-5ppt
N	0	394	302	270	241	199	172	147	394

Source: Business Structure Database (BSD). Note: The sample size estimate includes all matched treated and non-treated businesses, with roughly an equal split between the two groups, as well as non-matched treated businesses.

Table 33 presents the total net cumulative GVA and employment impacts for the full sample of beneficiaries, including both matched and non-matched businesses. To measure the level of sensitivity in our findings, we compare the results under three separate scenarios described below.

- **Using the raw data without any modifications to the sample**: the analysis includes large outliers which significantly skew the results. As shown in the table, the total net cumulative GVA is £287 billion, resulting in a cost-effectiveness ratio of 1:5,860 (i.e., £5,860 in net GVA benefit for every £1 of invested in UEZs). Most of this gain is attributed to a small sample of beneficiaries that have performed exceptionally well over the period. Although the UEZ pilot has achieved positive results on balance, this level of performance is not representative across the sample of beneficiaries.
- **Applying an inverse employment weighting**: We applied an inverse weighting method where each businesses' contribution to the cumulative GVA is adjusted by a factor that accounts for its employment size[33]. The inverse weight implies that businesses with a larger employment size at the time of their first treatment contribute less to the final cumulative GVA estimate. This approach allows us to include all beneficiaries in the analysis whilst also balancing the influence of outliers from large businesses. Using this method, we note that the UEZ pilot is associated with substation growth in net cumulative GVA (£60 billion) and employment (938 employees). Hence, we show that the funding has delivered £1,222 in net GVA benefit and 19 employment benefits for every £1 of invested in UEZs.
- **Removing outliers**: we removed extreme values that are two standard deviations above or below the mean. As noted previously, the removal of outliers makes a substantial impact on the final findings. We find that the total net cumulative GVA impact associated with UEZs is £465 million based on observed data for the full sample of both matched and non-matched beneficiaries identified in the BSD dataset. If we assume that those beneficiaries who were not identified in BSD experience the same average growth per business as those who are included in the analysis, then the total net cumulative GVA benefit increases to £636 million. Hence, we show that the funding has delivered £13 in net GVA benefit for every £1 of invested in UEZs. In comparison, the main analysis, which doesn't include non-matched businesses after PSM, has a £16 return for every £1 invested.

Table 33: Sensitivity analysis: Cumulative change in GVA and employment over the entire treatment period, per UEZ (including non-matched treated businesses)

	Raw data	Inverse employment weighting	Excluding outliers

[33] For the beneficiary group, the inverse weight is calculated as follows: $Inverse\ weight = 1 - \left(\frac{Employment_i}{\sum Employment}\right)$

Gross Value Added (GVA)			
Cumulative GVA per beneficiary business £m *	918	191	2.0
Net cumulative GVA per business £m	918	192	2.0
Total net cumulative GVA £m	216,747	45,208	465
Total net cumulative GVA £m (after adjustment **)	286,547	59,766	636
Cost of investment	48.9	48.9	48.9
Cost effectiveness ratio	1:5,860	1:1,222	1:13
Sample size of beneficiary businesses	235	235	228
Employment			
Cumulative employment per beneficiary business *	-14	2.7	4.4
Net cumulative employment per business	-14	3.0	5.2
Total net cumulative employment	-3,309	709	1,195
Total net cumulative employment (after adjustment**)	-4,393	938	1,635
Cost of investment	48.9	48.9	48.9
Cost effectiveness ratio	1:-90	1:19	1:33
Sample size of beneficiary businesses	235	235	228

Source: Business Structure Database (BSD). Note: * Cumulative growth estimates for beneficiaries from t+0 to t+6. Note: ** The figures are scaled to reflect the number of beneficiary businesses that were not identified in BSD. We assume that they experience the same average growth as those who were identified.

Estimating the average treatment effects on the treated (ATT)

We implemented a generalised difference-in-difference regression to test the average impact of UEZ treatment on the dependent variables (employment, turnover, turnover per employee). The model is specified as follows:

$$\boldsymbol{Y_{it} = \alpha_i + \beta X_{it} + \delta_t + u_i + e_{it}}$$

$$\boldsymbol{i = 1 \ldots n; t = 1 \ldots T}$$

Where:

- Y_{it} is the outcome variable for business i at time t. The log transformation of Y_{it} measures the impact on the dependent variable in percentage terms.
- α_i is the intercept for each business (n entity specific intercept)
- X_{it} is the independent variable which is equal to 1 in all post-treatment periods and zero otherwise
- β is the coefficient measuring the average treatment effect on the treated (ATT). It represents the impact of UEZ after controlling for business and time heterogeneity
- δ_t is the unknown coefficient for the time regression (t)
- u_i is the within-entity error term and e_{it} is the overall error term

The model controls for fixed effects within businesses and common time trends that affect both treated and untreated businesses. The analysis is based on the sample of matched treated SME businesses and their control units identified via PSM.

Looking at the Average Treatment Effects presented in Table 34, we find that UEZ is associated with one additional employee per beneficiary business, on average. In percentage terms, there is an average employment growth of 23%, over and above what beneficiaries would have likely experienced without the treatment. This estimated percentage increase is statistically significant at 1% confidence level. We find evidence that the average employment impacts increase with the duration after treatment, as all average coefficients of the log transformed employment variable are statistically significant at least at 10% confidence level.

The difference-in-difference model suggests that UEZ treatment is associated with an average annual increase in turnover of £1.7 million per business. When looking at the log of turnover, we find that the treatment increases turnover by 13%, on average. The results are not statistically significant.

In terms of turnover per employee, we find that the average treatment effects are -£13k per businesses (or -10%). However, these results are not statistically significant.

Table 34: Average Treatment Effects on the Treated

	t+0	t+1	t+2	t+3	t+4	t+5	t+6	ATT
Employment								
Treatment variable	1.2	1.2	1.4	3.3	4.3	4.5	6.8	1
Standard error	1.1	1.2	1.7	2.7	3.2	2.7	4.0	1.5
P-value	24%	32%	42%	23%	19%	10%	9%	54%
Constant	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.9

R2 overall	0%	0%	0%	0%	0%	0%	0%	0%
N	298	210	180	153	113	86	61	298
Turnover (£k)								
Treatment variable	1,238	2,036	3,076	1,710	2,557	1,363	3,346	1,771
Standard error	976	1,687	2,422	826	1,613	683	1,993	1,375
P-value	21%	23%	21%	4%	11%	5%	9%	20%
Constant	891	891	891	891	891	891	891	873
R2 overall	0%	0%	0%	0%	0%	0%	0%	0%
N	298	210	180	153	113	86	61	298
Turnover per employee (£k)								
Treatment variable	0	8	20	33	28	32	45	-13
Standard error	10	12	14	17	19	21	26	11
P-value	99%	54%	17%	6%	13%	14%	8%	25%
Constant	128	128	128	128	128	128	128	122
R2 overall	1%	1%	1%	1%	1%	1%	1%	1%
N	298	210	180	153	113	86	61	298
Employment (%)								
Treatment variable	14%	23%	25%	26%	32%	40%	28%	23%
Standard error	6%	8%	10%	12%	13%	14%	17%	7%
P-value	3%	0%	1%	3%	2%	0%	10%	0%
Constant	1%	1%	1%	1%	1%	1%	1%	1%
R2 overall	1%	1%	1%	1%	1%	1%	1%	1%

N	298	210	180	153	113	86	61	298
Turnover (%)								
Treatment variable	6%	12%	12%	13%	15%	45%	39%	13%
Standard error	8%	10%	13%	14%	16%	18%	22%	9%
P-value	49%	25%	39%	35%	36%	1%	8%	16%
Constant	5%	5%	5%	5%	5%	5%	5%	5%
R2 overall	0%	0%	0%	0%	0%	0%	0%	0%
N	298	210	180	153	113	86	61	298
Turnover per employee (%)								
Treatment variable	-10%	-15%	-5%	3%	-16%	-3%	0%	-10%
Standard error	7%	8%	9%	11%	11%	13%	13%	7%
P-value	13%	8%	62%	80%	17%	84%	99%	16%
Constant	4%	4%	4%	4%	4%	4%	4%	4%
R2 overall	3%	3%	3%	3%	3%	3%	3%	3%
N	298	210	180	153	113	86	61	298

Source: Business Structure Database (BSD). Note: The analysis excludes large businesses which skew the absolute figures to a large extent. Note: * The sample size is split equally between beneficiaries and non-beneficiaries. Note: A p-value lower than 10% indicates that the coefficient is statistically significant.

Contribution analysis

Table 35: Detailed contribution analysis for UEZ programme

Aspect of Theory of Change		Contribution claim	Assessment of UEZ programme's contribution claim
Inputs and activities to outputs:	Occupancy of new work-space by SMEs, start-ups, and/or student entrepreneurs	The UEZ programme leads to the creation of new workspace that meets the demands of the local business community	**Evidence that supports the contribution claim** During the evaluation period, all of the UEZs have had some workspace occupied. This suggests that there has been some local demand for the newly created employment space. **Evidence that refutes the contribution claim** The Sensor City building was closed for a reasonable proportion of the valuation period, meaning that one UEZ at least was not adding to the local stock of employment space. **Overall assessment** Contribution claim strongly supported. Despite some issues with Sensor City, all of the UEZs have had some level of occupancy from local firms. On balance, the evidence to support the contribution claim is very strong.
	New and innovative businesses attracted to the UEZ	The UEZs successfully market themselves as centres conducive to innovative businesses, and secure tenancy from	**Evidence that supports the contribution claim** All the UEZs have prioritised the supporting of innovative businesses. Each UEZ has been able to secure new joiners at different points during the evaluation period. This demonstrates that they collectively

		such businesses as a result.	have been able to drive interest amongst new businesses, and presumably target innovative ones. **Evidence that refutes the contribution claim** None **Overall assessment** Contribution claim strongly supported. The monitoring data overwhelmingly supports notion that the UEZs have all attracted new businesses.
	Provision of business engagement and support services	Because of the capital expenditure provided by the UEZ programme, Centres are able to leverage co-investment from other stakeholders (e.g. universities, public authorities) to pay for business support and wider services there	**Evidence that supports contribution claim** Monitoring data returns show that all of the UEZs have over time, held events aiming to support the local business community. **Evidence that reputes contribution claim** There is relatively poor knowledge of the UEZs amongst some key stakeholders (especially LEPs). Therefore, relative to the pre-programme period, some local stakeholders would have invested in local business support services even in the absence of the UEZs. **Overall assessment** Contribution claim neither supported nor unsupported. Evidence is somewhat conflicting. It is clear that the UEZs have provided some business engagement services, but is unclear how far these are additional so simply replicating work

			that other stakeholders are already doing locally.
	Income generated from UEZ businesses and service-provision	The presence of UEZ-funded workspace helps generate rental income for host universities.	**Evidence that supports contribution claim** Monitoring data demonstrates that three of the four UEZs have generated income from UEZ businesses each year from 2017 to 2023. Some UEZs have also gained income from facilities and equipment and related services to UEZ businesses. **Evidence that refutes contribution claim** Sensor City was closed in 2022 and 2023 and therefore did not generate any income from businesses. **Overall assessment** Contribution claim strongly supported. Aside for a two-year period for Sensor City, all of the UEZs have generated income from businesses. On balance, the evidence to support the claim is very strong.
Outputs to outcomes	Increased collaboration between UEZ businesses, and between UEZ businesses and public sector bodies and university	The proximity and institutional links between UEZs and universities creates opportunities for interactions between the UEZ business and university communities.	**Evidence that supports contribution claim** Survey and interview evidence indicates some examples of UEZ businesses engaging with university communities. Examples have included hiring university interns, or working with university researchers. There is some interview evidence suggesting that the management teams at UEZs have facilitated collaboration

			Evidence that refutes contribution claim Survey evidence shows that over time, the level of interaction between UEZ businesses and university stakeholders has fallen in some areas (e.g. use of university facilities by UEZ businesses). This suggests that the programme's contributory effect has been diminishing. **Overall assessment** Contribution claim somewhat supported. It is clear that some university/business interacted has occurred at UEZs, meaning that expected observations seen. Anecdotal evidence of causality also suggests that the UEZs have directly enabled these interactions. However, levels of collaboration over time raises a question of their sustainability in the long run.
	Increased sales, R&D and employment of UEZ businesses	UEZ support provides the infrastructure and capabilities that tenant businesses need to increase their activity levels sufficiently to increase their sales, R&D, and employments (relative to their position prior to joining the UEZ).	**Evidence that supports contribution claim** Survey and interview evidence demonstrates that some UEZ businesses have recorded higher levels of sales, R&D and employment. **Evidence that refutes contribution claim** Based on survey evidence alone, the average FTE per business was lower in 2023 than compared to the baseline. The situation is also similar for reported R&D investment. Survey evidence for Year 3 also indicates that the vast majority respondents do not feel that UEZ

			engagement has had any effect on their employment, sales, or R&D investment respectively. **Overall assessment** Contribution claim somewhat unsupported. While there is some evidence of UEZ businesses seeing improved business performance, survey evidence suggest that the programme itself may not have been a cause for this.
	Increased equity investment in UEZ businesses	The UEZ programmes helps forge links between financiers and tenant businesses, leading to increased investment occurring. The programme also helps improve the performance of UEZ businesses to the extent that investors see them as being more investable.	**Evidence that supports contribution claim** Limited anecdotal evidence of some UEZ-supported businesses having been successful in funding rounds since joining a UEZ. Survey evidence indicates UEZ-supported businesses over time, have been able to secure equity investment. **Evidence that refutes contribution claim** The survey evidence does not indicate that UEZ engagement has led to equity investment – it is possible some of the investments could have occurred anyway. The mean value of equity investment reported by survey respondents fell between the Year 2 and Year 3 reports, suggesting the programme's effect on investment may not be too strong. **Overall assessment** Contribution claim neither confirmed nor unconfirmed. While some supported firms have seen

			investment, there is too much uncertainty around the programme's attributability here to reach a firm conclusion on the contribution claim.
	Innovative activity by UEZ businesses	The UEZ programme provides tenants with the infrastructure, equipment and knowledge needed to undertake new and innovative activity, including some which result in the filing of intellectual property.	**Evidence that supports contribution claim** Survey evidence provides numerous examples of UEZ tenants having filed new intellectual property such as software licences and patents. **Evidence that refutes contribution claim** There is little evidence to demonstrate a causal link between UEZ support, and the development of new intellectual property. **Overall assessment** Contribution claim somewhat supported. Clear evidence of programme objective on seeing innovative activity by UEZ businesses having been achieved. The evidence is weak however, on programme attribution.
	Increased commercialisation of university research	The UEZ programme provides physical workspace and wrap around advice to university researchers which gives them the means to more effectively take their research to market.	**Evidence that supports contribution claim** Survey evidence highlights numerous instances over time of formal research collaborations between UEZ businesses and host universities. This activity is often an important pathway to research commercialisation. **Evidence that weakens contribution claim** While there is evidence of university-UEZ business

			collaboration, there is no strong widespread evidence to suggest that these collaborations have yet produced goods or services that have reached market. **Overall assessment** Contribution claim somewhat unsupported. The UEZ programme has supported activity that has put certain university research on the trajectory towards commercialisation, but commercialisation has not yet been achieved on a widespread basis.
	Reputational benefits for the university/city	As physical buildings, the UEZ help enhance the university's reputation by showing stakeholders that they house state-of-the art facilities. More generally the UEZs each support such a level of innovative activity, and are so well-regarded in the local business and innovation ecosystems, that they help improve the image and reputation of the host university and city more widely.	**Evidence that supports contribution claim** Several interviewed stakeholders have spoken of how the UEZs have helped enhance the reputation of the host university, helping raise awareness of the university. Stakeholders in Bristol, Nottingham and Bradford also spoke of how the UEZ's work has helped encourage skilled workers to move to the area, again demonstrating the enhancement of the local image. **Evidence that weakens contribution claim** Stakeholder interviews have indicated that some UEZs are not very well known within the local area's wider business community. In that sense, the UEZs may not have always enhanced the reputation for the university or local area. **Overall assessment** Contribution claim somewhat supported. It appears that in some

			instances the UEZs have greatly helped improve the university and local area's image. In other instances it appears to have played a limited role. Therefore, evidence only partially supports the contribution claim.
	Increased capability to support innovation and entrepreneurship of the host HEI	The UEZ programme gives the means (facilities and connections) to enable a host HEI to give more direct and more effective innovation and entrepreneurship support to its stakeholders.	**Evidence to support contribution claim** Some UEZs have established direct relationships with departments, enabling university stakeholders to participate more in entrepreneurship (e.g. providing consultancy support, bid writing assistance, source of employees). In other instances, UEZs have linked-up with existing start-up support at the university to help enhance their offer. More generally, the UEZs have functioned as collaboration spaces which allow businesses and academics to collaborate independently of the management team. **Evidence that refutes contribution claim** The closure of Sensor City meant that it was unable to support innovation and entrepreneurship activity. **Overall assessment** Contribution claim strongly supported. All the UEZs, including Sensor City when open, developed new entrepreneurship support capabilities through the UEZ programme.

	Improved STEM-related skills in the local area	The knowledge exchange and transfer activities fostered by the UEZ, both between the business and HE communities, and between tenants, is sufficient to upskill STEM capabilities amongst local workers and researchers.	**Evidence that supports contribution claim** Survey evidence indicates that in each year of the evaluation period, a subset of UEZ beneficiaries believe that their STEM skills have improved. **Evidence that refutes contribution claim** In each year, the majority of survey respondents have not indicated any improvements in STEM skills. Changes therefore do not appear to have been consistent. Additionally, no strong evidence of attribution of any skills benefits to the programme itself relative to other factors. **Overall assessment** Contribution claim somewhat supported: It is clear that some connected to the UEZ programme have experienced STEM skills developments. However, this group is a minority and with the precise role of the programme in developing skills being unclear, the evidence is not especially strong.
	Increased sharing of good practice between UEZs	By virtue of being part of a common programme, the four UEZs are given opportunities to meet and exchange ideas to a level and extent that would not have been possible were they four centres operating in complete isolation of another.	**Evidence that supports contribution claim** In the period immediately following the interim evaluation, the four UEZs would meet on a quarterly basis to discuss progress to date, and key learning applicable to other centres. **Evidence that refutes contribution claim**

			Over time, these UEZ forums have not continued and interactions between the UEZs appears to be sporadic. Meaningful knowledge sharing appears to have decreased over time. **Overall assessment** Contribution claim somewhat supported: Claim is supported in that some best practice sharing occurred, particularly in 2018-19. However, over time, knowledge sharing has stagnated, suggesting that the Theory of Change is not entirely holding true.
Outcomes to Impacts	Additional GVA and employment growth in the LEP area	The UEZ programme stimulates new economic activity to the extent that it produces enough GVA and employment to offset any disbenefits that the programme may have to the local economy (e.g. increased competition, moving economic activity from one part of the LEP to another)	**Evidence that strengthens contribution claim** Based on the econometric analysis, the UEZ programme is estimated to have enabled the creation of over 7,500 additional jobs, and over £1bn in GVA. **Evidence that refutes contribution claim** Surveyed businesses indicated a relatively low level of attribution of economic growth to the programme. **Overall assessment** Contribution claim somewhat supported. Our econometric data suggests that beneficiary businesses have created a high level of employment and GVA. However, based on surveyed attribution of business benefits to the UEZ, the programme contribution to these benefits are thought to be somewhat limited.

	Well-integrated eco-systems of local universities and business, where UEZ alumni businesses maintain a link to university	The UEZs create sufficiently strong links between the business and academic communities that UEZ alumni businesses are both willing and able to maintain contact with the host university even without the UEZ acting as a conduit for it.	**Evidence that confirms contribution claim** No strong evidence, but some indication that Future Space at least may maintain informal links with alumni. **Evidence that refutes contribution claim** No strong evidence, albeit it does not appear that any UEZs have formal alumni networks to help maintain links with the university. **Overall assessment** Contribution claim neither confirmed nor unconfirmed. There is insufficient evidence to reach a firm conclusion on this contribution claim.
	Increased innovativeness and entrepreneurialism in the LEP areas	The programme helps facilitate knowledge exchange between the UEZ and the local/regional business community. This knowledge transfer also enables innovation and entrepreneurship skills to extend beyond the UEZ to the wider community.	**Evidence that strengthens contribution claim** There is anecdotal evidence which indicates that graduate UEZ tenants have continued to operate in the local area. It is reasonable to assume that when the businesses move, they continue to conduct the innovative and entrepreneurial activity they undertook at the UEZ. The wider LEP ecosystem therefore also sees increased innovativeness and entrepreneurialism. **Evidence that refutes contribution claim** Contribution claim weakened by the fact that the evidence above is anecdotal and only refers to a handful of businesses. There is no consistent data on the precise

			activities undertaken by businesses when they leave the UEZ. **Overall assessment** Contribution claim neither supported nor unsupported. The evidence suggests that graduate businesses may have helped transfer innovative activity to the wider local area. However, there is no conclusive proof for this.
	Increased number and value of businesses in key sectors	The UEZs operational and business plans are successful enough for them to bring in tenants that fall inside their target sectors.	**Evidence that strengthens contribution claim** DHEZ had a clearly defined target sector, digital health. Likewise, Sensor City targeted firms operating in sensors and IoT technologies. Both have successfully recruited businesses operating within the target sectors. **Evidence that refutes contribution claim** The other three UEZs have focused on technology-based businesses more generally in a variety of set sub-sectors each. This weakens the notion that the programme has followed the Theory of Change as policy makers originally envisaged. **Overall assessment** Contribution claim somewhat supported. The Theory of Change assumes there would be clearly defined target sectors in each UEZ. Only two have had any. However, where UEZs have had target sectors, they have successfully recruited businesses falling within them.

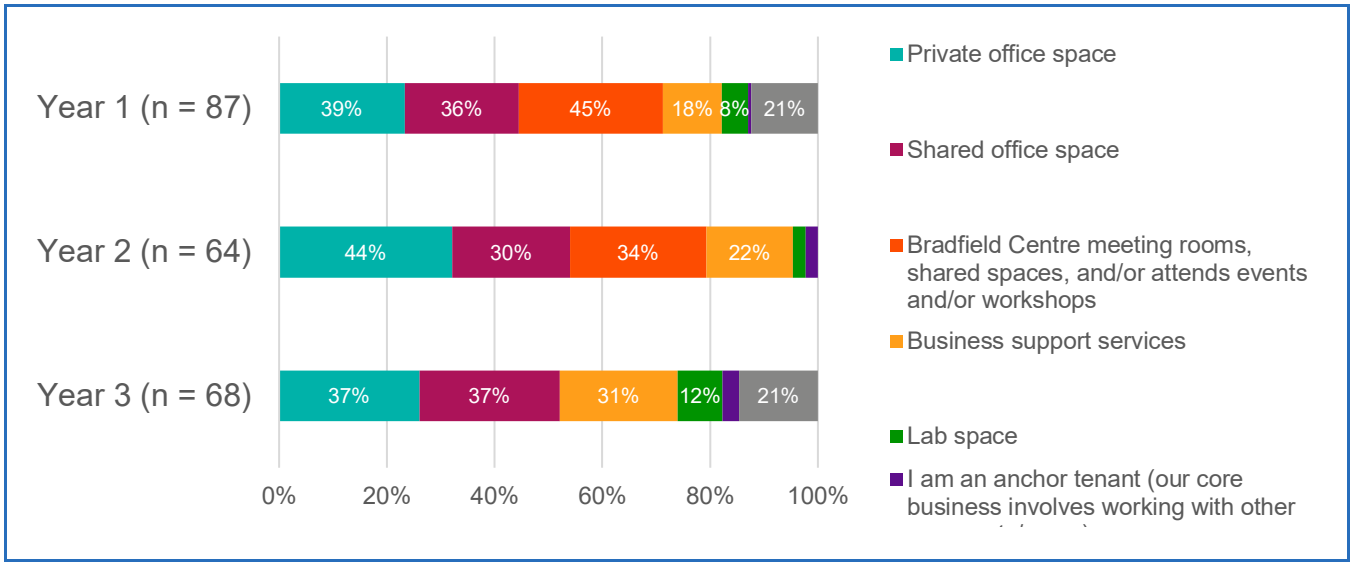
	Social benefits through new services/technologies	The UEZ programme provides support and infrastructure which businesses are able to use to create new products and services that tackle societal issues.	**Evidence that strengthens contribution claim** DHEZ has focused on supporting firms operating in the digital health sector, while the Bradfield Centre has supported firms that develop medical devices. Both will help tackle societal issues. In the case of DHEZ, there are few other alternative hubs for innovation in the local digital health space, according to consultees. **Evidence that refutes contribution claim** None. **Overall assessment** Contribution claim strongly supported. The work of DHEZ alone confirms the claim but it is clear that other UEZs have also supported the development of solutions that can tackle societal issues.

Source: Technopolis

Survey analysis

Breakdown of responses by UEZ by year				
UEZ	**2021**	**2022**	**2023**	**Total**
Bradfield Centre	64	48	42	154
DHEZ	6	4	3	13
Future Space	8	7	20	35
Ingenuity Centre	6	5	3	14
Sensor City	3	0	0	3
Total	87	64	68	219

Figure 48: What type of support services have you accessed in the past 12 months from UEZ? (n=219)

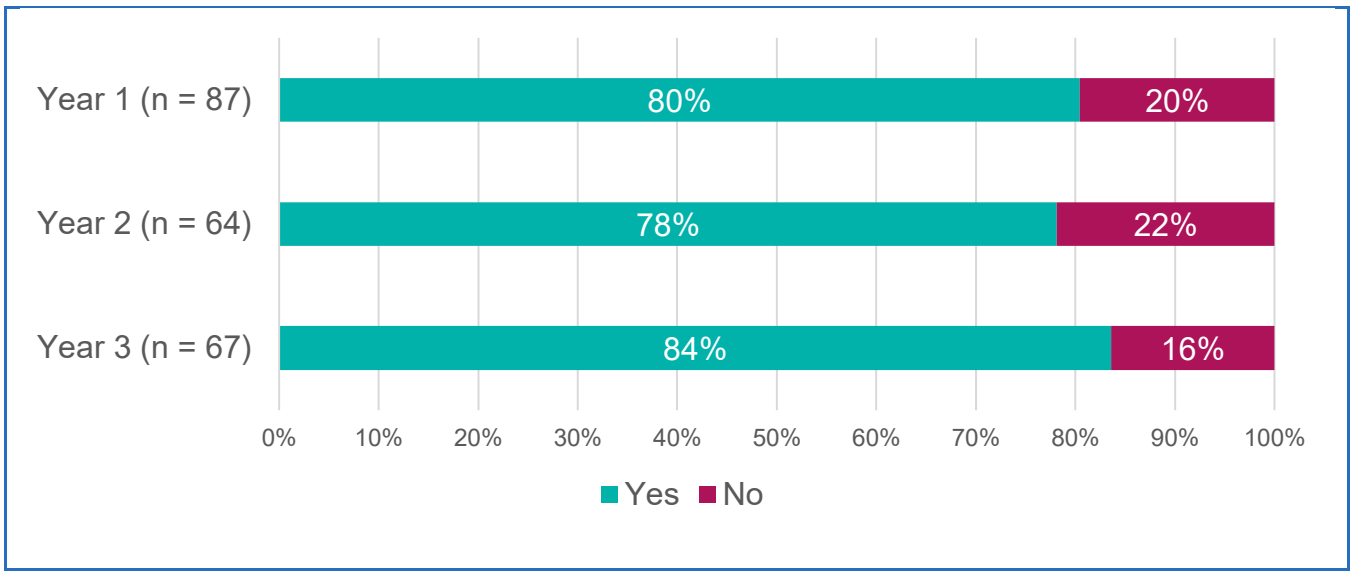


Source: Technopolis, based on data from UEZ surveys 2021-23.

Alt text for Figure 48:

3 stacked bar charts showing types of support services accessed. From left to right, the sections represent: 'Private office space', 'Shared office space', 'Bradfield Centre meeting rooms, shared spaces and/or attends events and/or workshops', 'Business support services', 'Lab space', 'I am an anchor tenant' and 'Other'. The stacks show a fairly consistent spread with 'Private office space' and 'Shared office space' being the most and second most common use types between the three years.

Figure 49: Has your business completed a full financial year? (n = 218)

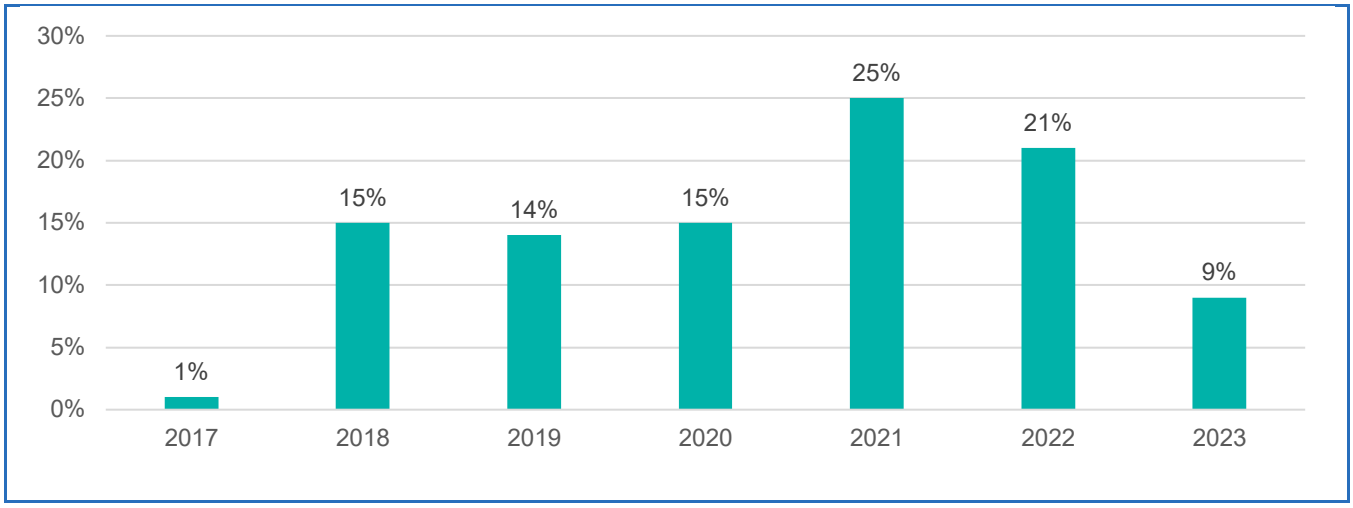


Source: Technopolis, based on data from UEZ surveys 2021-23.

Alt text for Figure 49:

3 stacked bar charts showing whether businesses completed a full financial year. From left to right, the sections represent: 'Yes' and 'No'. A vast majority of responding businesses each year had completed a financial year.

Figure 50: When did your business begin to engage with UEZ? (n = 216)

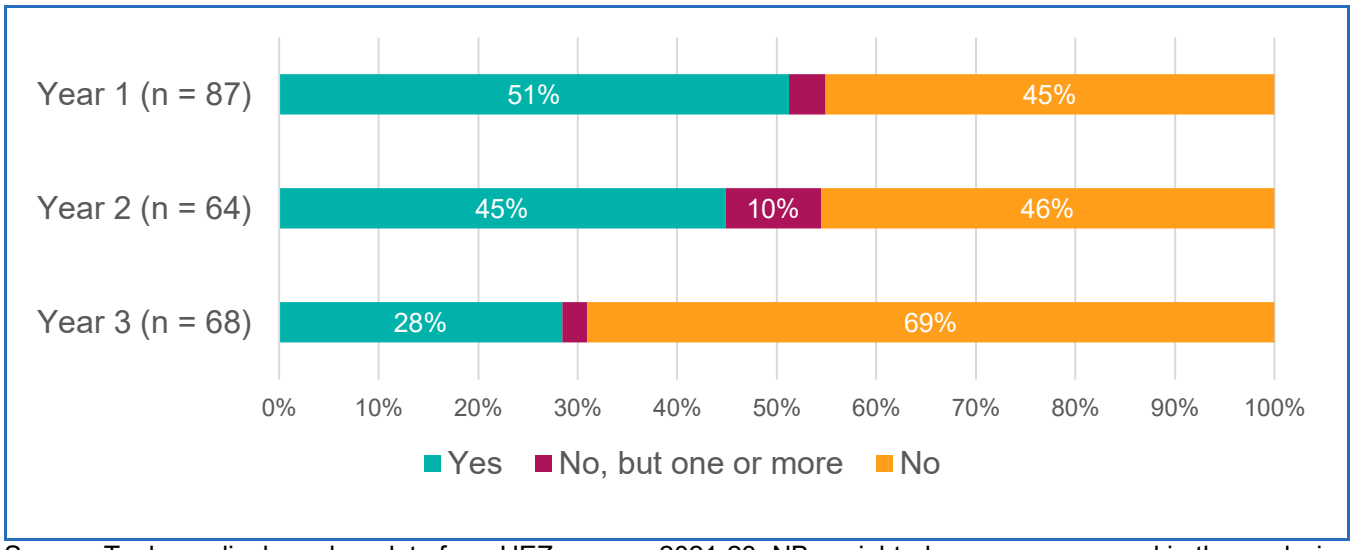


Source: Technopolis, based on data from UEZ surveys 2021-23.

Alt text for Figure 50:

Bar chart showing when businesses started to engage with UEZ as a percentage in the years 2017-2023. During this window, the greatest share of new joiners was reported in 2021 with 25% of all respondents indicating the year as the year of joining.

Figure 51: In the past five years have you or any of your colleagues/staff graduated from [University]? (n = 219)

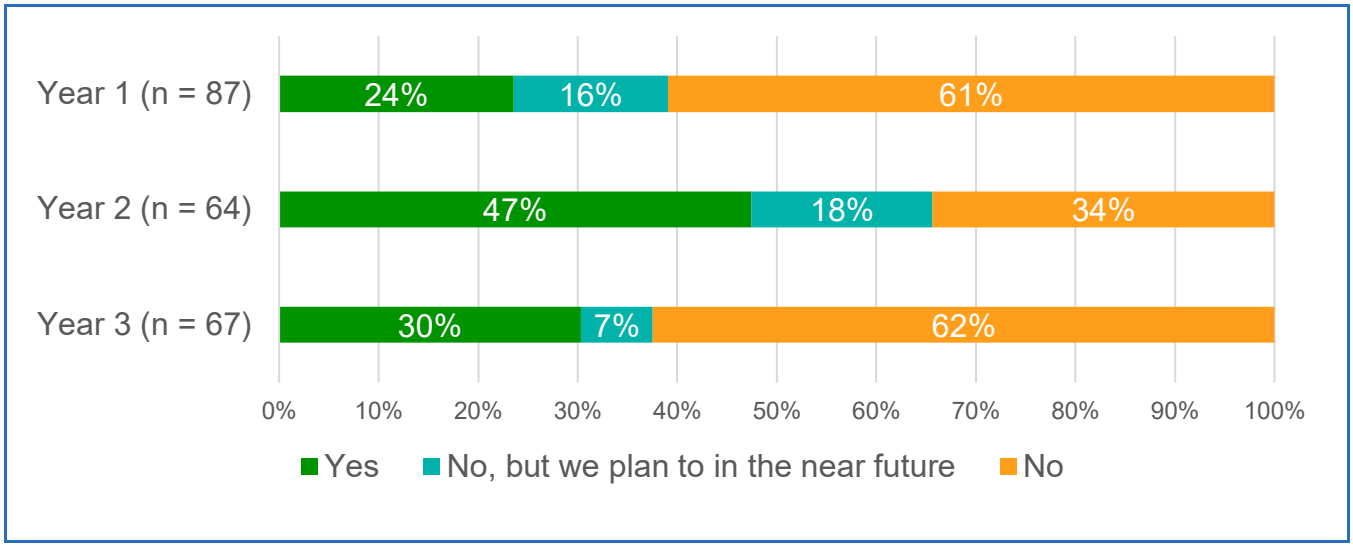


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 64, weight: 1.36; Bradfield Centre Year 2 n = 48, weight: 1.33; Bradfield Centre Year 3 n = 42, weight: 1.61. DHEZ Year 1 n=6, weight: 14.5; DHEZ Year 2 n=4, weight: 16; DHEZ Year 3 n=3 weight: 22.67. Future Space Year 1 n=8, weight: 10.88; Future Space Year 2 n=7, weight: 9.14; Future Space Year 3 n=20, weight: 3.4. Ingenuity Centre Year 1 n=6, weight: 14.5; Ingenuity Centre Year 2 n=5, weight: 12.8; Ingenuity Centre Year 3 n=3, weight: 22.67. Sensor City Year 1 n=3, weight: 29.

Alt text for Figure 51:

Three stacked bar charts showing whether the respondent or any of their colleagues/staff graduation from university. From left to right, the sections represent: 'Yes', 'No, but one or more' and 'No'. The graphs show that the share of businesses without staff from the host HEI had increased each consecutive year.

Figure 52: Has your business worked with any other businesses that are using UEZ services/facilities?



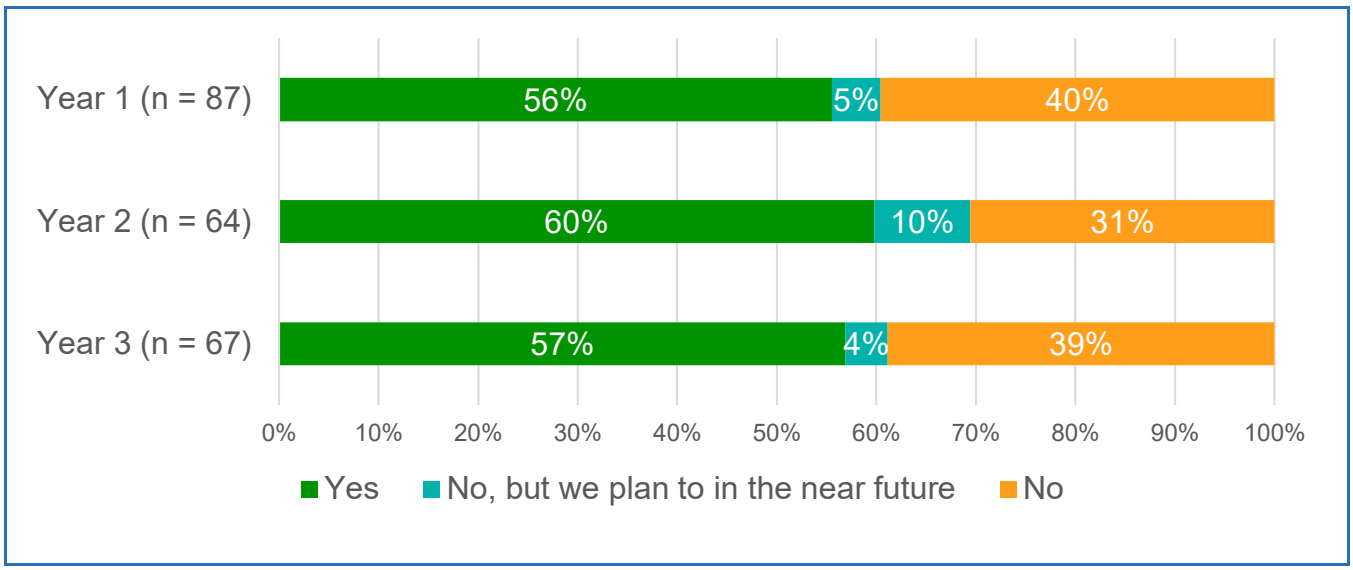
Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 64, weight: 1.359375; Bradfield Centre Year 2 n = 48, weight: 1.333; Bradfield Centre Year 3 n = 42, weight:

1.595238095. DHEZ Year 1 n=6, weight: 14.5; DHEZ Year 2 n=4, weight: 16; DHEZ Year 3 n=2, weight: 33.5. Future Space Year 1 n=8, weight: 10.875; Future Space Year 2 n=7, weight: 9.142857143; Future Space Year 3 n=20, weight: 3.35. Ingenuity Centre Year 1 n=6, weight: 14.5; Ingenuity Centre Year 2 n=5, weight: 12.8; Ingenuity Centre Year 3 n=3, weight: 22.3333333. Sensor City Year 1 n=3, weight: 29.

Alt text for Figure 52:

Three stacked bar charts showing whether the respondent's business has worked with any other businesses that are using UEZ services/facilities. From left to right, the sections represent: 'Yes', 'No, but we plan to in the near future' and 'No'. The graph shows that the levels of business engagement (actual and planned) within UEZ was highest in Year 2.

Figure 53: Has your business worked with any (non-university) public sector bodies?

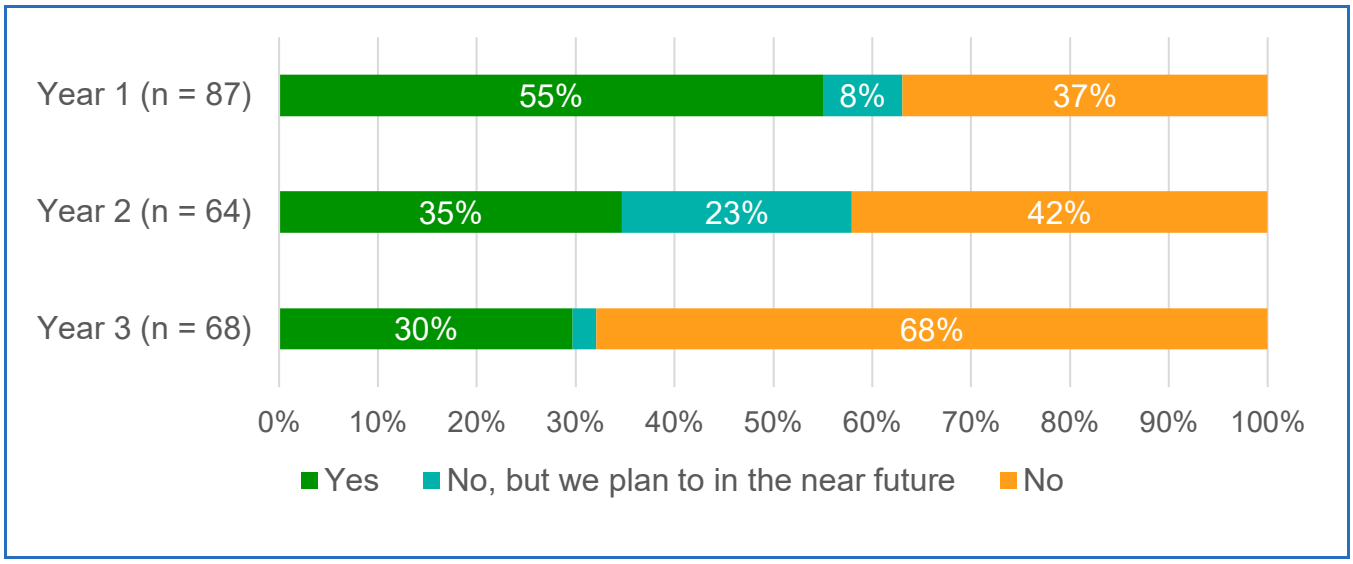


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 64, weight: 1.359375; Bradfield Centre Year 2 n = 48, weight: 1.333; Bradfield Centre Year 3 n = 42, weight: 1.619047619. DHEZ Year 1 n=6, weight: 14.5; DHEZ Year 2 n=4, weight: 16; DHEZ Year 3 n=3 weight: 22.66666667. Future Space Year 1 n=8, weight: 10.875; Future Space Year 2 n=7, weight: 9.142857143; Future Space Year 3 n=20, weight: 3.4. Ingenuity Centre Year 1 n=6, weight: 14.5; Ingenuity Centre Year 2 n=5, weight: 12.8; Ingenuity Centre Year 3 n=3, weight: 22.66666667. Sensor City Year 1 n=3, weight: 29.

Alt text for Figure 53:

Three stacked bar charts showing whether the respondent's business has worked with any non-university public bodies. From left to right, the sections represent: 'Yes', 'No, but we plan to in the near future' and 'No'. The graph shows that each year, more than half of respondents had engaged with public sector bodies.

Figure 54: Has your business made use of any university research facilities or other university research in the past 12 months?

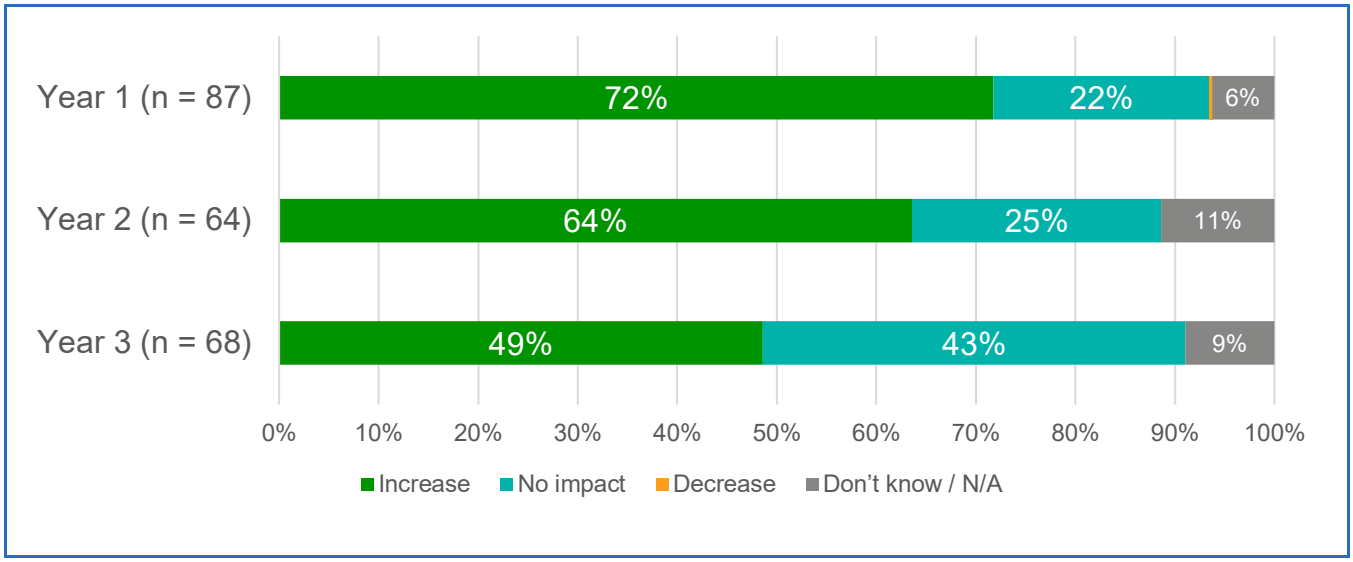


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 64, weight: 1.359375; Bradfield Centre Year 2 n = 48, weight: 1.333; Bradfield Centre Year 3 n = 42, weight: 1.619047619. DHEZ Year 1 n=6, weight: 14.5; DHEZ Year 2 n=4, weight: 16; DHEZ Year 3 n=2, weight: 22.66666667. Future Space Year 1 n=8, weight: 10.875; Future Space Year 2 n=7, weight: 9.142857143; Future Space Year 3 n=20, weight: 3.35. Ingenuity Centre Year 1 n=6, weight: 14.5; Ingenuity Centre Year 2 n=5, weight: 12.8; Ingenuity Centre Year 3 n=3, weight: 22.66666667. Sensor City Year 1 n=3, weight: 29.

Alt text for Figure 54:

Three stacked bar charts showing whether the respondent's business has made use of any university research facilities or other university research. From left to right, the sections represent: 'Yes', 'No, but we plan to in the near future' and 'No'. The graph shows that business usage of research or facilities was highest in Year 1 and declined since.

Figure 55: Has being located within [Site] impacted on the following? Your engagement with the university



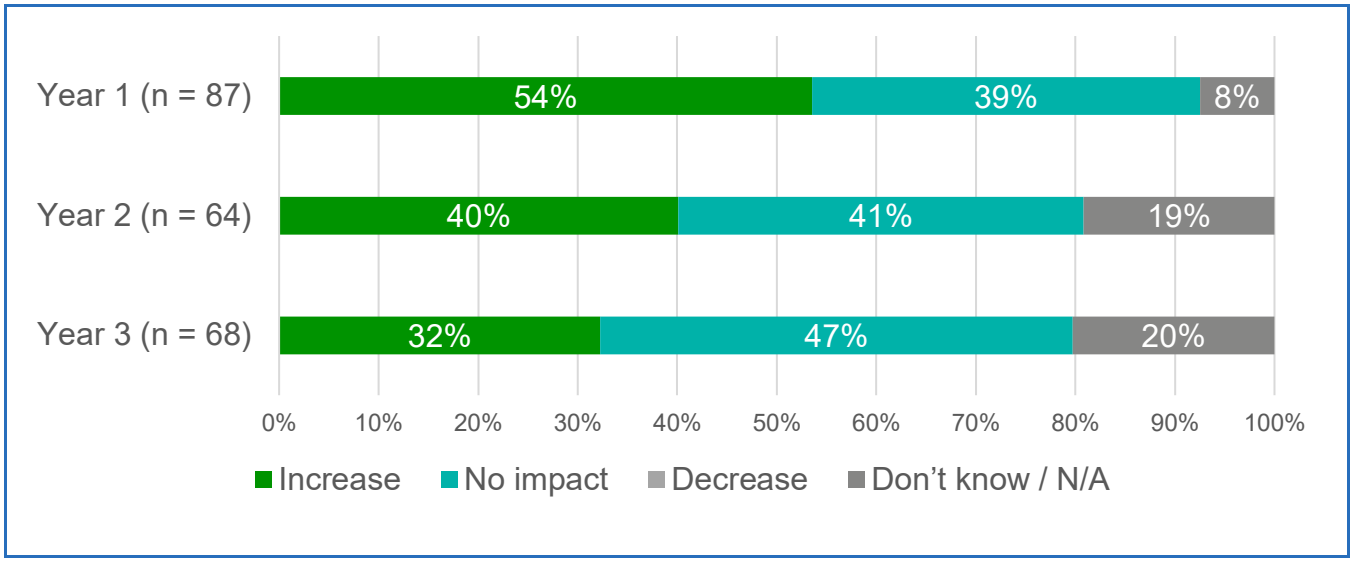
Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 64, weight: 1.359375; Bradfield Centre Year 2 n = 48, weight: 1.333; Bradfield Centre Year 3 n = 42, weight: 1.619047619. DHEZ Year 1 n=6, weight: 14.5; DHEZ Year 2 n=4, weight: 16; DHEZ Year 3 n=3 weight:

22.66666667. Future Space Year 1 n=8, weight: 10.875; Future Space Year 2 n=7, weight: 9.142857143; Future Space Year 3 n=20, weight: 3.4. Ingenuity Centre Year 1 n=6, weight: 14.5; Ingenuity Centre Year 2 n=5, weight: 12.8; Ingenuity Centre Year 3 n=3, weight: 22.66666667. Sensor City Year 1 n=3, weight: 29.

Alt text for Figure 55:

Three stacked bar charts showing whether being located within the UEZ impacted engagement with the university. From left to right, the sections represent: 'Significant increase', 'Slight increase', 'No impact', 'Slight decrease', 'N/A' and 'Don't know'. Graph shows that the share of those who reported increase was highest in Year 1 and declined since. In Year 3 less than half reported increased engagement.

Figure 56: Has being located within [Site] impacted on the following? Your use of university research and facilities (n = 219)

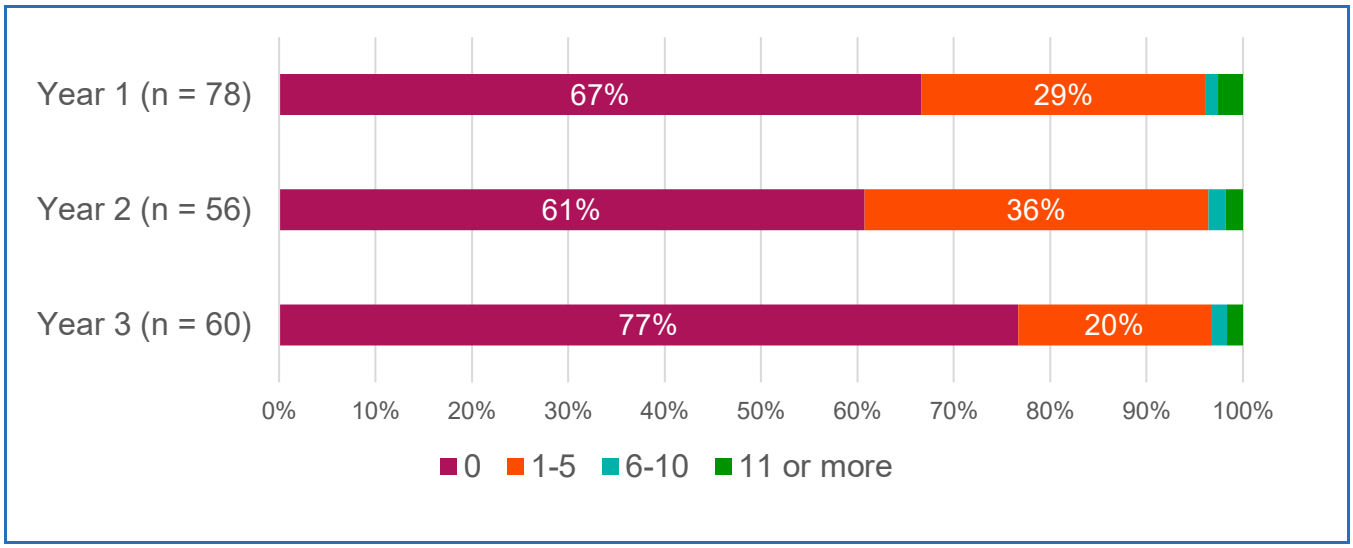


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 64, weight: 1.36; Bradfield Centre Year 2 n = 48, weight: 1.33; Bradfield Centre Year 3 n = 42, weight: 1.62. DHEZ Year 1 n=6, weight: 14.5; DHEZ Year 2 n=4, weight: 16; DHEZ Year 3 n=3 weight: 22.66666667. Future Space Year 1 n=8, weight: 10.875; Future Space Year 2 n=7, weight: 9.142857143; Future Space Year 3 n=20, weight: 3.4. Ingenuity Centre Year 1 n=6, weight: 14.5; Ingenuity Centre Year 2 n=5, weight: 12.8; Ingenuity Centre Year 3 n=3, weight: 22.66666667. Sensor City Year 1 n=3, weight: 29.

Alt text for Figure 56:

Three stacked bar charts showing whether being located within a site has impacted their use of university research and facilities. From left to right, the sections represent: 'Increase', 'No impact', 'Decrease', 'Don't know / N/A'. The graph shows that the perceived impact on use of research and facilities was highest in Year 1 and decreased since.

Figure 57: How many formal research and knowledge exchange projects involving researchers/academics has your business undertaken in the past 12 months? (n = 135)

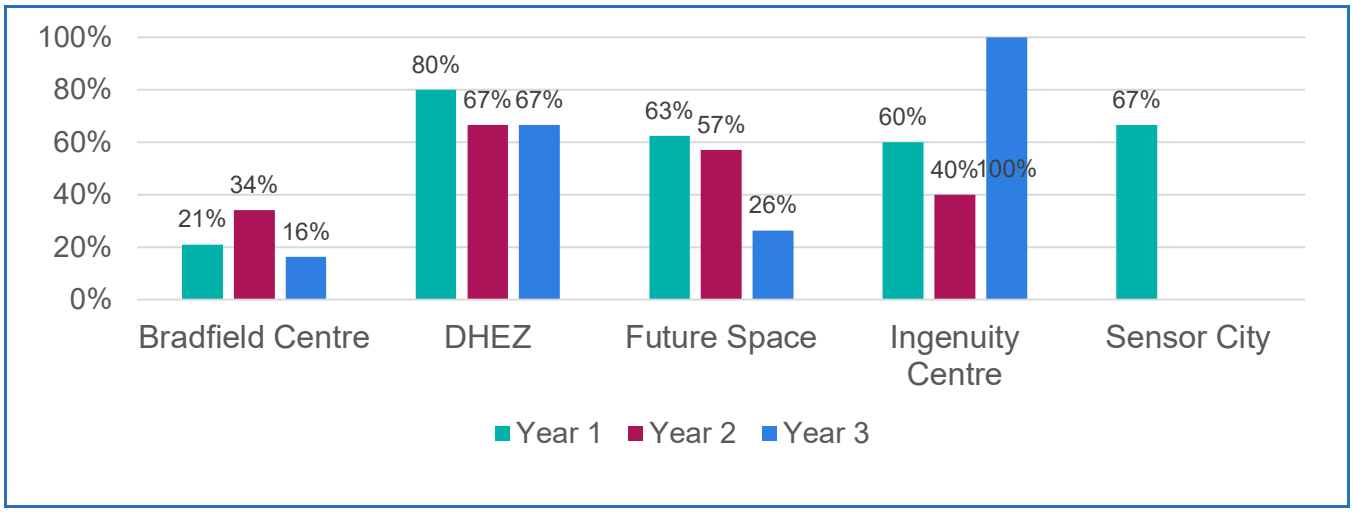


Source: Technopolis, based on data from UEZ surveys 2021-23.

Alt text for Figure 57:

Three stacked bar charts showing how many formal research and knowledge exchange projects involving researchers/academics businesses have undertaken. From left to right, the sections represent: '0', '1-5', '6-10' and '11+'. The graph shows that the share of respondents who reported one or more formal activities decreased to Year 3.

Figure 58: How many formal research and knowledge exchange projects involving researchers/academics has your business undertaken in the past 12 months? (n = 135)



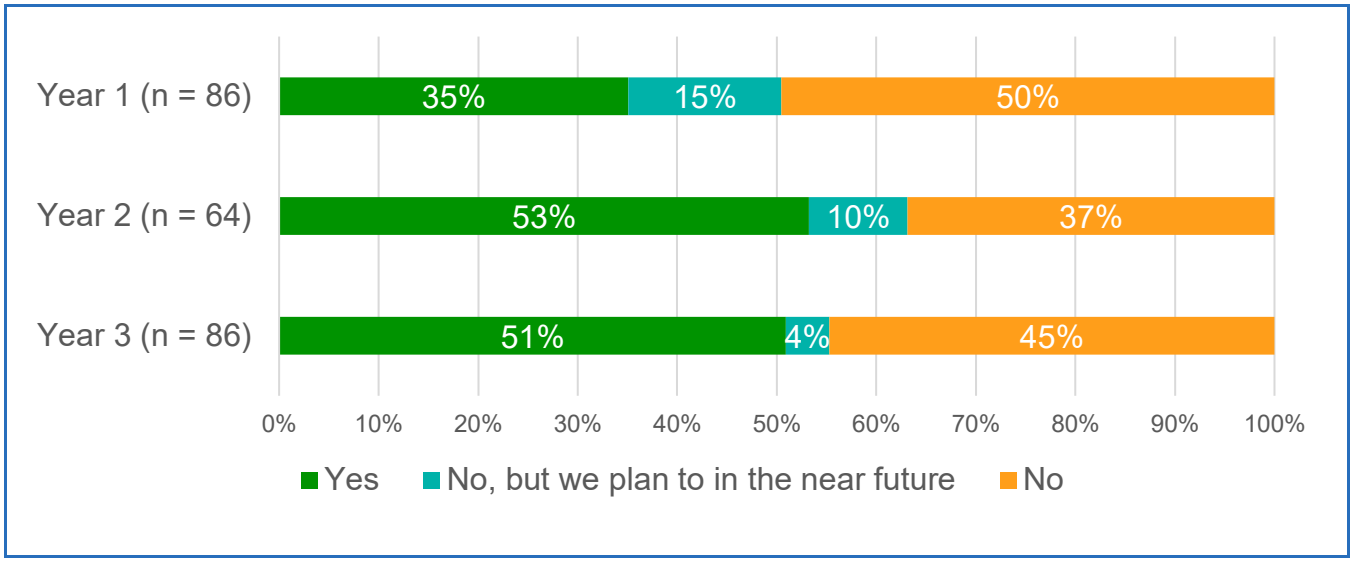
Source: Technopolis, based on data from UEZ surveys 2021-23. NB: this graph is specifically for the visualisation of the share of respondents by UEZ and year who reported formal projects already undertaken

Alt text for Figure 58:

Triple bar chart showing how many formal research and knowledge exchange projects involving researchers/academics businesses have been undertaken by UEZ as a percentage. From left to right, the bars represent: 'Year 1', 'Year 2' and 'Year 3'. From left

to right, the sections represent: 'Bradfield Centre', 'DHEZ', 'Future Space', 'Ingenuity Centre' and 'Sensor City'. The level of formal projects was consistently high at DHEZ.

Figure 59: Has your business engaged in informal research and knowledge exchange projects involving researchers/academics in the past 12 months? (n=153)

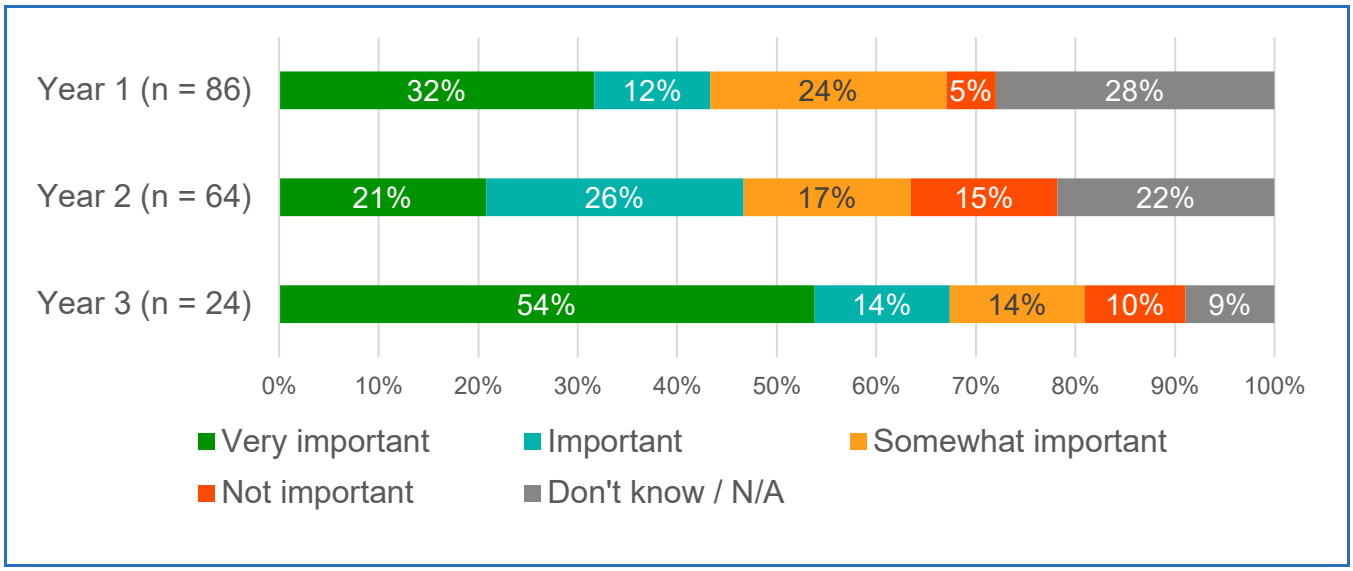


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 64, weight: 1.343750; Bradfield Centre Year 2 n = 48, weight: 1.333; Bradfield Centre Year 3 n = 41, weight: 1.634146341. DHEZ Year 1 n=5, weight: 17.2; DHEZ Year 2 n=4, weight: 16; DHEZ Year 3 n=3 weight: 22.33333333. Future Space Year 1 n=8, weight: 10.750; Future Space Year 2 n=7, weight: 9.142857143; Future Space Year 3 n=20, weight: 3.35. Ingenuity Centre Year 1 n=6, weight: 14.3; Ingenuity Centre Year 2 n=5, weight: 12.8; Ingenuity Centre Year 3 n=3, weight: 22.33333333. Sensor City Year 1 n=3, weight: 29.

Alt text for Figure 59:

Three stacked bar charts showing whether the respondent's business has engaged in informal research and knowledge exchange projects involving researchers/academics. From left to right, the sections represent: 'Yes', 'No, but we plan to in the near future' and 'No'. The graph shows that less than half of respondents engaged in informal projects in Year 1, but that the share increased to slightly over half for Years 2 and 3.

Figure 60: How important are these research and knowledge exchange projects undertaken in the past 12 months? Formal research and knowledge exchange projects (n = 125)

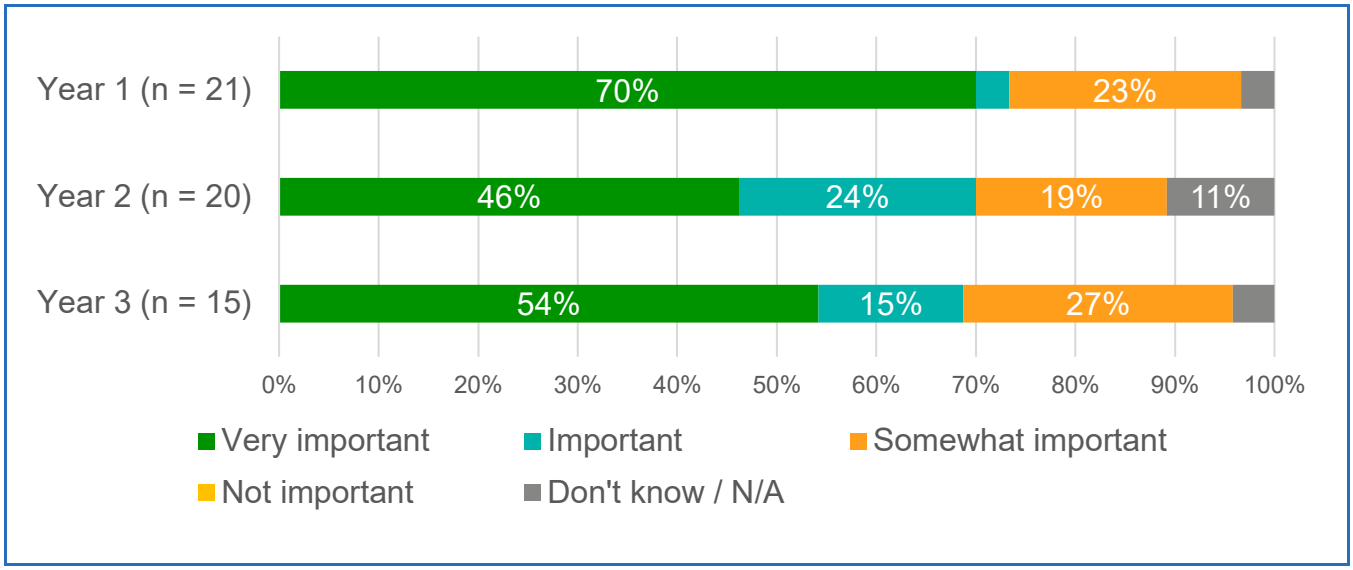


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 63, weight: 1.37; Bradfield Centre Year 2 n = 48, weight: 1.33; Bradfield Centre Year 3 n = 14, weight: 1.71. DHEZ Year 1 n=6, weight: 14.3; DHEZ Year 2 n=4, weight: 16; DHEZ Year 3 n=2 weight: 12. Future Space Year 1 n=8, weight: 10.75; Future Space Year 2 n=7, weight: 9.14; Future Space Year 3 n=5, weight: 4.8. Ingenuity Centre Year 1 n=6, weight: 14.33; Ingenuity Centre Year 2 n=5, weight: 12.8; Ingenuity Centre Year 3 n=3, weight: 8. Sensor City Year 1 n=3, weight: 28.67.

Alt text for Figure 60:

Three stacked bar charts showing the importance of formal research and knowledge exchange projects. From left to right, the sections represent: 'Very important', 'Important', 'Somewhat important', 'Not important' and 'Don't know / N/A'. The graph shows that the perceived importance of formal projects has increased to Year 3.

Figure 61: How important are these research and knowledge exchange projects undertaken in the past 12 months? Informal research and knowledge exchange projects (n = 56)



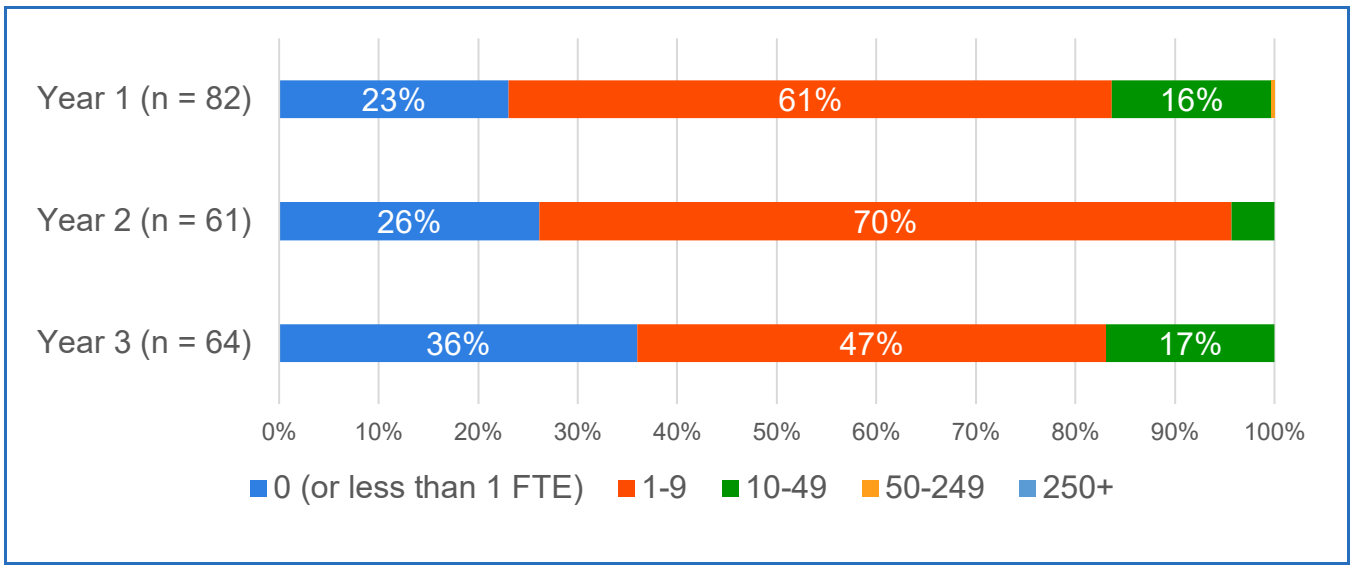
Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 12, weight: 1.75; Bradfield Centre Year 2 n = 10, weight: 2; Bradfield Centre Year 3 n = 6, weight: 2.5. DHEZ Year 1

n=2, weight: 10.5; DHEZ Year 2 n=3, weight: 6.67; DHEZ Year 3 n=3 weight: 5. Future Space Year 1 n=4, weight: 5.25; Future Space Year 2 n=4, weight: 5; Future Space Year 3 n=4, weight: 3.75. Ingenuity Centre Year 1 n=2, weight: 10.5; Ingenuity Centre Year 2 n=3, weight: 6.67; Ingenuity Centre Year 3 n=2, weight: 7.5. Sensor City Year 1 n=1, weight: 21.

Alt text for Figure 61:

3 stacked bar charts showing the importance of informal research and knowledge exchange projects. From left to right, the sections represent: 'Very important', 'Important', 'Somewhat important', 'Not important' and 'Don't know / N/A'. The graph shows that the perceived importance of informal projects was fairly high overall, but highest in Year 1.

Figure 62: How many FTE people does your business currently employ on-site, in [Site]?

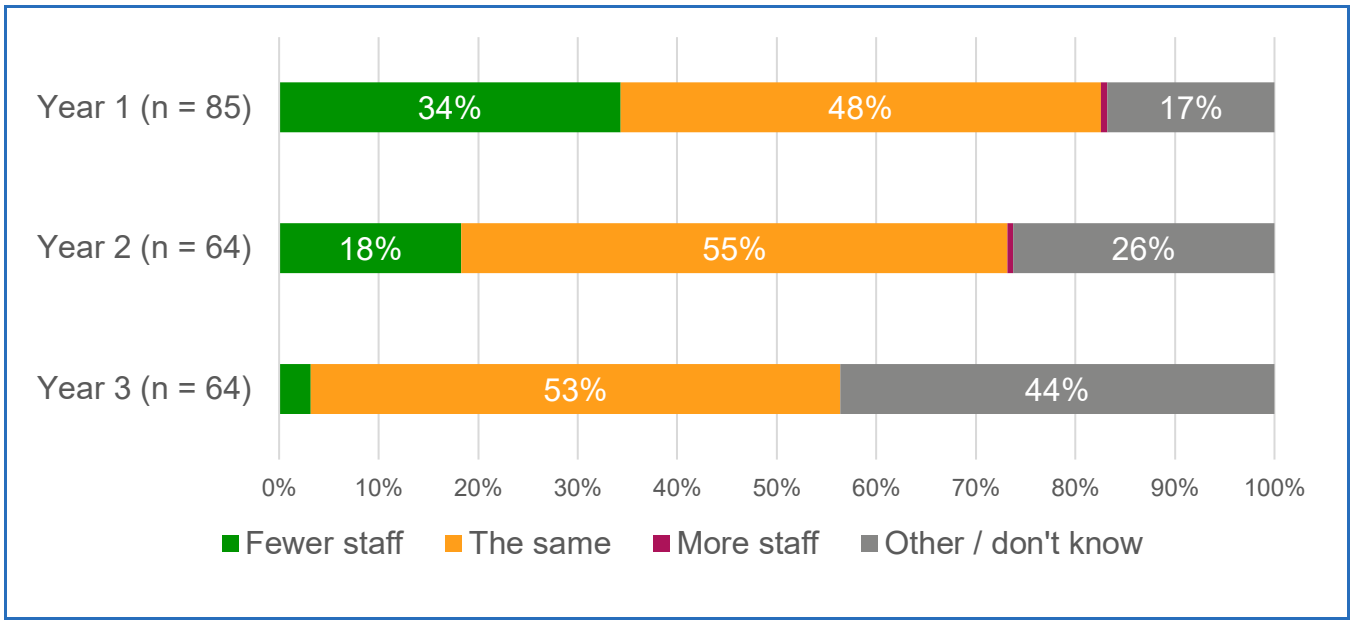


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 61, weight: 1.34; Bradfield Centre Year 2 n = 47, weight: 1.3; Bradfield Centre Year 3 n = 40, weight: 1.6. DHEZ Year 1 n=5, weight: 16.4; DHEZ Year 2 n=3, weight: 20.33; DHEZ Year 3 n=2 weight: 32. Future Space Year 1 n=8, weight: 10.25; Future Space Year 2 n=6, weight: 10.2; Future Space Year 3 n=20, weight: 3.2. Ingenuity Centre Year 1 n=6, weight: 13.7; Ingenuity Centre Year 2 n=5, weight: 16.4; Ingenuity Centre Year 3 n=2, weight: 41. Sensor City Year 1 n=2, weight: 41.

Alt text for Figure 62:

Three stacked bar charts showing the number of FTE people businesses currently employ on-site in the UEZ. From left to right, the sections represent: '0 (or less than 1 FTE)', 1-9', '10-49', '50-249' and '250+'. The graph shows that employing one to nine FTEs on-site was the most common response every year.

Figure 63: How different would your current FTE employment have been if you had not been engaged with/benefitted from [Site]? (n = 213)

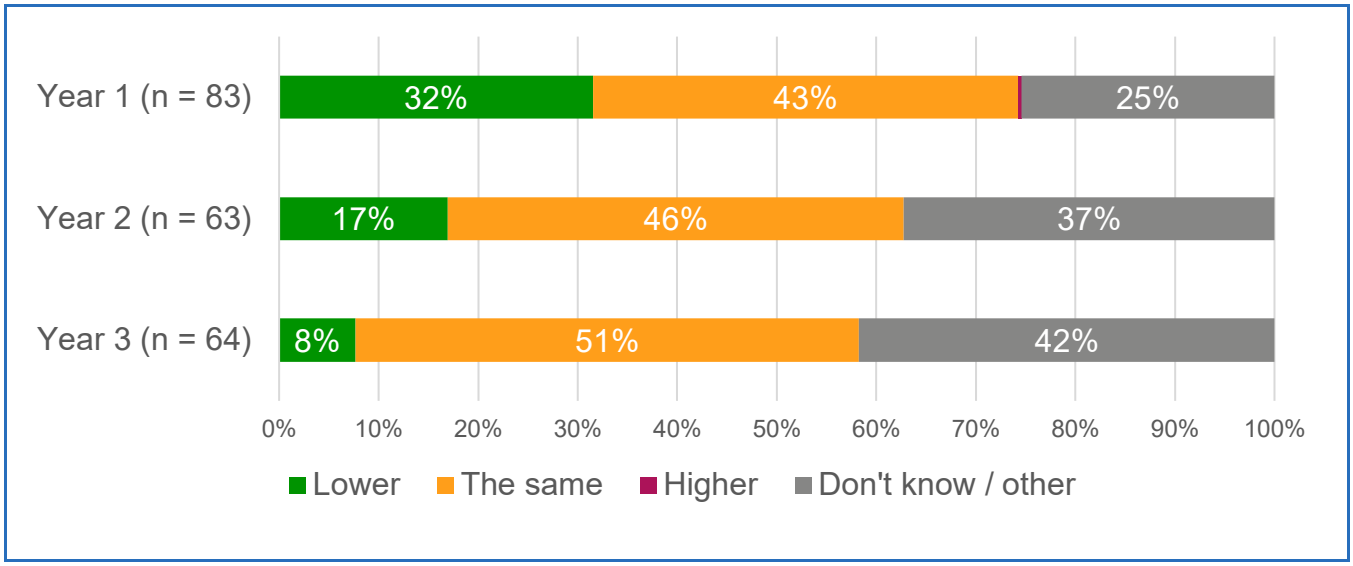


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 63, weight: 1.35; Bradfield Centre Year 2 n = 48, weight: 1.33; Bradfield Centre Year 3 n = 42, weight: 1.5. DHEZ Year 1 n=6, weight: 14.2; DHEZ Year 2 n=4, weight: 16; DHEZ Year 3 n=3 weight: 21.33. Future Space Year 1 n=7, weight: 12.14; Future Space Year 2 n=7, weight: 9.14; Future Space Year 3 n=16, weight: 4. Ingenuity Centre Year 1 n=6, weight: 14.2; Ingenuity Centre Year 2 n=5, weight: 12.8; Ingenuity Centre Year 3 n=3, weight: 21.33. Sensor City Year 1 n=3, weight: 28.

Alt text for Figure 63:

Three stacked bar charts showing how different current FTE employment would have been. From left to right, the sections represent: ‘Fewer staff’, ‘The same’, ‘More staff’ and ‘Other / don’t know’. The graph shows that the perception of a positive impact of the UEZ on employment has decreased from Year 1 to Year 3 while the share of respondents who were not sure increased over the same time. A majority of respondents each year, however, perceived no change.

Figure 64: How different would your sales have been if you had not been engaged with/benefitted from [Site]? (n = 210)

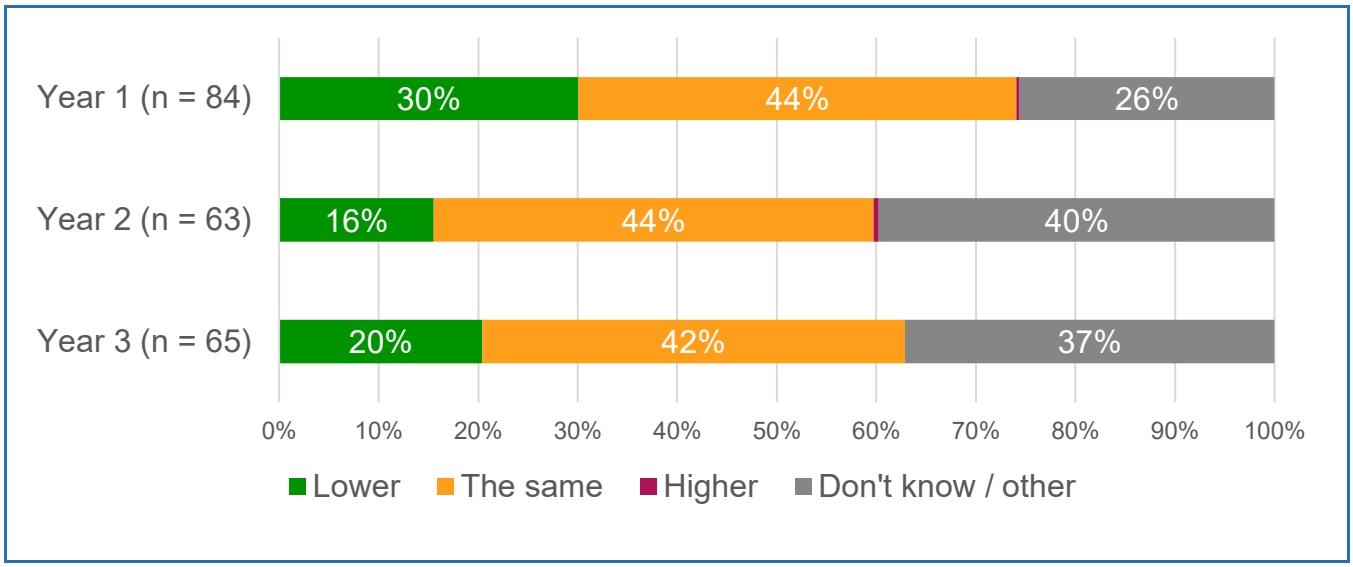


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 63, weight: 1.32; Bradfield Centre Year 2 n = 47, weight: 1.34; Bradfield Centre Year 3 n = 42, weight: 1.52. DHEZ Year 1 n=5, weight: 16.6; DHEZ Year 2 n=4, weight: 15.75; DHEZ Year 3 n=3 weight: 21.33. Future Space Year 1 n=6, weight: 13.83; Future Space Year 2 n=7, weight: 9; Future Space Year 3 n=16, weight: 4 Ingenuity Centre Year 1 n=6, weight: 13.83; Ingenuity Centre Year 2 n=5, weight: 12.6; Ingenuity Centre Year 3 n=3, weight: 21.33. Sensor City Year 1 n=3, weight: 28.

Alt text for Figure 64:

3 stacked bar charts showing differences in sales. From left to right, the sections represent: 'Lower', 'The same', 'Higher', 'Don't know / other'. The graph shows that the perception of a positive impact of the UEZ on sales has decreased from Year 1 to Year 3 while the share of respondents who were not sure increased over the same time. A majority of respondents each year, however, perceived no change.

Figure 65: How different would your R&D investment have been if you had not been engaged with/benefitted from [Site]? (n = 212)

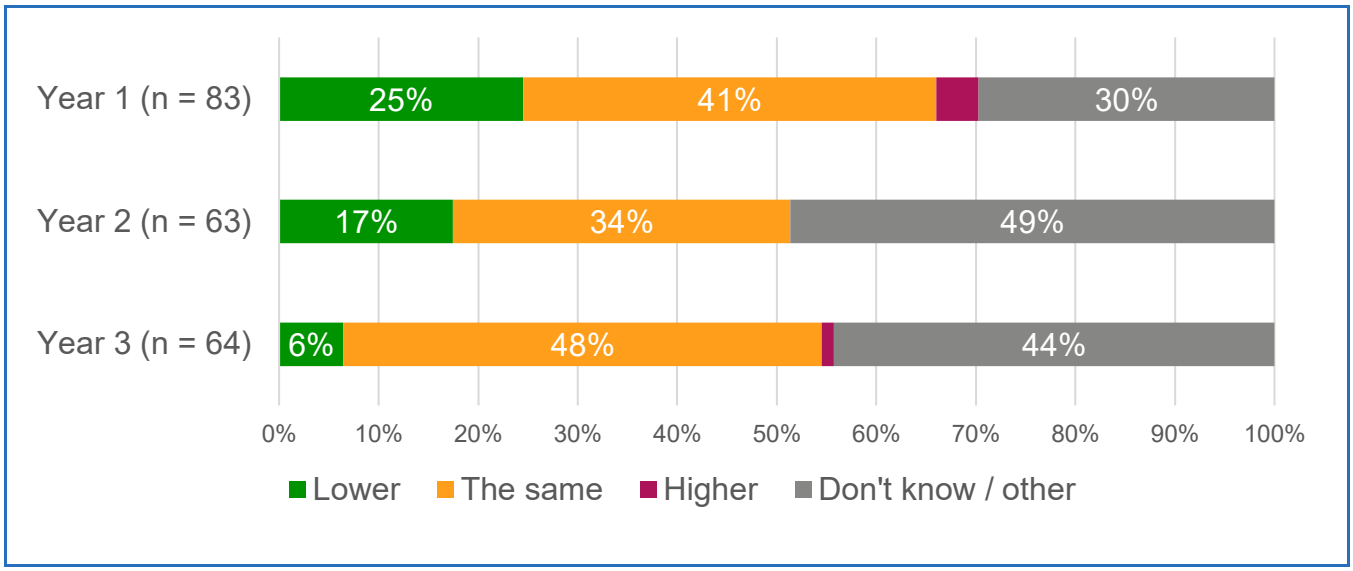


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 63, weight: 1.33; Bradfield Centre Year 2 n = 47, weight: 1.34; Bradfield Centre Year 3 n = 42, weight: 1.55. DHEZ Year 1 n=5, weight: 16.8; DHEZ Year 2 n=4, weight: 15.75; DHEZ Year 3 n=3 weight: 21.67. Future Space Year 1 n=7, weight: 12; Future Space Year 2 n=7, weight: 9; Future Space Year 3 n=17, weight: 3.82. Ingenuity Centre Year 1 n=6, weight: 14; Ingenuity Centre Year 2 n=5, weight: 12.6; Ingenuity Centre Year 3 n=3, weight: 21.67. Sensor City Year 1 n=3, weight: 28.

Alt text for Figure 65:

Three stacked bar charts showing differences in R&D investment. From left to right, the sections represent: 'Lower', 'The same', 'Higher' and 'Don't know / other'. The graph shows that most respondents believing that R&D investment would have been lower if not for the UEZ was highest in Year 1. The share of those who anticipated R&D investment to have remained the same was the highest every year.

Figure 66: How different would your profit before tax have been if you had not been engaged with/benefitted from [Site]? (n = 210)

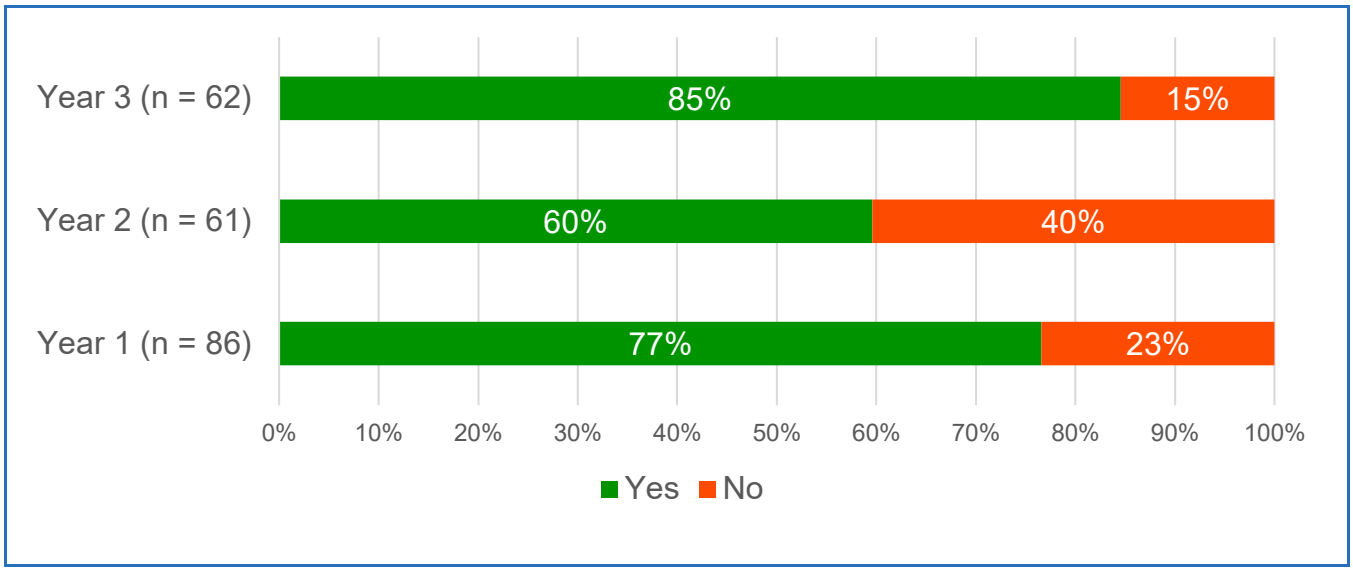


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 63, weight: 1.32; Bradfield Centre Year 2 n = 47, weight: 1.34; Bradfield Centre Year 3 n = 42, weight: 1.52. DHEZ Year 1 n=5, weight: 16.6; DHEZ Year 2 n=4, weight: 15.75; DHEZ Year 3 n=3 weight: 21.33. Future Space Year 1 n=6, weight: 13.83; Future Space Year 2 n=7, weight: 9; Future Space Year 3 n=16, weight: 4. Ingenuity Centre Year 1 n=6, weight: 13.83; Ingenuity Centre Year 2 n=5, weight: 12.6; Ingenuity Centre Year 3 n=3, weight: 21.33. Sensor City Year 1 n=3, weight: 27.67.

Alt text for Figure 66:

Three stacked bar charts showing differences in profit before tax. From left to right, the sections represent: ‘Lower’, ‘The same’, ‘Higher’ and ‘Don’t know / other’. The graph shows that the share of those who felt the UEZ to contribute a higher profit decreased from Year 1 to Year 3. The most common response in Year 1 and 3 was no impact while in Year 2, respondents most commonly indicated that they were not sure.

Figure 67: "In the past 12 months, has your business introduced any of the following: • a new or significantly improved product (goods or services) or process • a new or significantly improved form of organisation, business structure or practice • a new or significantly improved marketing concept or strategy" (n = 209)

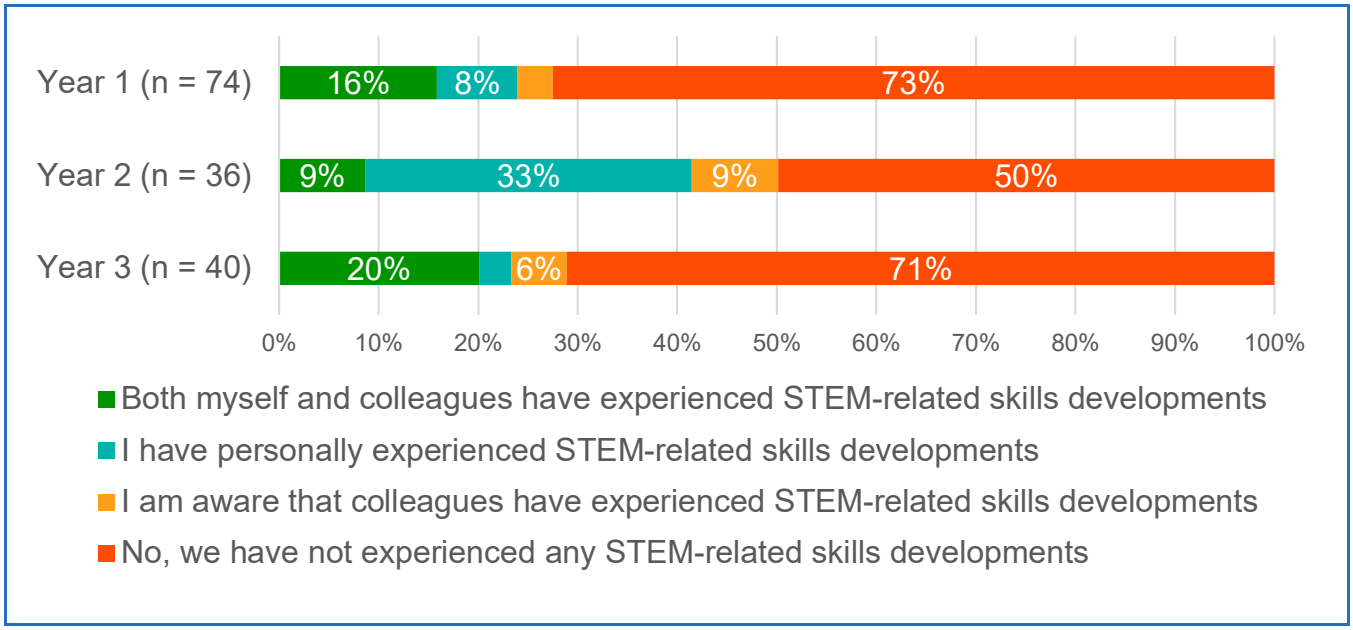


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 63, weight: 1.37; Bradfield Centre Year 2 n = 45, weight: 1.36; Bradfield Centre Year 3 n = 41, weight: 1.51. DHEZ Year 1 n=6, weight: 14.33; DHEZ Year 2 n=4, weight: 15.25; DHEZ Year 3 n=2 weight: 31. Future Space Year 1 n=8, weight: 10.75; Future Space Year 2 n=7, weight: 8.71; Future Space Year 3 n=16, weight: 3.88. Ingenuity Centre Year 1 n=6, weight: 14.33; Ingenuity Centre Year 2 n=5, weight: 12.2; Ingenuity Centre Year 3 n=3, weight: 20.67. Sensor City Year 1 n=3, weight: 28.67.

Alt text for Figure 67:

Three stacked bar charts showing whether businesses have introduced any of the three options. From left to right, the sections represent: 'Yes' and 'No'. The graph shows that a majority of respondents each year indicated having introduced a new or improved product, process, form of organisation or marketing strategy.

Figure 68: Have you experienced any STEM related skills developments as a result of your engagement with [Site] including via any specific projects or schemes, either personally or among your colleagues / workforce?

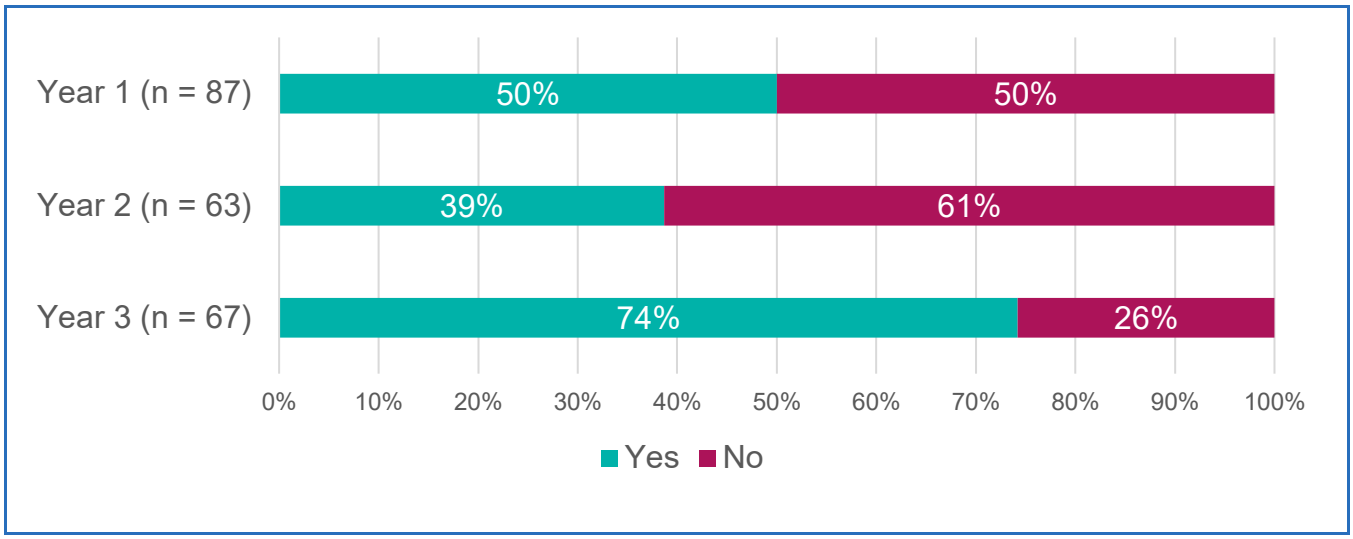


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 64, weight: 1.36; Bradfield Centre Year 2 n = 48, weight: 1.33; Bradfield Centre Year 3 n = 42, weight: 1.53. DHEZ Year 1 n=6, weight: 14.5; DHEZ Year 2 n=4, weight: 16; DHEZ Year 3 n=3 weight: 21.67. Future Space Year 1 n=8, weight: 10.88; Future Space Year 2 n=7, weight: 9.14; Future Space Year 3 n=17, weight: 3.82. Ingenuity Centre Year 1 n=6, weight: 14.5; Ingenuity Centre Year 2 n=5, weight: 12.8; Ingenuity Centre Year 3 n=3, weight: 21.67. Sensor City Year 1 n=3, weight: 29.

Alt text for Figure 68:

Three stacked bar charts showing experiences of STEM-related skills development. From left to right, the sections represent: 'Both myself and colleagues have experienced STEM-related skills development, 'I have personally experienced STEM-related skills development', 'I am aware that colleagues have experienced STEM-related skills development' and 'Don't know / N/A'. The graph shows that at least half of respondents each year reported no STEM-related skills improved.

Figure 69: Does your organisation have any other offices (or shared use space) other than the office space (or shared use space) at [Site]? (n = 217)

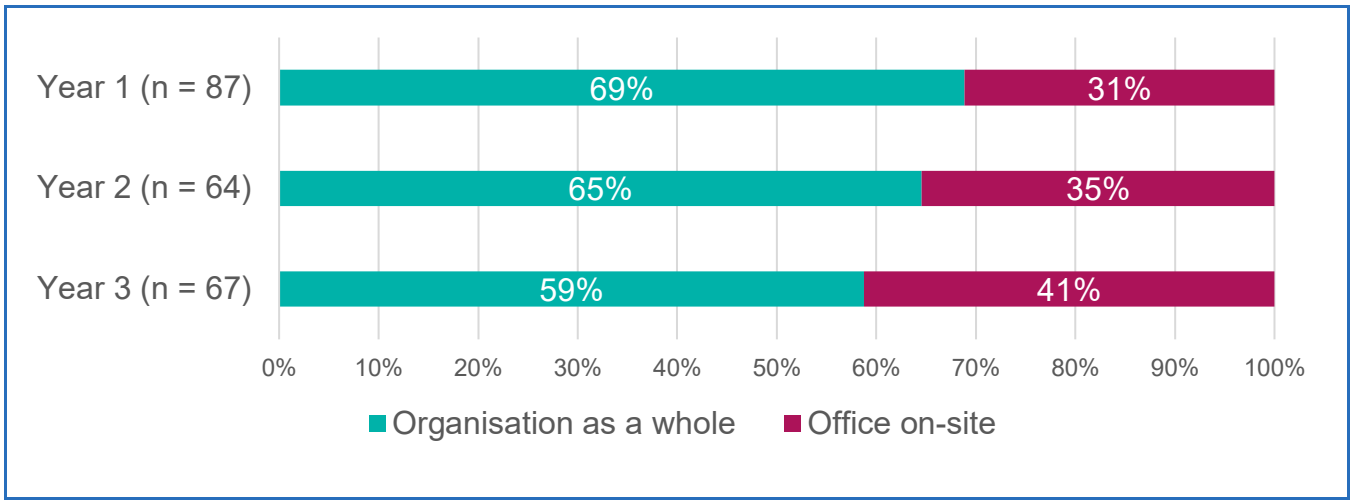


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 64, weight: 1.36; Bradfield Centre Year 2 n = 48, weight: 1.31; Bradfield Centre Year 3 n = 42, weight: 1.60. DHEZ Year 1 n=6, weight: 14.5; DHEZ Year 2 n=3, weight: 21; DHEZ Year 3 n=3 weight: 22.33. Future Space Year 1 n=8, weight: 10.88; Future Space Year 2 n=7, weight: 9; Future Space Year 3 n=19, weight: 3.53. Ingenuity Centre Year 1 n=6, weight: 14.5; Ingenuity Centre Year 2 n=5, weight: 12.6; Ingenuity Centre Year 3 n=3, weight: 22.33. Sensor City Year 1 n=3, weight: 29.

Alt text for Figure 69:

Three stacked bar charts showing whether organisations have any other offices. From left to right, the sections represent: 'Yes' and 'No'. The graph shows the responses fluctuating from one year to another, showing a 50/50 divide in Year 1, majority of respondents using other sites in addition to UEZ in Year 2, and majority of respondents not using other sites in Year 3.

Figure 70: Do your answers reflect that of your office on-site at [Site] or for the organisation as a whole (in case of a franchise or similar)? (n = 218)

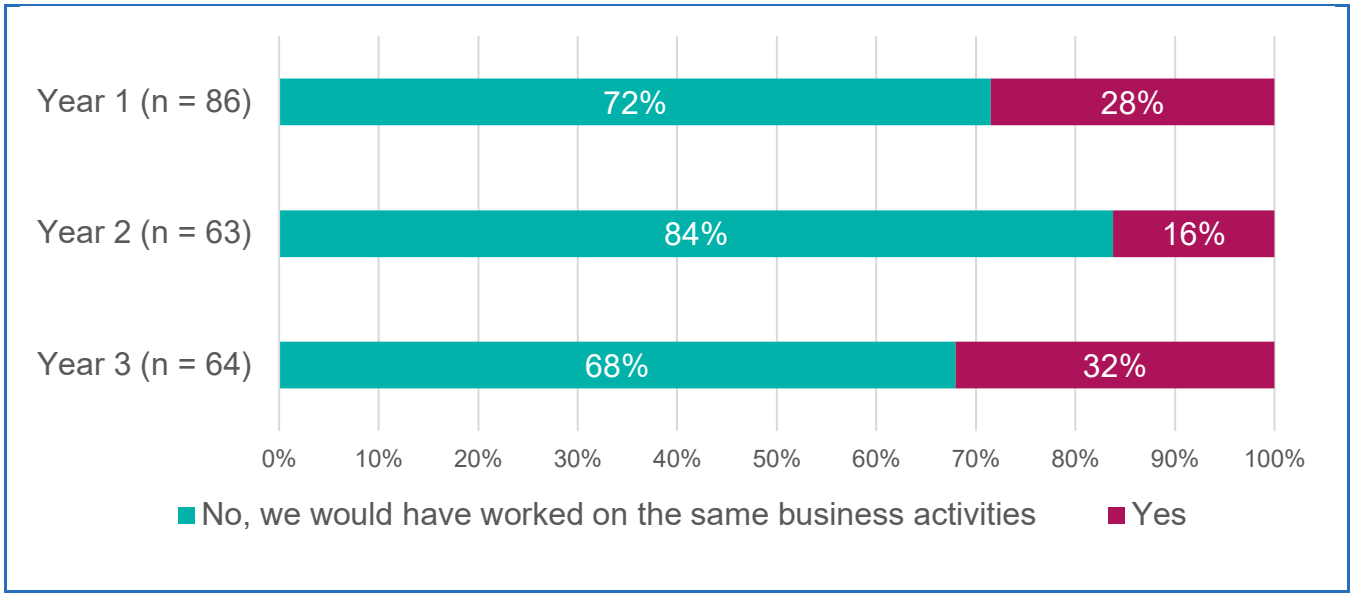


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 64, weight: 1.36; Bradfield Centre Year 2 n = 48, weight: 1.33; Bradfield Centre Year 3 n = 42, weight: 1.60. DHEZ Year 1 n=6, weight: 14.5; DHEZ Year 2 n=4, weight: 16; DHEZ Year 3 n=3 weight: 22.33. Future Space Year 1 n=8, weight: 10.88; Future Space Year 2 n=7, weight: 9.14; Future Space Year 3 n=19, weight: 3.53. Ingenuity Centre Year 1 n=6, weight: 14.5; Ingenuity Centre Year 2 n=5, weight: 12.8; Ingenuity Centre Year 3 n=3, weight: 22.33. Sensor City Year 1 n=3, weight: 29.

Alt text for Figure 70:

Three stacked bar charts showing whether answers reflect that of offices on-site or for the organisation as a whole. From left to right, the sections represent: 'Organisation as a whole' and 'Office on-site'. The graph shows that respondents' answers have reflected their organisations as whole more often than the employees on site.

Figure 71: If it were not for [Site], would you have worked on different research projects / activities? (n = 213)



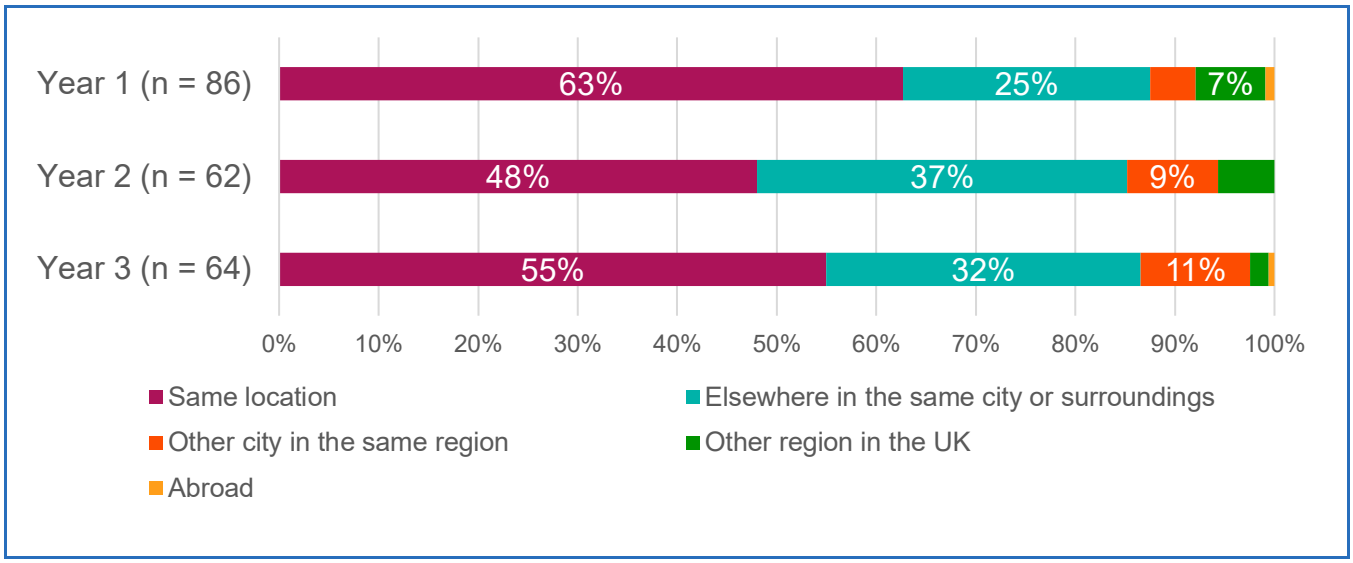
Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 63,

weight: 1.37; Bradfield Centre Year 2 n = 47, weight: 1.34; Bradfield Centre Year 3 n = 40, weight: 1.60. DHEZ Year 1 n=6, weight: 14.3; DHEZ Year 2 n=4, weight: 15.8; DHEZ Year 3 n=2 weight: 32. Future Space Year 1 n=8, weight: 10.75; Future Space Year 2 n=7, weight: 9; Future Space Year 3 n=19, weight: 3.37. Ingenuity Centre Year 1 n=6, weight: 14.3; Ingenuity Centre Year 2 n=5, weight: 12.6; Ingenuity Centre Year 3 n=3, weight: 21.33. Sensor City Year 1 n=3, weight: 29.

Alt text for Figure 71:

3 stacked bar charts showing whether they would have worked on different research projects/activities. From left to right, the sections represent: 'No, we would have worked on the same business activities' and 'Yes'. The graph shows that a majority of respondents every year reflected that they would have worked on the same business activities, with or without the UEZ.

Figure 72: If the same research activities or business space would have been available elsewhere, where would you have located instead? (n = 212)

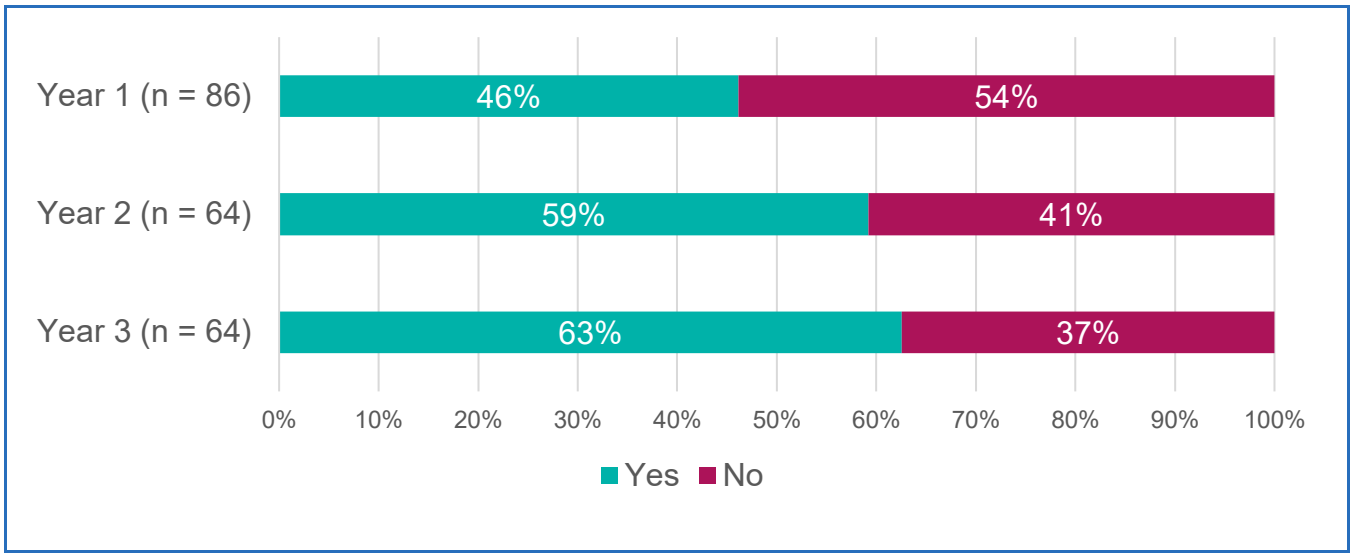


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 64, weight: 1.34; Bradfield Centre Year 2 n = 47, weight: 1.3; Bradfield Centre Year 3 n = 41, weight: 1.56. DHEZ Year 1 n=6, weight: 14.3; DHEZ Year 2 n=3, weight: 20.67; DHEZ Year 3 n=3 weight: 21.33. Future Space Year 1 n=7, weight: 12.29; Future Space Year 2 n=7, weight: 8.857142857; Future Space Year 3 n=17, weight: 3.764705882. Ingenuity Centre Year 1 n=6, weight: 14.3; Ingenuity Centre Year 2 n=5, weight: 12.4; Ingenuity Centre Year 3 n=3, weight: 21.33333333. Sensor City Year 1 n=3, weight: 29.

Alt text for Figure 72:

Three stacked bar charts showing where they would have located instead if the same research activities or business space would have been available. From left to right, the sections represent: 'Same location', 'Elsewhere in the same city or surroundings', 'Other city in the same region', 'Other region in the UK' and 'Abroad'. The graph shows that most respondents would have stayed in the same location every year.

Figure 73: In your opinion, is the offer of [Site] any different to that of a typical incubator? (n = 214)

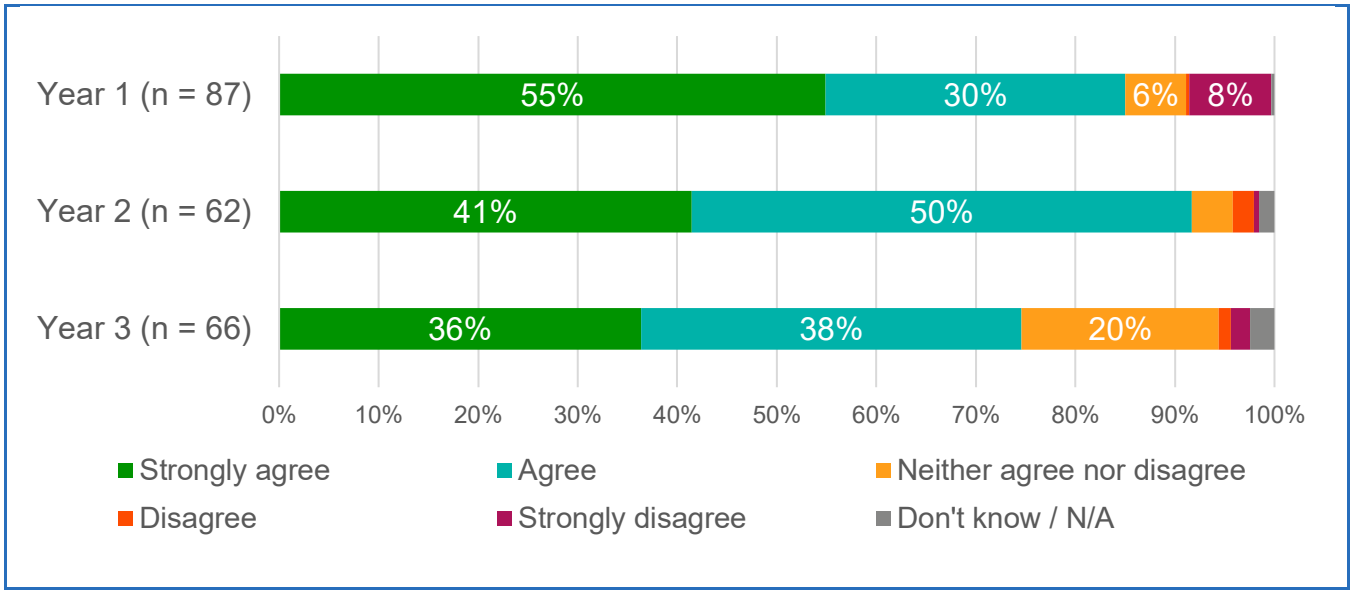


Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 64, weight: 1.34; Bradfield Centre Year 2 n = 48, weight: 1.33; Bradfield Centre Year 3 n = 41, weight: 1.56. DHEZ Year 1 n=5, weight: 17.2; DHEZ Year 2 n=4, weight: 16; DHEZ Year 3 n=1 weight: 64. Future Space Year 1 n=8, weight: 10.75; Future Space Year 2 n=7, weight: 9.14; Future Space Year 3 n=19, weight: 3.37. Ingenuity Centre Year 1 n=6, weight: 14.3; Ingenuity Centre Year 2 n=5, weight: 12.8; Ingenuity Centre Year 3 n=3, weight: 21.33. Sensor City Year 1 n=3, weight: 29.

Alt text for Figure 73:

Three stacked bar charts showing whether the offer of the UEZ is any different to that of a typical incubator from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: ‘Yes’ and ‘No’. The graph shows that respondents’ perception of the UEZ as a typical incubator has decreased from Year 1 to Year 3.

Figure 74: Taking into account the effort and costs, do you agree or disagree that it has been worthwhile participating in [Site]? (n = 215)



Source: Technopolis, based on data from UEZ surveys 2021-23. NB: weighted averages are used in the analysis to overcome the discrepancy with the volume of responses between UEZs. Bradfield Centre Year 1 n = 64, weight: 1.36; Bradfield Centre Year 2 n = 48, weight: 1.29; Bradfield Centre Year 3 n = 41, weight: 1.61. DHEZ Year 1 n=6, weight: 14.5; DHEZ Year 2 n=3, weight: 20.67; DHEZ Year 3 n=3 weight: 22. Future Space Year 1

n=8, weight: 10.88; Future Space Year 2 n=6, weight: 10.33; Future Space Year 3 n=19, weight: 3.47. Ingenuity Centre Year 1 n=6, weight: 14.5; Ingenuity Centre Year 2 n=5, weight: 12.4; Ingenuity Centre Year 3 n=3, weight: 22. Sensor City Year 1 n=3, weight: 29.

Alt text for Figure 74:

Three stacked bar charts showing agreement or disagreement with it being worthwhile participating in the UEZ from Year 1 (top) to Year 3 (bottom). From left to right, the sections represent: ‘Strongly agree’, ‘Agree’, ‘Neither agree nor disagree’, ‘Disagree’, ‘Strongly disagree’ and ‘Don’t know / N/A’. The graph shows that most respondents each year agree or strongly agree that the participation in UEZ has been worthwhile.

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