Independent Review of University Spin-outs

Annex D: Insights from a survey of spin-out founders

November 2023

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Contents

1 Key Insights

The survey received 620 valid responses from academic and non-academic university spin-out founders, the primary audience was executive leaders of spin-outs.[1]

- **IP created at universities was crucial for two thirds of spin-outs surveyed.**
    - The majority of respondents (66%) would not have spun-out without the existence of IP created at universities. However, almost a third of respondents said that they would have created a start-up regardless.
- **Most founders set up their spin-out to commercialise a technology they are passionate about (86%).**
    - Fewer numbers of respondents set up their spin-out to progress their career (29%) or to provide additional funding for research and technology development (25%).
- **For each support type founders reported receiving from the university, at least 74% of founders found it either somewhat or very helpful.**
    - The support types with the highest percentage of founders reporting it to be very helpful were supporting the filing and managing of patents (65%) and access to facilities and equipment (61%).
- **Fewer than a fifth of founders reported that they would have preferred to spin out alone.**
    - 69% of respondents would have preferred spinning out with at least some university support.
- **Slightly more founders disagreed that deals negotiated with the university/TTO were balanced and fair (43%), than agreed (39%).**
    - Only 15% of founders disagreed that deals with investors were balanced and fair.
- **14% of founders did not own a majority share of the company when it was founded.**
    - 14% reported that their university/TTO owned 50% or more of the company upon foundation. The average equity stake for the university/TTO was 24%, however.

[1] The survey also noted interest in founders who spun-out from other research organisations such as research institutes.

2 Introduction

2.1 Background

The Department for Science, Innovation and Technology (DSIT) and His Majesty's Treasury (HMT) jointly produced a survey of university spin-out founders to support the independent review of university spin-outs.

Spin-out founders are a heterogenous group who are difficult to access through interviews and roundtables alone. Therefore, the survey was undertaken to gain better access to the perspectives of spin-out founders, who play a crucial role in spin-outs. The purpose of the survey was to collect data from founders on their views of the spin-out process and information on the deal terms agreed for their spin-outs. This report summarises the findings of the survey.

2.2 Methodology Overview

The survey was launched on the 31st May 2023 and was open for seven weeks, closing on the 19th July 2023. It received 620 valid responses following data cleaning. Further details on the methodology and data cleaning process can be found in Appendix 1.

A list of all spin-outs in the UK does not exist, so it is difficult to determine the extent to which the responses received are representative of the spin-out population. However, the survey was distributed through a variety of channels for maximum reach. These channels included Beauhurst, Royal Society, Royal Academy of Engineering, UK Research and Innovation (UKRI), Intellectual Property Office (IPO), PraxisAuril, British Private Equity & Venture Capital Association (BVCA), Centre for Entrepreneurs and Bio-industry association.

For the purposes of this survey, DSIT and HMT were interested in the perspectives of both academic and non-academic spin-out founders, although the primary audience was executive leaders of spin-outs.[2]

[2] The survey also noted interest in founders who spun-out from other research organisations such as research institutes.

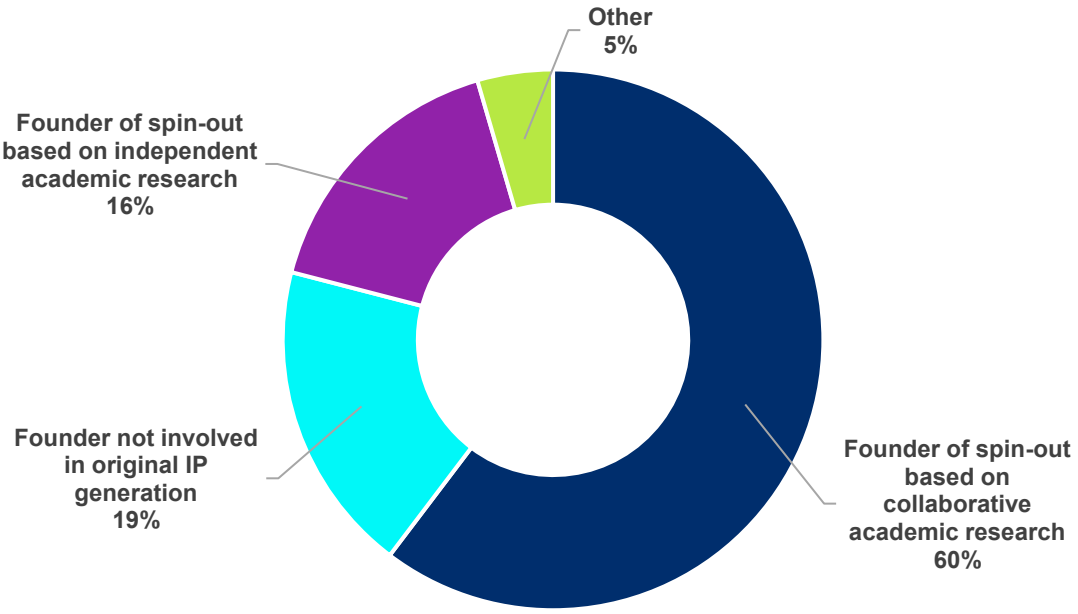
3 Founder and Spin-out Characteristics

3.1 Characteristics of Founders

To identify eligibility for the survey, respondents were first asked about their involvement in setting up a spin-out based on research from a UK university. Figure 1. shows that 76% of respondents were founders based on research they produced either as a sole inventor or a collaborator. Just under a fifth of responses (19%) were from founders not involved in the original generation of IP.

Figure 1. Type of founder

Over three quarters of founders formed their spin-out based on academic research conducted either individually or as a collaborator

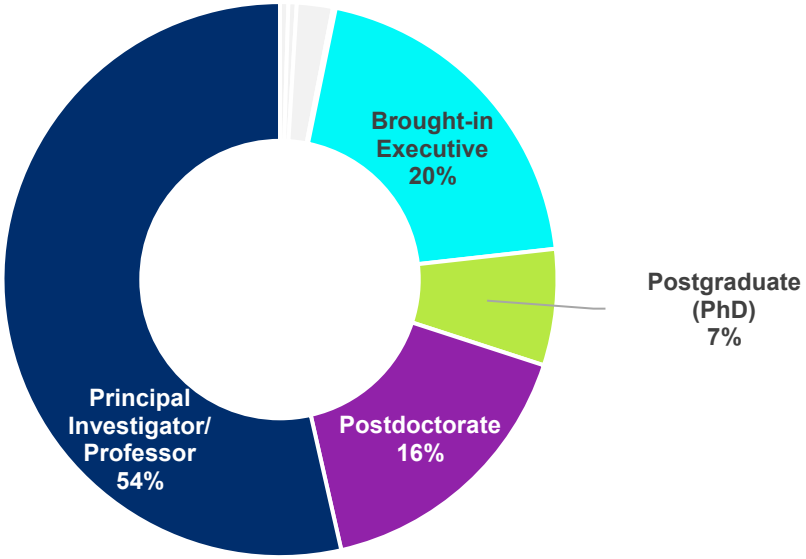


Note: Base = All respondents (620).

Just over half of responses (54%) were from founders who held a Principal Investigator or Professor role in their university. A fifth of responses were from founders who were brought-in as an Executive (20%), meaning they were not part of the original IP creation. The remaining responses were made up of those in postdoctorate (16%), postgraduate (PhD) (7%) or postgraduate (Masters) (2%) study.

Figure 2. Founder position on spin-out creation

Over half of founders were Principal Investigators or Professors on creation of their spin-out

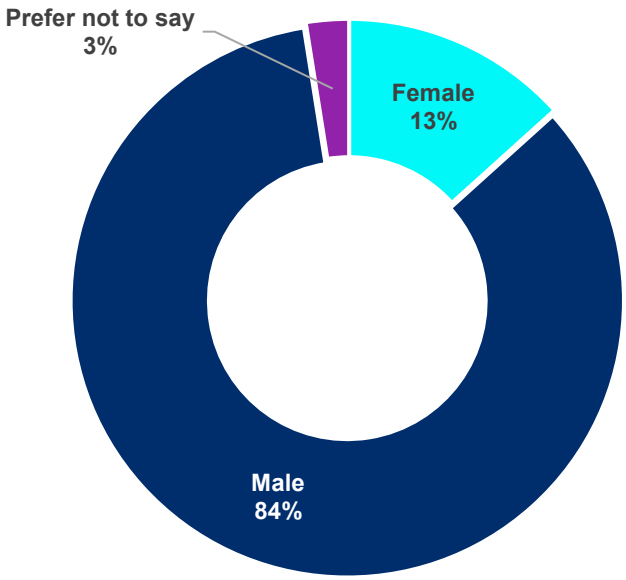


Note: Base = All respondents (620), 2% selected Postgraduate (Masters) and less than 1% of respondents selected 'Undergraduate', 'Do not know' or 'Prefer not to say' so are not labelled.

To aid understanding of the profile of UK spin-out founders and how well the survey captured diverse views, respondents were asked to provide their gender and age. It is important to note that respondents were asked for their age at the time of responding, not how old they were when they founded their spin-out. 84% of responding founders identified as male and 13% female.

Figure 3. Gender of Respondents

The vast majority of responses were from male spin-out founders



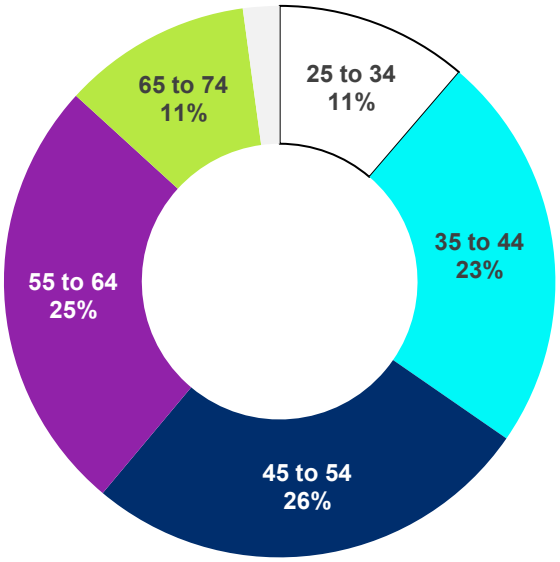
Note: Base = 518 respondents.

Approximately a quarter of founders reported being in each of the following age ranges, *'35 to 44' (23%)*, *'45 to 54'* (26%) and *'55 to 64'* (25%). Therefore, 74% of responding founders were aged between 35 to 64. This is in line with Beauhurst's Spotlight on Spin-outs Report which found that 77% of active founders were aged between 30 to 59.[3]

[3] Beauhurst (2023). *Spotlight on Spinouts*, May 2023, https://www.beauhurst.com/research/spotlight-spinouts-2023/

Figure 4. Age of Founder at time of responding

Almost three quarters of respondents were aged 35 to 64

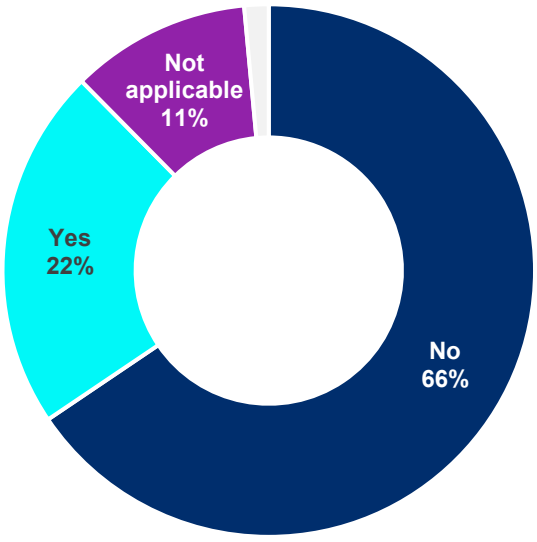


Note: Base = 519 respondents. A small percentage selected either '75 to 79' (1%), '80+' (1%) or 'prefer not to say' (1%) so are not labelled. No respondents selected the age range '16 to 24'.

Academic founders face the choice of leaving their current university employment or PhD to join the spin-out. The survey found that two-thirds of founders did not leave university employment or their PhD (66%), this was three times more than the number of respondents that did report leaving (22%).

Figure 5. Whether the founder left university employment or PhD to join spin-out

Two-thirds of founders did not leave their PhD or university employment to join the spin out

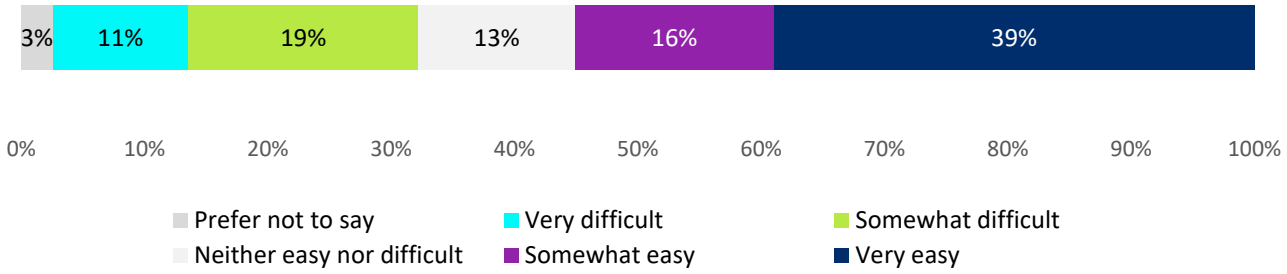


Note: Base = 118 respondents. A small percentage selected 'Prefer not to say' (1%) which is not labelled.

Of those that reported leaving university employment or their PhD to join the spin-out, most found this to be 'somewhat easy' or 'very easy' (55%) practically. In contrast, just under a third (30%) reported that it was either 'somewhat difficult' or 'very difficult'.

Figure 6. Practical ease of leaving university employment or PhD

The majority found it easy to leave university employment or their PhD' to join the spin-out (55%)

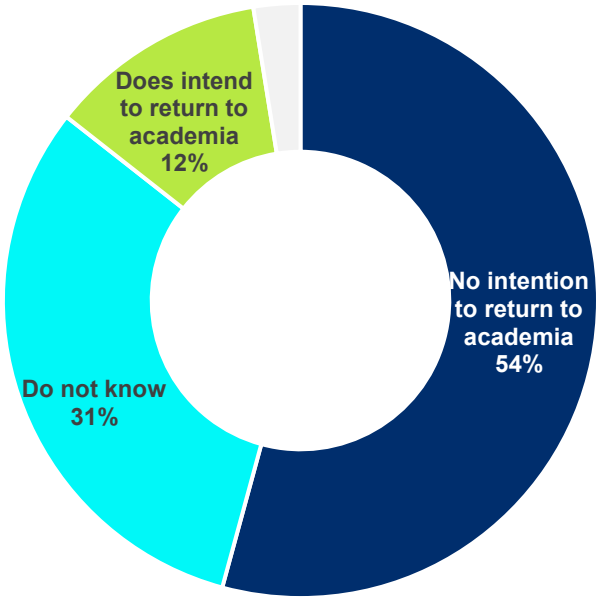


Note: Base = 118 respondents.

Having left university employment or their PhD, founders may choose to return to academia in the future. Of the founders who reported leaving, only 12% indicated they intend to return. The majority reported they had no intention to return to academia (54%), although many were unsure, with 31% answering that they did not know.

Figure 7. Intention to return to academia amongst founders who left to join the spin-out

Most respondents who left university employment or their PhD to join the spin out reported no intention to return to academia



Note: Base = 118 respondents. A small percentage selected 'Prefer not to say' (3%) which is not labelled.

3.2 Characteristics of Spin-outs

Table 1. shows the ten universities that most respondents spun out from. The top four institutions of the University of Oxford, the University of Cambridge, University College London, and Imperial College London accounted for 43% of respondents. HESA publishes data on Higher Education Business and Community Interaction (HE-BCI)[4] this includes high-level data on spin-outs. HE-BCI reports 29% of active spin-outs originated from the four institutions mentioned above in 2021/22. The remainder of responses in our survey (57%) were from 52 other universities.

Our sample is broadly comparable to the wider population in terms of where active spin-outs originated, as 7 of the top 10 universities that founders responding to our survey spun-out from are also in the top 10 according to HE-BCI statistics for 2021/22. The percentage of total spin-outs that originated from each of our top 10 universities is also similar, with the exception of the University of Oxford which has representation of 11 percentage points more in our survey than is reported in HE-BCI. Overall, Table 1 indicates our survey is broadly representative of universities but not perfectly representative, and there are also many other characteristics of spin-outs for which we do not have HE-BCI data.

[4] HESA, Higher Education Provider Data: Business and Community Interaction, https://www.hesa.ac.uk/data-and-analysis/business-community

Table 1. Universities that founder spun-out from (10 most reported displayed)

A high proportion of founders surveyed spun-out from universities in the Greater South East

University	Survey Count	Survey Percentage of individual responses	HE-BCI Count	HE-BCI Percentage of organisations
The University of Oxford	115	19%	162	8%
The University of Cambridge	59	10%	223	12%
Imperial College London	45	8%	88	5%
University College London	33	6%	75	4%
The University of Manchester	29	5%	82	4%
The University of Bristol	27	5%	80	4%
The University of Sheffield	27	5%	41	2%
The University of Southampton	21	4%	37	2%
The University of Glasgow	19	3%	43	2%
The University of Strathclyde	17	3%	40	2%

Note: Base = 592 respondents.

Table 2. shows the six most reported fields or departments from which respondents' spin-outs emerged. Around a third of responses (34%) were from spin-outs in the 'Engineering and technology' field and around a fifth were from 'Physical sciences' (22%). The responses from spin-outs from either the 'Medicine and dentistry' (11%), or 'Subjects allied to medicine' (9%) fields combined also made up around a fifth (20%). These six fields represent the majority of responses (90%). There were at least eleven other fields which represented around 10% of responses.

Table 2. Spin-out field or department (top 6 most reported displayed)

Engineering and technology was the most common field/department

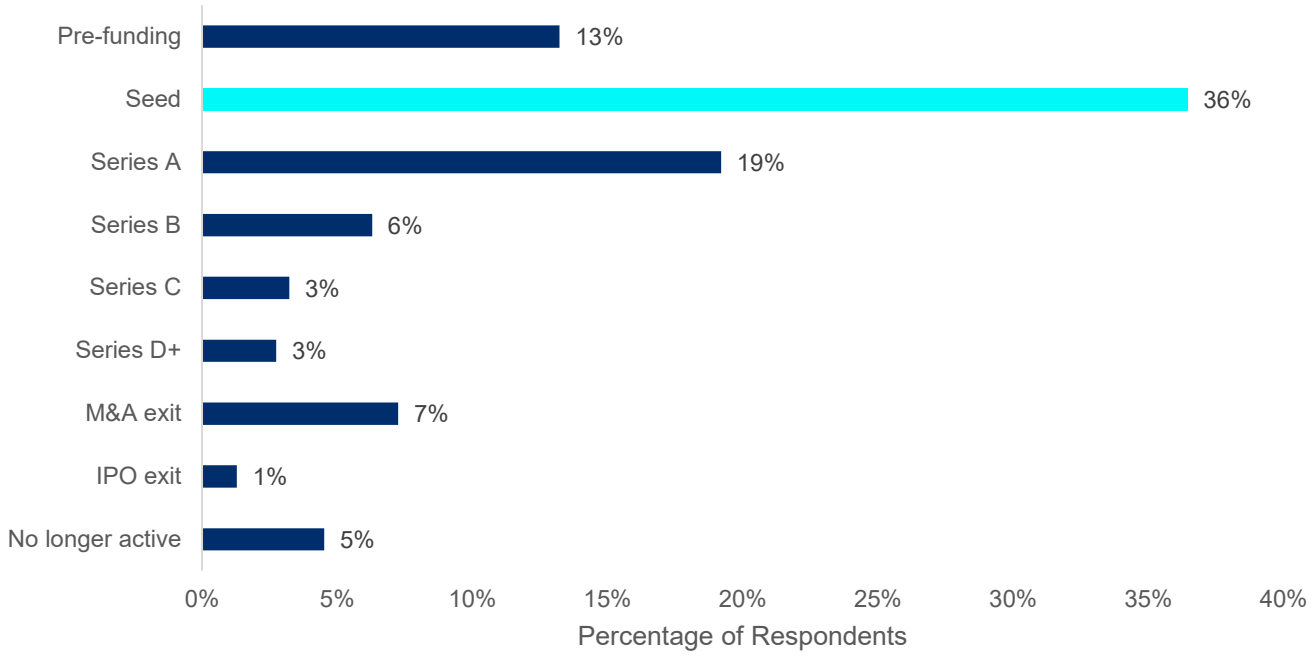
Field/department	Count	Percentage
Engineering and technology	208	34%
Physical sciences	138	22%
Medicine and dentistry	67	11%
Subjects allied to medicine	54	9%
Computing	49	8%
Biological and sport sciences	43	7%

Note: Base = All respondents (620).

The survey asked respondents about the stage of their spin-out at the time of responding. Nearly half of founders (49%) reported being in the very early stages of spinning out, either pre-funding (13%) or seed stage (36%). 19% reported that their spin-out was at the Series A stage and 12% reported being at Series B funding or later. A small proportion of respondents (8%) reported a Mergers and Acquisitions (M&A) or Initial Public Offering (IPO) exit. Only 5% of responses were from founders whose spin-out was no longer active.

Figure 8. Stage of the Spin-out

49% of founders reported being at the pre-funding or seed-funding stage

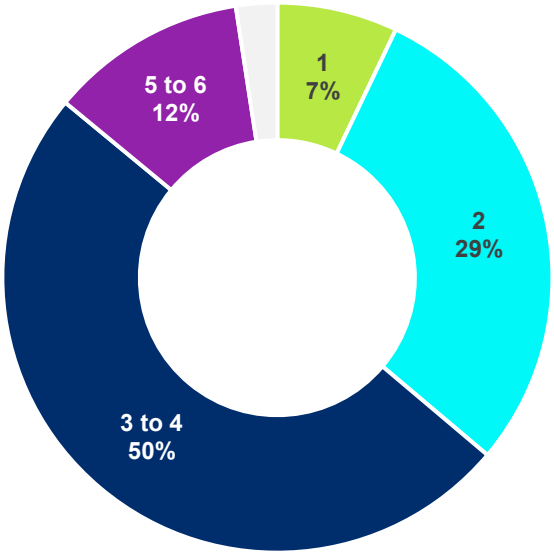


Note: Base = All respondents (620). A small percentage selected 'Do not know' (4%) and 'Prefer not to say' (2%).

Respondents were asked how many founders their spin-out has, this was defined as the number of 'individuals receiving founding equity in the spin-out'. Most respondents (86%) had four or fewer founders. Half had either three or four founders, with only a minority (14%) having five or more.

Figure 9. Number of founders

Half of Spin-outs had three or four original founders

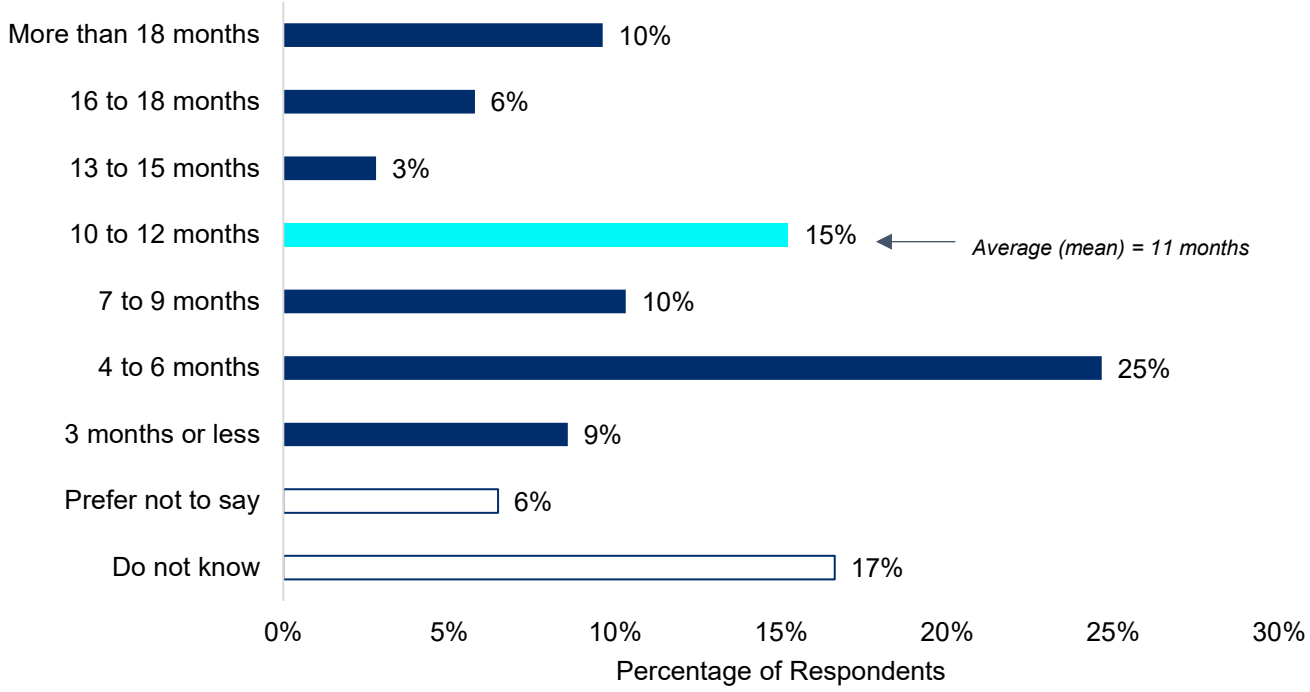


Note: Base = 578 respondents. A small percentage selected '7 or more' which is not labelled (2%).

Founders were asked to report how long it took to complete their spin-out deal from the point founders and the university/TTO agreed to form a spin-out to having all agreements signed and ready to proceed. This most commonly took 4 to 6 months to complete (25%), although the average (mean) was 11 months. Only a small percentage of spin-outs' deals took over 18 months to complete (10%).

Figure 10. Time to complete spin-out deal[5]

59% of respondents reported their spin-out deal took a year or less to complete



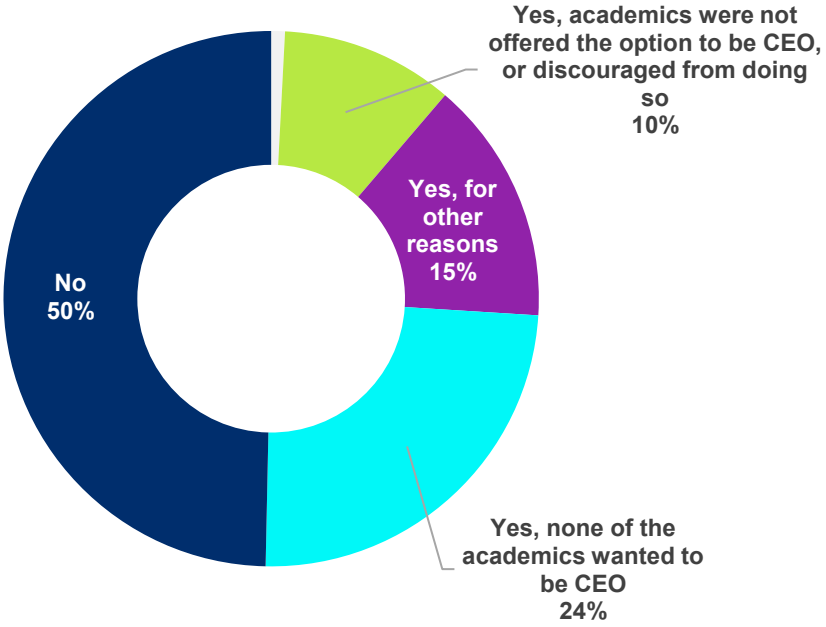
Note: Base = 572 respondents.

Founders were also asked whether their spin-out had a hired-in CEO in addition to the academic founders. Academic founders may not become the CEO of their spin-out for a variety of reasons such as having other commitments or a lack of commercialisation skills. This was highlighted in the 2022 R&I Workforce survey which identified commercial skills as the most frequently referenced skill needing further development to progress in R&I careers[6]. The founder survey found that there was almost an even split between spin-outs that did not hire-in a CEO (50%) and those that did (49%).

[5] Measured from when the founders and university/TTO agreed to form a spin-out to having all agreements signed and ready to proceed.
[6] Research and innovation (R&I) workforce survey report, 2022, p.43, https://www.gov.uk/government/publications/research-and-innovation-ri-workforce-survey-report-2022

Figure 11. Whether the spin-out 'hired-in' a CEO and reason why

There was an almost equal split between spin-outs with a hired-in CEO compared to those without

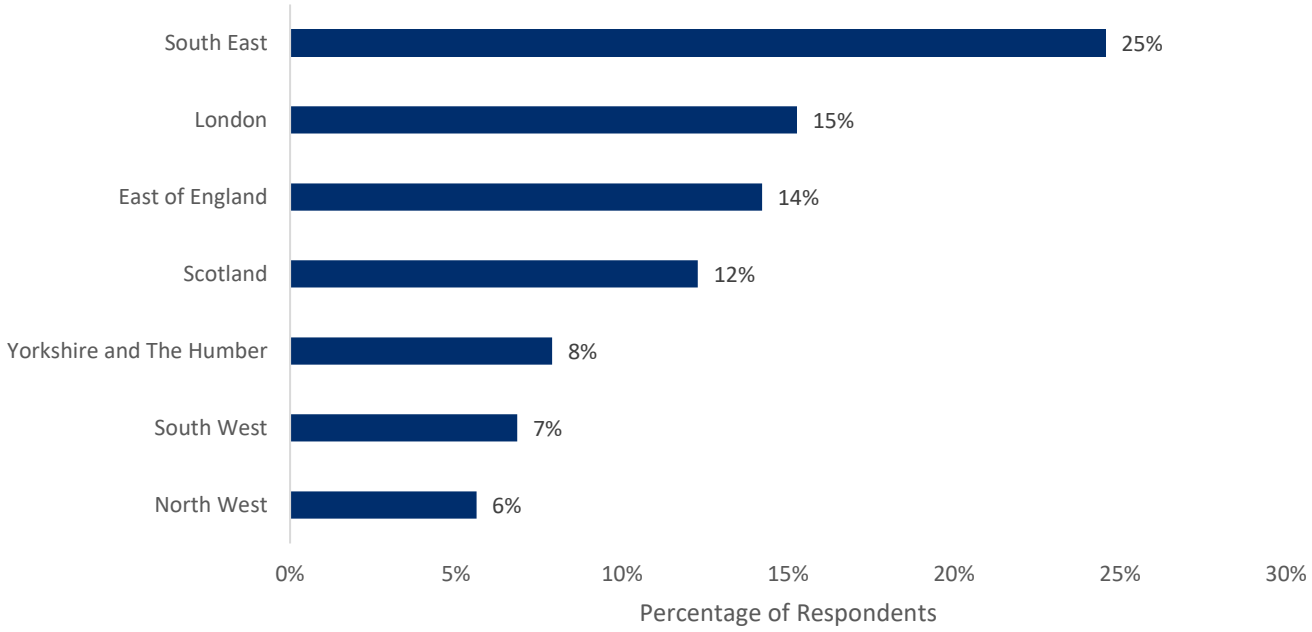


Note: Base = 604 respondents, a small percentage selected 'Prefer not to say' (1%) and is not labelled.

The survey explored the location of spin-out headquarters. 54% of founders reported their headquarters to be in either London, the South East or East of England regions, which aligns with the survey findings highlighted in Table 1. The other regions represented 46% combined, with the East Midlands and West Midlands having only 6% of reported headquarters located there.

Figure 12. Location of spin-out headquarters

54% of spin-out headquarters were in the South East, London or East of England



Note: Base = 570 respondents. A small number selected the North East, East Midlands, West Midlands and Wales (3% each) and 1% selected Northern Ireland, these are not displayed.

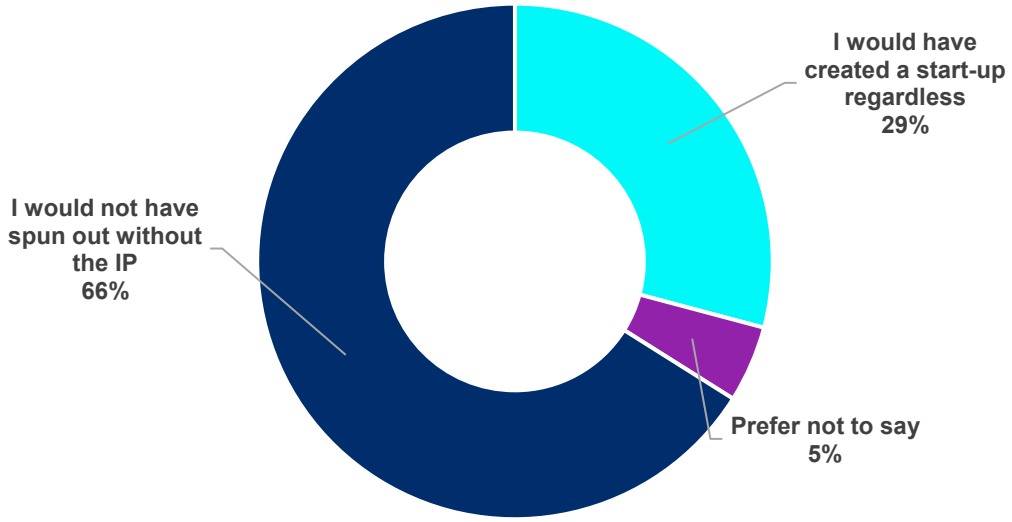
4 Spin-out Creation and Support

4.1 The decision to form a spin-out

Founders were asked if the existence of university-owned IP was material to their decision to form a spin-out. Most agreed this was the case (66%), although almost a third stated that they would have created a start-up regardless (29%).

Figure 13. Impact of the existence of university-owned IP on the decision to form a spin-out

University-owned IP was crucial for the majority of spin-outs

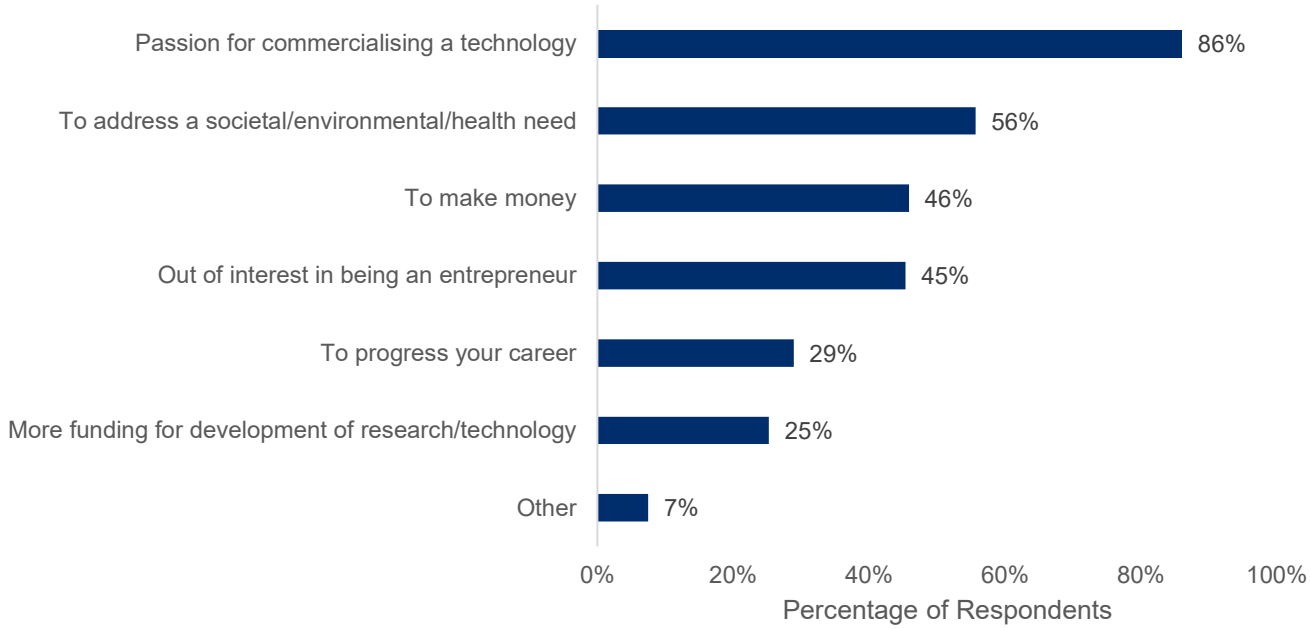


Note: Base = 604 respondents

The survey explored founders' reasons for setting up their spin-out. Respondents could select multiple options. The most common reason reported for setting up a spin-out was to commercialise a technology they are passionate about (86%). Fewer founders set up their spin-out to progress their career (29%) or to provide additional funding for research and technology development (25%).

Figure 14. Reason for setting up spin-out

Nearly all founders set up their spin-out, at least partly, to commercialise a technology they were passionate about

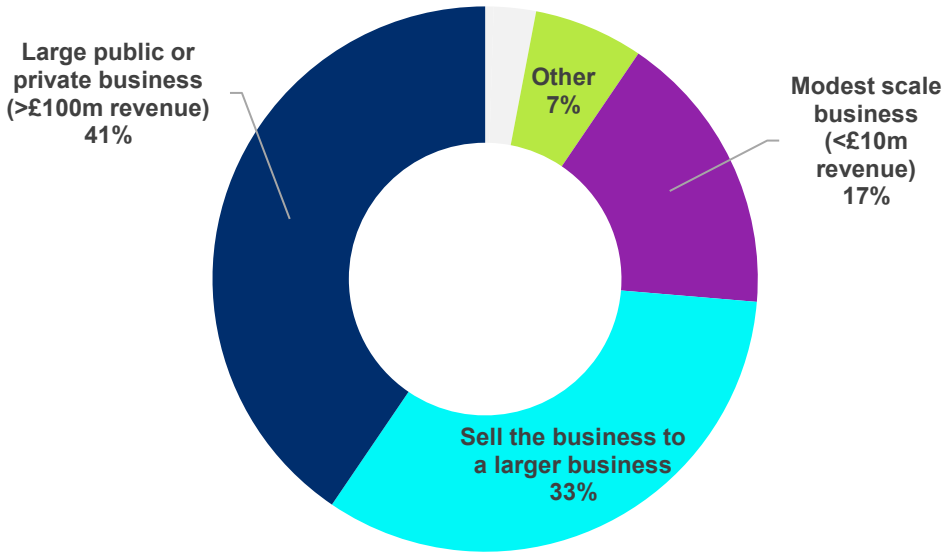


Note: Base = 602 respondents. A small percentage selected 'Prefer not to say' (0%) which is not displayed.

Founders were also asked to highlight their ambition for the spin-out. 58% indicated they wanted to grow their business, whereas 33% had the ambition to sell the business to a larger business once the technology is proven.

Figure 15. Spin-out ambition

Over half of founders reported ambitions to grow their business



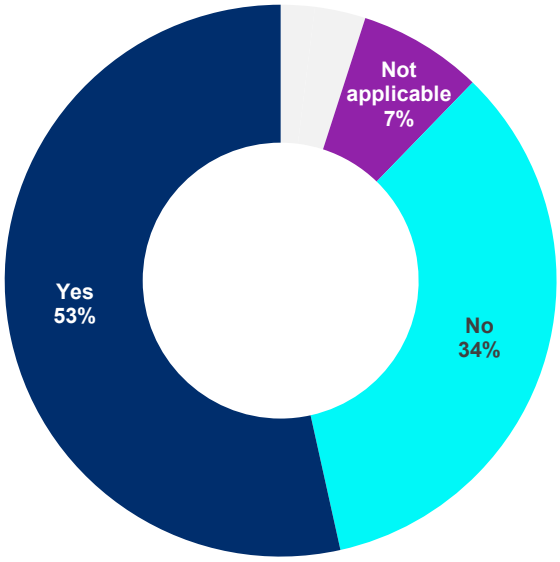
Note: Base = 600 respondents. A small percentage selected 'prefer not to say' (3%) or 'do not know' (1%) which are not labelled.

4.2 University/Technology Transfer Office Involvement

The survey asked founders about the involvement of their Technology Transfer Office (TTO) throughout the spin-out process. Just over half (53%) of respondents had involvement from their TTO when deciding between a spin-out and other commercialisation routes, compared to a third (34%) who did not.

Figure 16. Involvement of TTO in deciding between a spin-out and other commercialisation routes

TTOs are often involved in the decision to spin-out

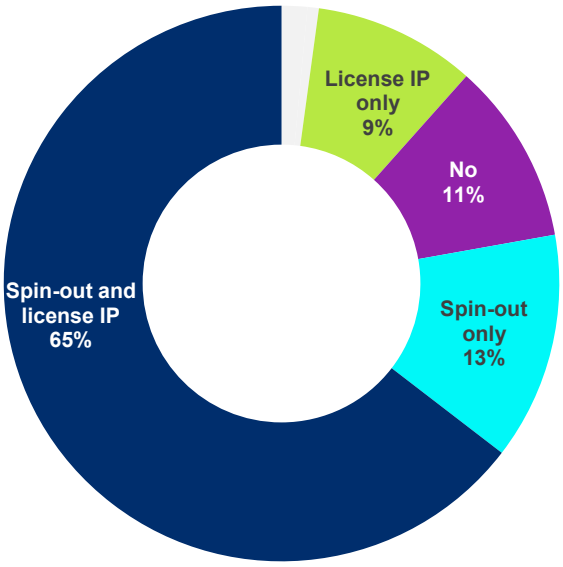


Note: Base = 604 respondents. A small percentage selected 'Do not know' (3%) and 'Prefer not to say' (2%) and are not labelled.

The majority of respondents entered into a commercial agreement with their TTO to officially spin-out and license IP (65%). Just over a tenth entered into a commercial agreement to spin-out only (13%), and just under a tenth to license IP only (9%). 11% did not enter into a commercial agreement with their TTO.

Figure 17. Commercial agreement with TTO

The majority of spin-outs had a commercial agreement with their TTO to spin-out and license IP

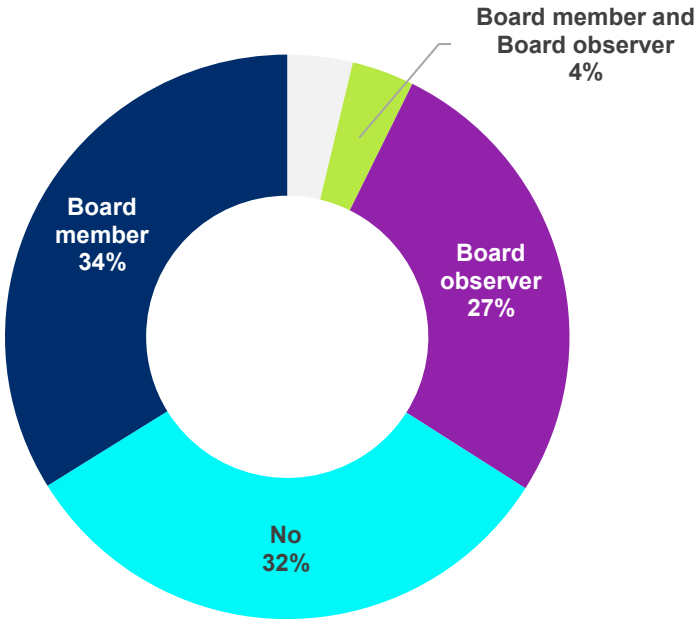


Note: Base = 604 respondents. A small percentage selected 'do not know' (1%) and 'prefer not to say' (1%) which are not labelled.

The survey asked whether the respondents' university or TTO required a board member or observer in the spin-out. Most respondents (65%) reported that their university or TTO did require either a board member (34%), a board observer (27%) or both (4%). Nearly a third of respondents required neither a board member nor observer in their spin-out (32%).

Figure 18. Requirement for board member or board observer

Most universities/TTOs required a board member or observer



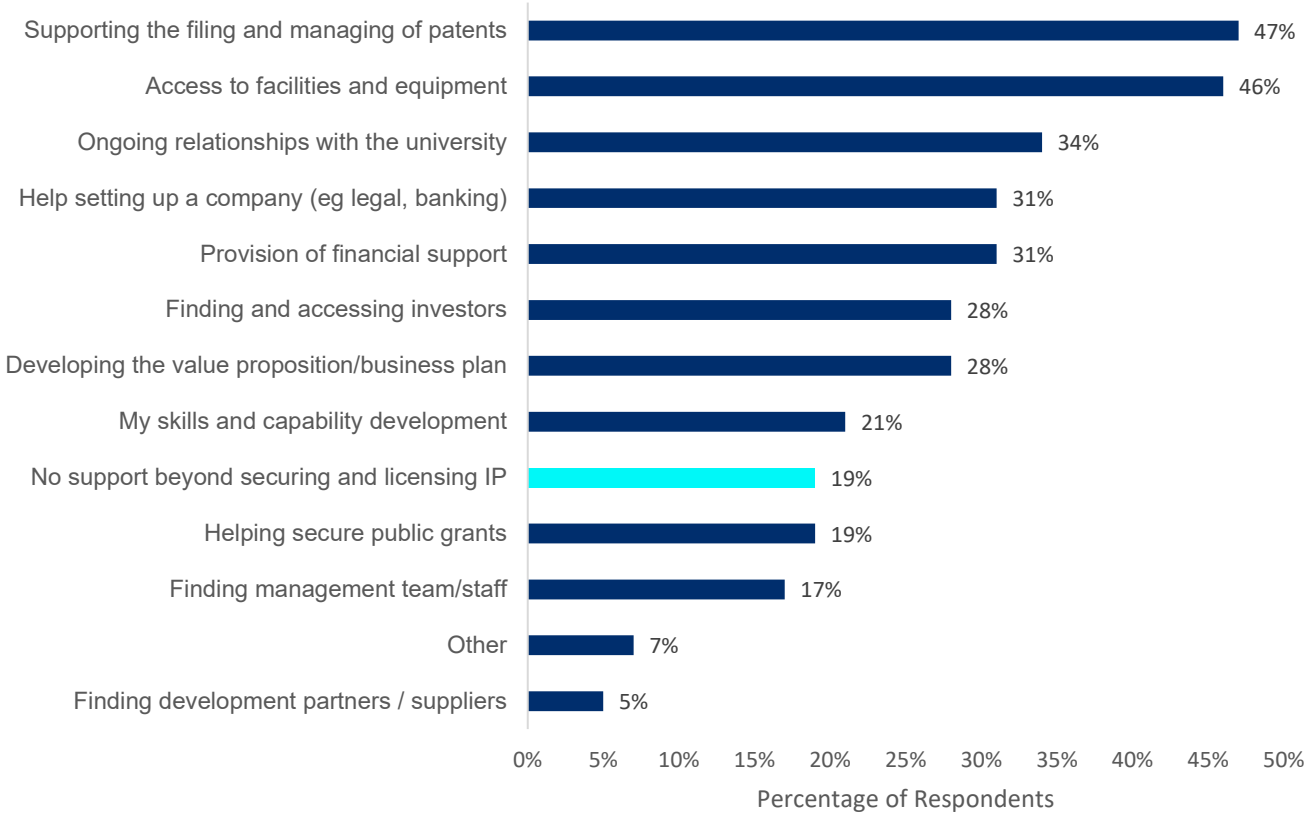
Note: Base = 588 respondents. A small percentage selected 'Do not know' (2%) and 'Prefer not to say' (2%) which are not displayed.

Founders were asked to select the means of support that their university or TTO provided in enabling them to spin out. Figures 12 and 13 use shorter descriptions of the type of support. A list of the full descriptions can be found in Appendix 2.

Founders reported receiving a wide range of support, with seven types selected by over a quarter of respondents. The most commonly reported forms of support were 'supporting the filing and managing of patents' (47%) and 'access to facilities and equipment' (46%). A third of respondents (34%) reported they were supported with 'ongoing relationships with the university'. Notably, around a fifth of respondents reported they 'did not receive any support beyond securing and licensing IP' (19%).

Figure 19. Type of university or TTO support

A wide variety of support was reported but a fifth of respondents received no support beyond securing and licencing IP



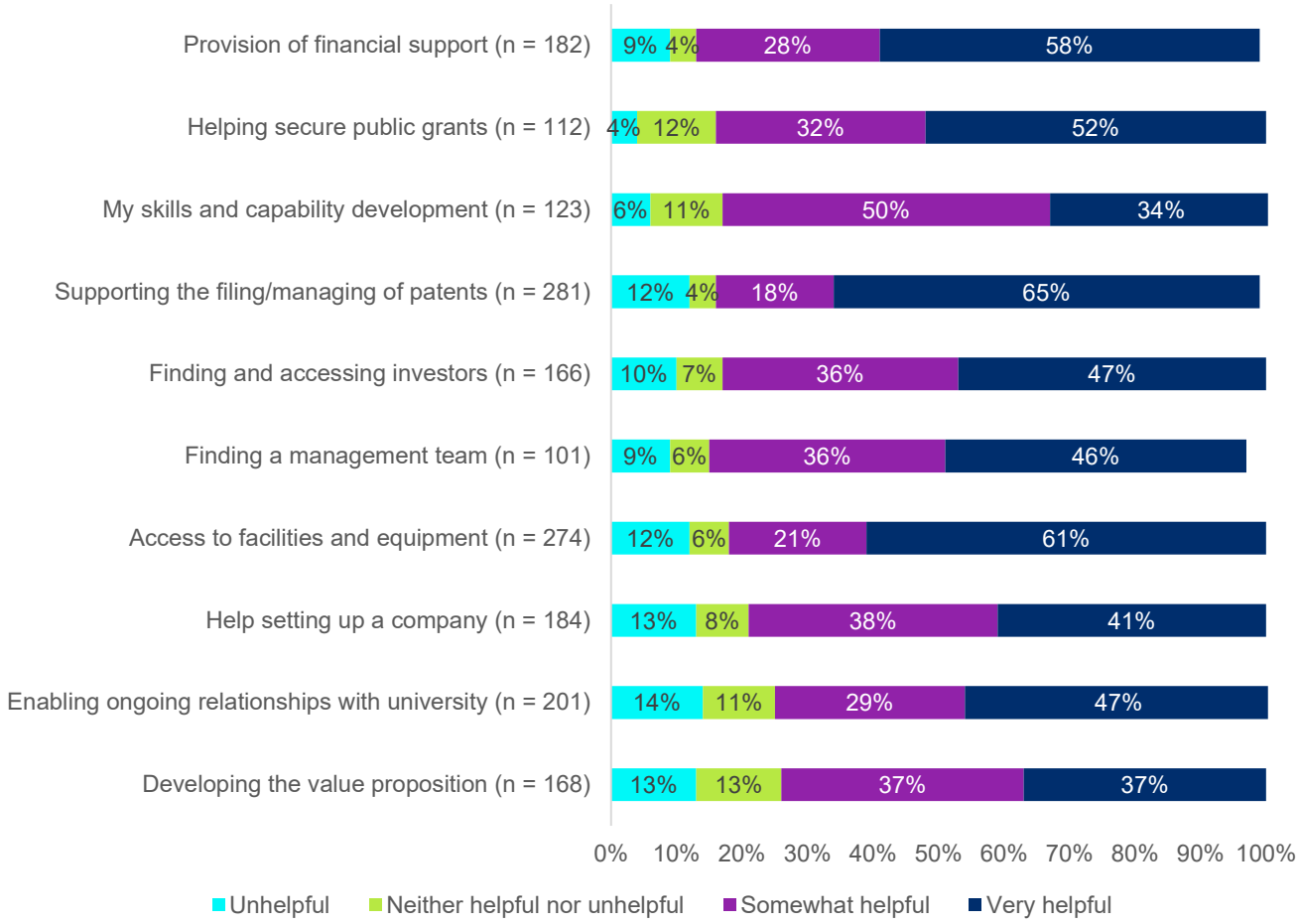
Note: Base = 592 respondents. A small percentage selected 'Prefer not to Say' (0%) or 'Do not know' (1%) and are not displayed.

Respondents were subsequently asked how helpful they found their selected support types. Founders were generally positive about the support they received. For all support types, over 70% of founders reported that they found the support helpful (either 'very' or 'somewhat' helpful). Furthermore, four types of support were reported as 'very helpful' by a majority of respondents: 'provision of financial support' (58%), 'helping to secure public grants' (52%), 'supporting the filing and managing of patents' (65%) and 'access to facilities and equipment' (61%).

Due to low counts of respondents within these categories, 'somewhat unhelpful' and 'very unhelpful' were combined as 'unhelpful'. No support type was reported as 'unhelpful' by more than 14% of founders, reflecting the positive feelings towards the support received.

Figure 20. Helpfulness of support received from the university or TTO

The majority of founders reported each type of support as 'somewhat helpful' or 'very helpful'



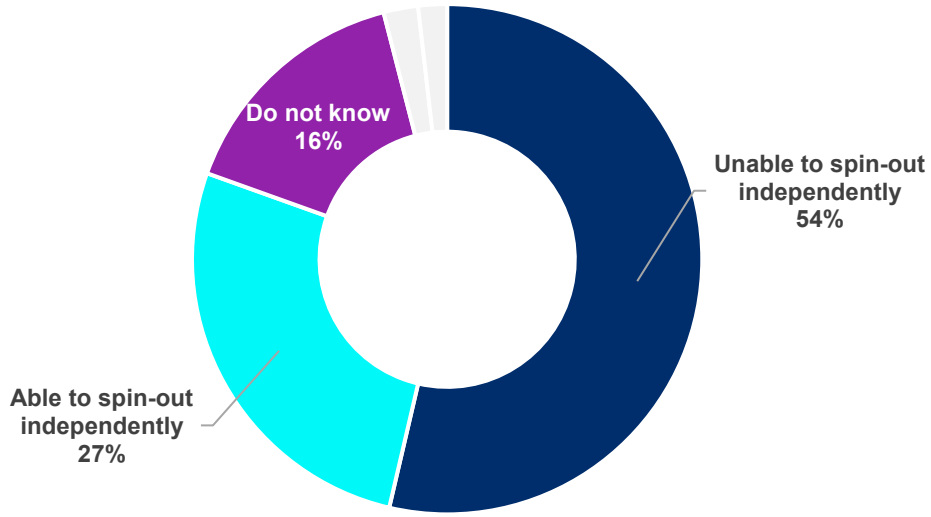
Note: The base varies for each support type depending on how many founders selected each type. *'Finding development partners/suppliers' has been excluded given a low base of respondents (n = 29).*

5 Founders' Perceptions of the Spin-out Process

Just over half of founders reported that they were not able to spin-out independently of the university by, for example, taking ownership of all IP (54%). Just over a quarter were able to (27%).

Figure 21. Ability to spin out independently of the university

Most founders were not able to spin out independently of the university



Note: Base = 548 respondents. A small percentage responded 'Prefer not to say' (2%) or 'Not applicable' (2%) which are not displayed.

Respondents were also asked what their preferred option for spinning out would have been. The survey provided three options for founders to select, detailed below. They could also provide details of other options if none of these applied.

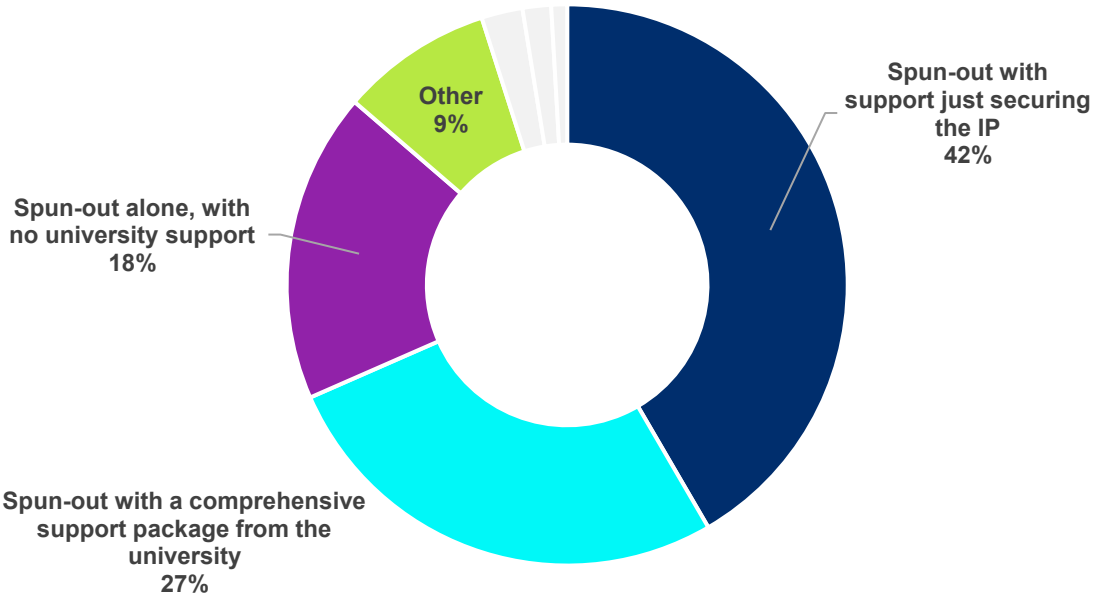
Preferred Spin-out terms
Spun-out alone, with no university support including for securing IP.
Spun-out with support just securing the IP, and low university deal terms (e.g. ~10% equity, ~0.5% royalty). Note this would include no funding for pre-incorporation proof-of concept, except publicly funded grants.

Spun-out with a comprehensive support package from the university, and higher university deal terms (e.g. access to expensive equipment and facilities, proof-of-concept and seed funding pre-incorporation, favourable consultancy terms).

70% of founders preferred involvement from the university. Over 40% preferred the option of some support ('support just securing the IP') (42%) and just under 30% with a 'comprehensive support package' (27%). Only 18% reported that they would have preferred to 'spin-out alone, with no university support. This does not take into account the 'other' responses (9%) in which respondents detailed a bespoke combination of the options above.

Figure 22. Preferred spin-out terms

Only 18% of respondents reported they would prefer to spin-out with no university support

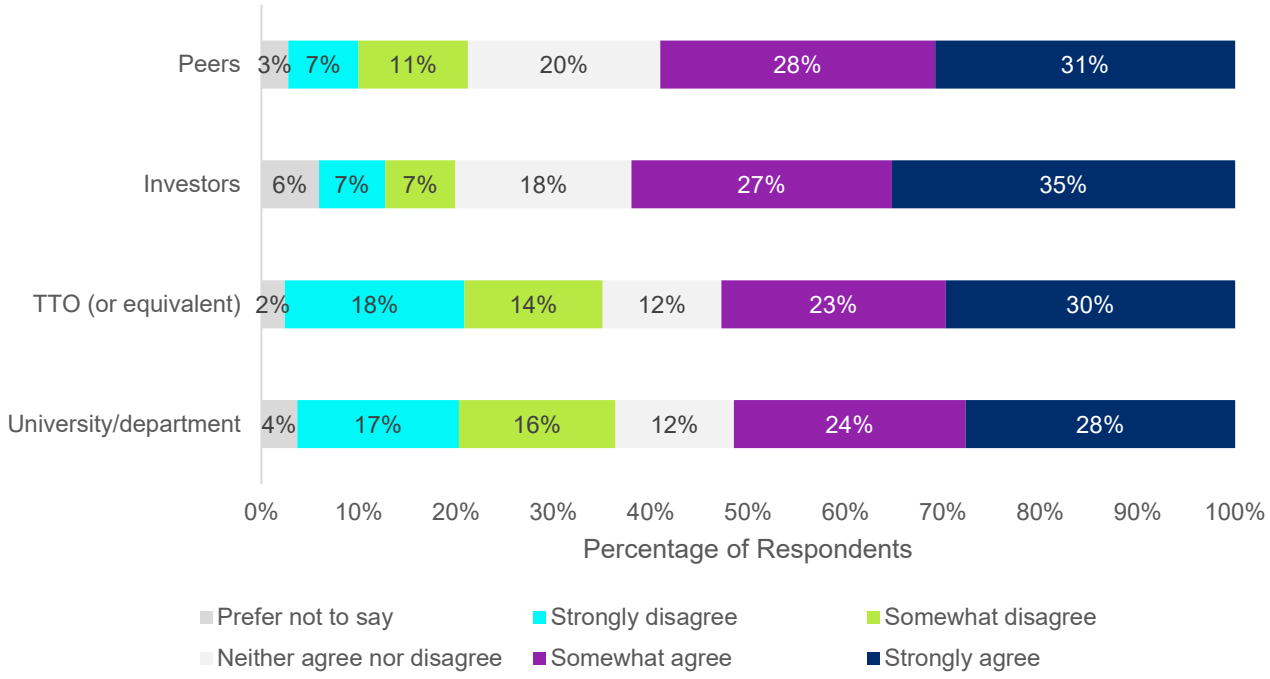


Note: Base = 548 respondents. A small percentage responded 'Prefer not to say' (1%), 'Not applicable' (2%) or they 'Do not know' the answer (2%).

Over half of founders either 'somewhat' agreed or 'strongly' agreed that they felt supported by their 'university/department', 'Technology Transfer Office', 'investors' and 'peers'. The highest levels of disagreement were seen for the university/department and TTO, with about a third disagreeing they felt supported by either.

Figure 23. Founders' perception of support from each source during the spin-out process

The majority of respondents felt supported by each of the listed sources

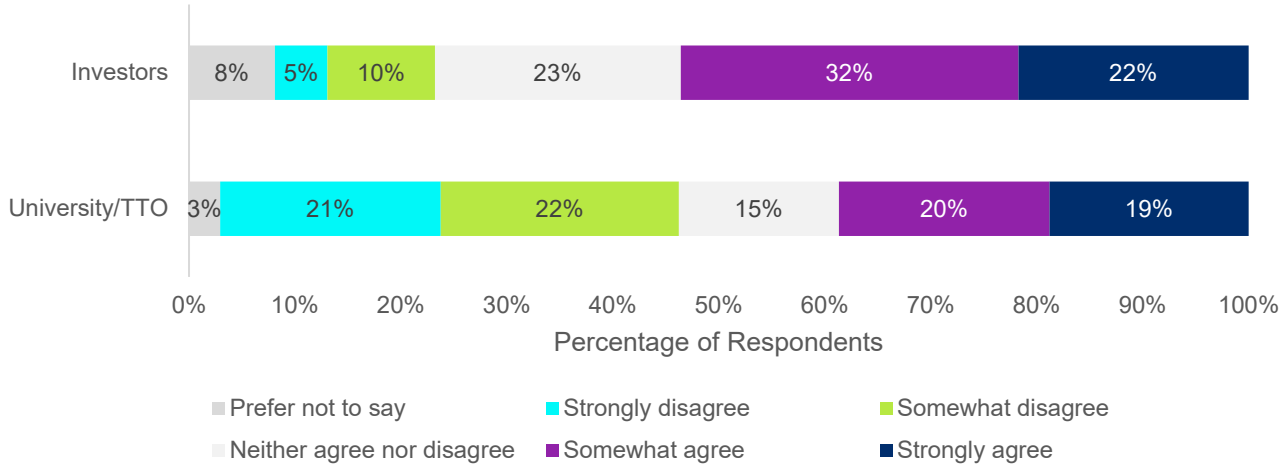


Note: Base = 542 respondents.

The survey sought views from respondents on the deals that they negotiated. There was more agreement that 'deals negotiated with investors were balanced and fair' (54%), compared to 'deals negotiated between academic founders and the university/TTO' (39%). Only 5% strongly disagreed that deals with investors were fair, whereas 21% strongly disagreed that deals with the university/TTO were fair.

Figure 24. Perceptions on the deals negotiated with each party

More respondents found deals negotiated with investors 'balanced and fair' compared to the university/TTO

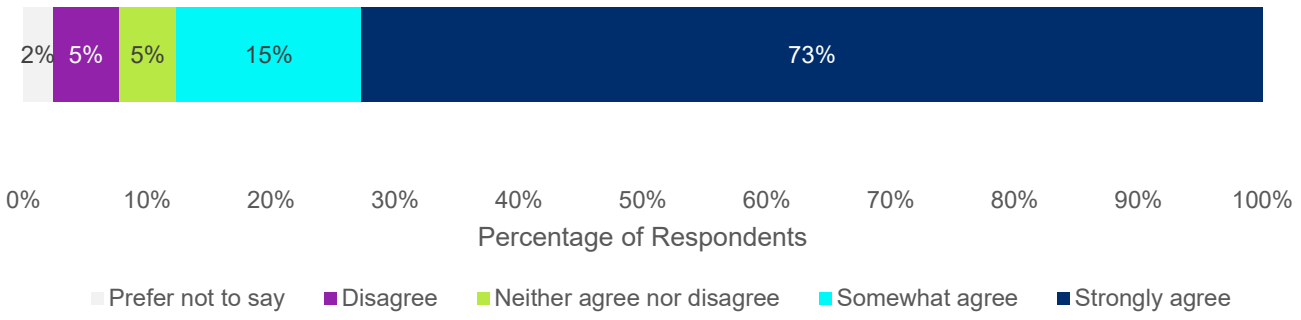


Note: Base = 542 respondents.

The survey asked respondents for their level of agreement with the following statement: 'while the spin-out process may be difficult, I am happy I pursued the opportunity'. Almost 90% agreed with the statement, with 73% selecting they 'strongly agree'. Only 5% disagreed with the statement, suggesting that founders found the process rewarding regardless of difficulties they may have had.

Figure 25. Founders' perception of the spin-out opportunity

Nearly all respondents were happy they pursued the opportunity to spin out



Note: Base = 542 respondents. Given low counts 'Somewhat disagree' and 'Strongly disagree' were combined to indicate 'Disagree'.

5.1 Main barriers and enablers of founding a spin-out

The survey included questions which allowed respondents to provide written detail on their experiences of founding a spin-out company. Founders were asked what the three biggest barriers and enablers were to getting the company off the ground and to scaling their company. The boxes below represent the most common themes that were mentioned across all three answers from founders. Respondents were not asked to rank their answers. Therefore, if a founder gave a particular barrier as their third answer this was weighted the same as if it were their first.

Support, finance and deal negotiation were the three most commonly cited barriers to getting the company off the ground. Some responses provided more detail than others so it was not always clear within each overarching barrier exactly what founders perceived the key issue to be. For finance, however, respondents highlighted 'finding investment' as a particular issue. For lack of support, the majority of founders reporting this referred specifically to a lack of support from their university, with some specifying the capability or capacity of the TTO. Negotiating the spin-out deal was another of the most commonly cited barriers with founders highlighting that agreeing terms were especially difficult, within this financial or legal terms were similarly highlighted as challenging.

Figure 26. What were the three biggest barriers to getting the company off the ground?

Support, finance and deal negotiation were the three barriers most commonly cited

Note: Base = 1,292 responses.

Finance, support and team were the most commonly reported enablers to getting the company off the ground. On types of support, university support was particularly highlighted by many founders. Having a wider network of support was also mentioned. For finance, private investment was more commonly mentioned than public grants as an enabler. A large number were, however, not specific around the type of finance. Factors related to the 'team' were also frequently mentioned, with responses mentioning the importance of leadership, attitude, and skills/expertise most commonly.

Figure 27. What were the three biggest enablers to getting the company off the ground?

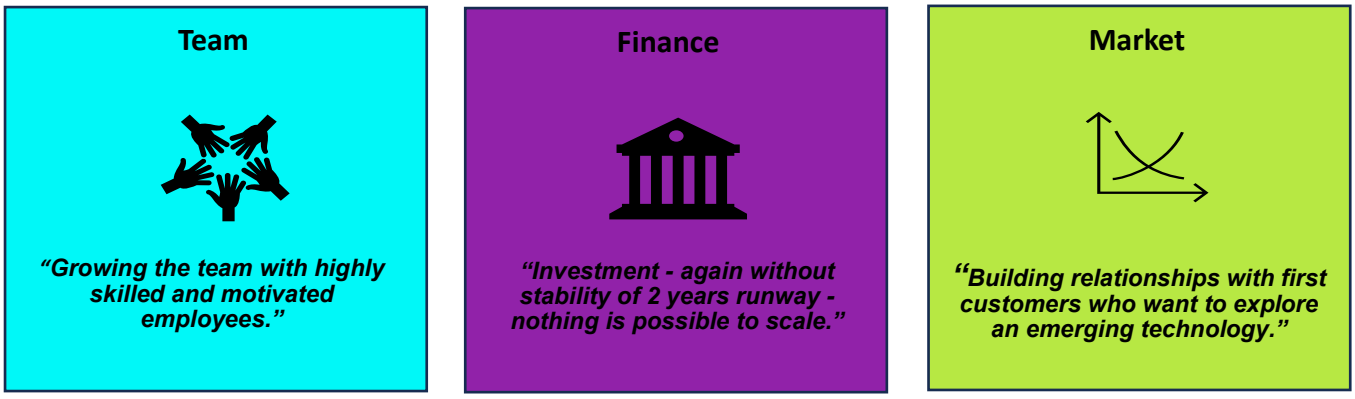
Finance, support and team were mentioned the most with regard to enabling the setting up of a spin-out

Note: Base = 1229 responses

Team, finance and market factors were highlighted as the largest issues in scaling spin outs. Many responses were vague around which aspect of finance was the most challenging, although 'accessing' finance was a commonly cited barrier. For 'team', many respondents cited recruitment of sufficiently talented workers a particular barrier. A lack of skills and expertise within the existing workforce was also substantial, along with capable leadership. With barriers relating to the market, a variety of issues were cited, for example market instability, regulation, competition and supply chain, although securing demand appeared to be one of the more commonly reported market barriers.

Figure 28. What were the three biggest barriers to scaling your company?

Finance also was the most reported barrier to scaling a spin-out



Note: Base = 1036 responses

6 Deal Terms

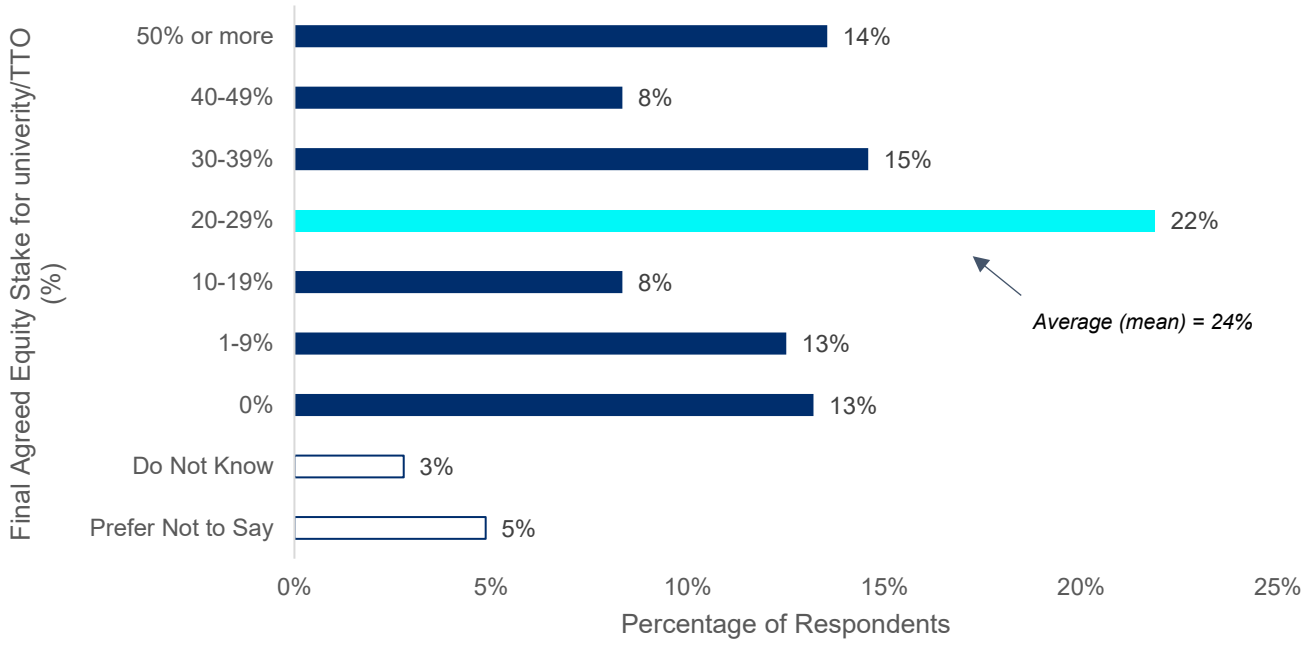
Respondents were asked if they had additional time to provide details on financial aspects of their spin-out. 297 respondents provided details on the terms of their deals and subsequent firm characteristics, representing just under half (48%) of the valid responses. Multiple founders from the same spin-out could submit a response so there may be some double counting and the percentages are not representative findings.

6.1 Equity stakes

Respondents were asked to provide details on the percentage of their company the university/TTO they spun-out from owned upon founding, before any investment was raised or option pools agreed. 20-29% was the most common response with 22% of spin-outs reporting figures within this range, and the mean was found to be 24%. This aligns with Beauhurst's 'Spotlight on Spinouts 2023' report, which highlights the average stake taken by universities was 23.9% between 2013 and 2022[7]. Notably, 13% of founders reported that no ('0%') equity was owned by the University/TTO upon founding.

Figure 29. Equity stake owned by the university/TTO upon foundation of the company

Around a quarter of the average spin-out was owned by the university/TTO upon foundation



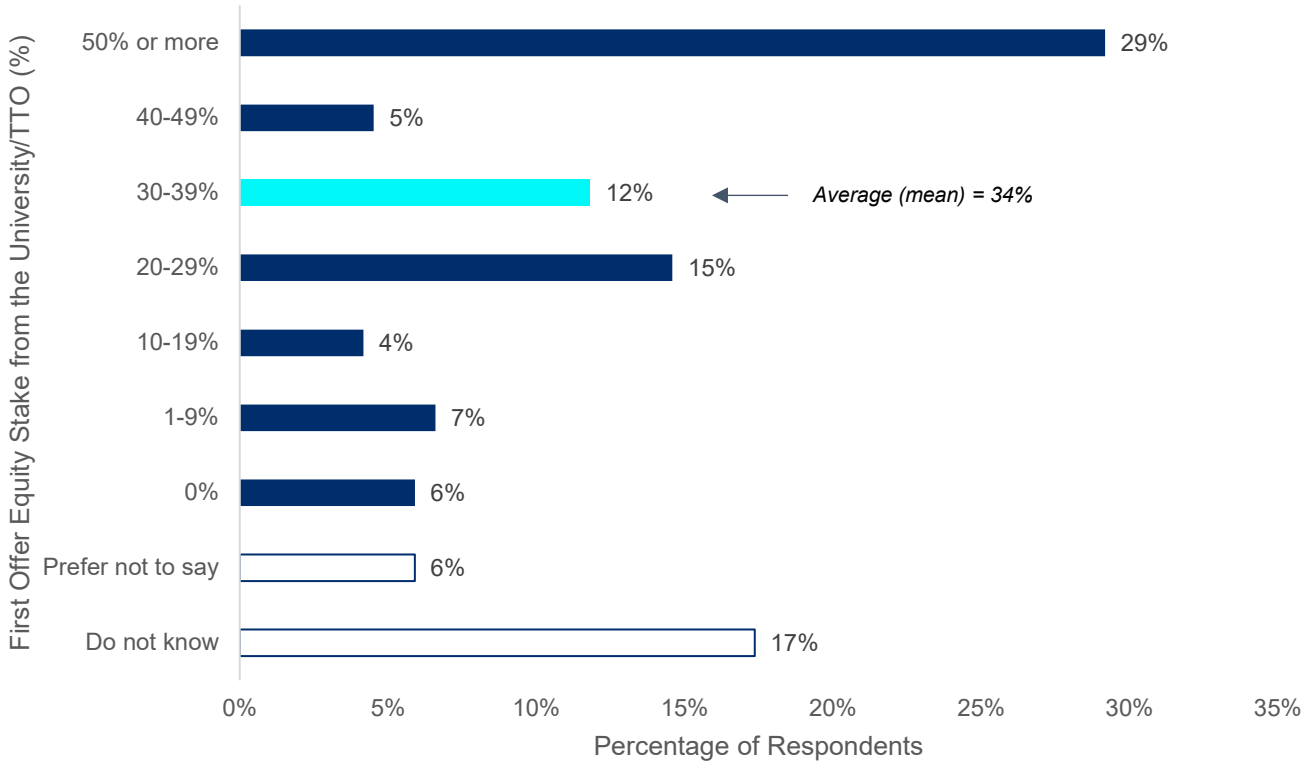
Note: Base = 288 respondents. A small number of anomalous results were excluded.

[7] Beauhurst (2023). *Spotlight on Spinouts*, May 2023. https://www.beauhurst.com/research/spotlight-spinouts-2023/

Figure 28. displays the first offer of percentage ownership by universities/TTOs. The average (mean) offer was 34% ownership, 10 percentage points higher than the mean final agreed stake. Almost a third of spin-outs reported a first equity offer of 50% or higher, showing almost a third of universities did not initially offer founders majority ownership of the company as an opening bid.

Figure 30. First offer of equity stake ownership by the university/TTO

Almost a third of spin-outs' universities opened equity negotiations at 50% or more



Note: Base = 288 respondents. A small number of anomalous results were excluded due to concerns over the quality of data.

Table 3 demonstrates the difference between first offer and final agreed equity stakes. The majority of founders reported their final agreed stake was equal to the first offer from the university (53%).

Table 3. Summary of equity first offer vs final agreed stake for those reporting both values

It was most common for the first equity stake offer from the university to equal the final agreed stake

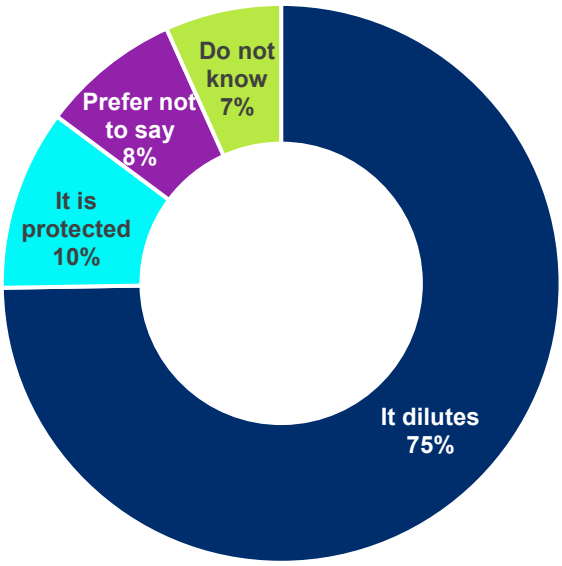
	First offer greater than final agreed	First offer equal to final agreed
Count	102	115
Percentage	47%	53%

Note: Base = 217 respondents. This only included responses reporting both figures.

Three quarters of respondents reported that the percentage of equity held by the university/TTO dilutes alongside the spin-out (75%). This is a substantially greater proportion than those who reported the equity is protected (10%).

Figure 31. Whether equity dilutes or is protected

Respondents more commonly reported that their equity diluted compared to stay protected



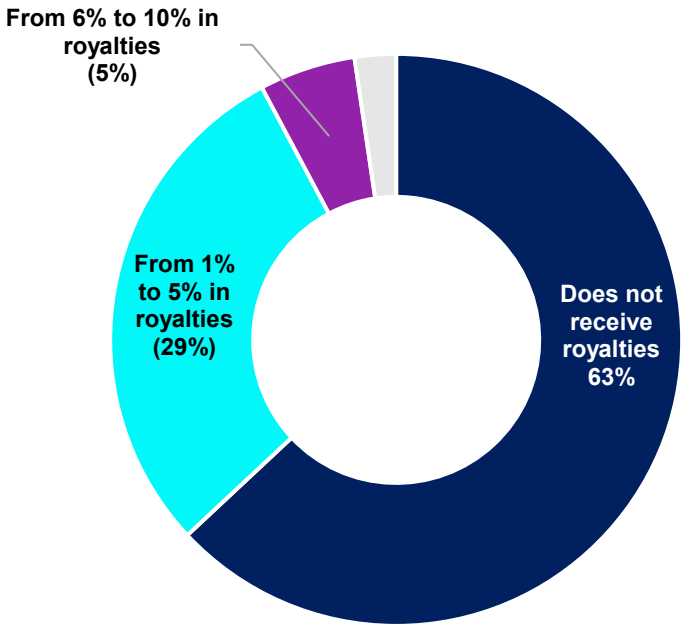
Note: Base = 297 respondents.

6.2 Royalties and Payments to Universities/TTOs

In the majority of spin-outs surveyed, their universities/TTOs do not receive royalties (63%). For those that do receive royalties (37%), the percentage was nearly always below 5%. 5% of founders reported that their universities received between 5% and 10% in royalties.

Figure 32. Percentage of net sales the university/TTO receives as royalties

Most university/TTOs of the spin-outs surveyed do not receive royalties

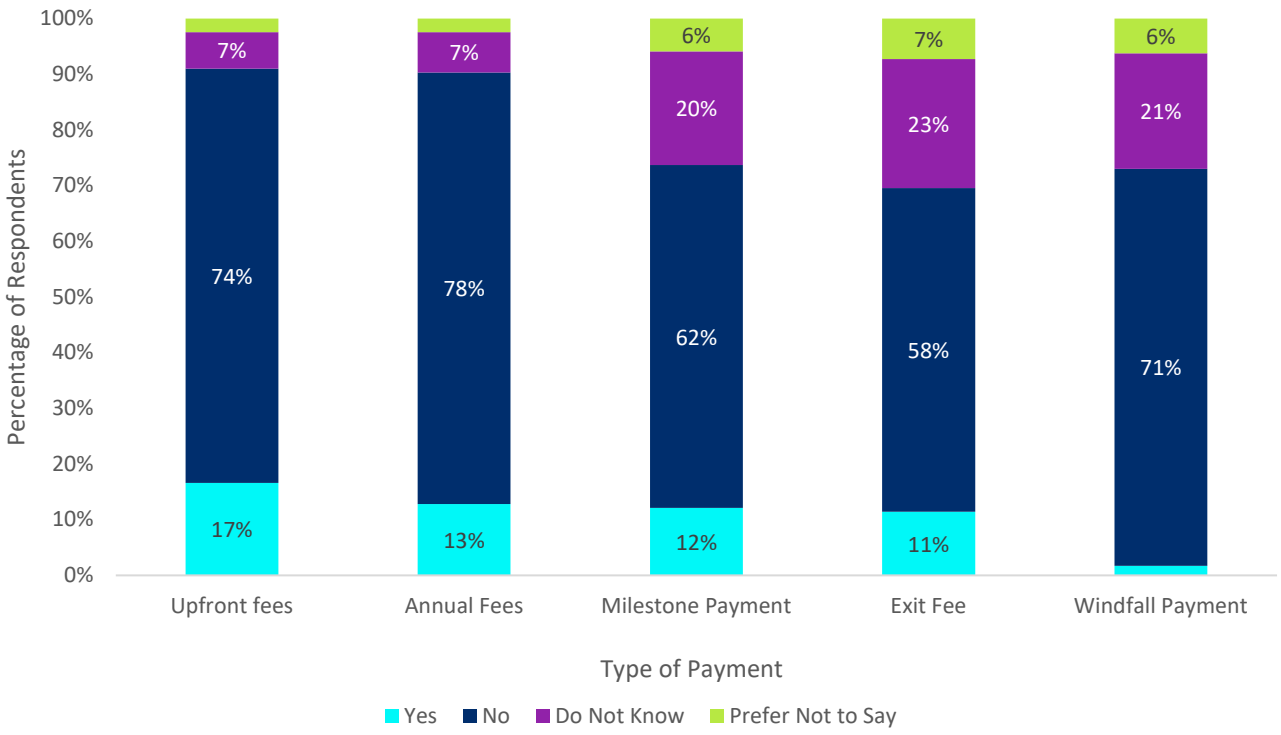


Note: Base = 257 respondents. A small percentage reported making royalty payments of more than 10% to the university (2%) and is not labelled.

Founders were asked if they made various payment types to the university. Figure 32 shows respondents generally did not. For example, only 2% of founders reported making windfall payments and under a fifth (17%) reported making upfront payments. It is worth noting that across some of these payments, around a quarter of founders were unsure if these were made or preferred not to say.

Figure 33. Types of payments made to the university/TTO

Fewer than one fifth of responses recorded making any of the payment types



Note: Base = 289. Only percentages over 2% are labelled.

Of those that did report making these type of payments, the aggregate sum of **Milestone payments** was the largest on average with a median value of £80k. It's worth noting however, that there was wide variation within the reported milestone payments (standard deviation > 6 million), so the mean average is heavily skewed. The maximum value (£36 million) impacts this as no other reported milestone payments were reported to be over 5 million.

Upfront fees were the next largest with a median value of £50k, ranging from £2k to £300k.

Other fees had the smallest average values with a median of £10k, although these are paid annually.

Table 4. Breakdown of payments made by spin-outs to the university/TTO, £

Wide variation exists in the value of responses for each payment type

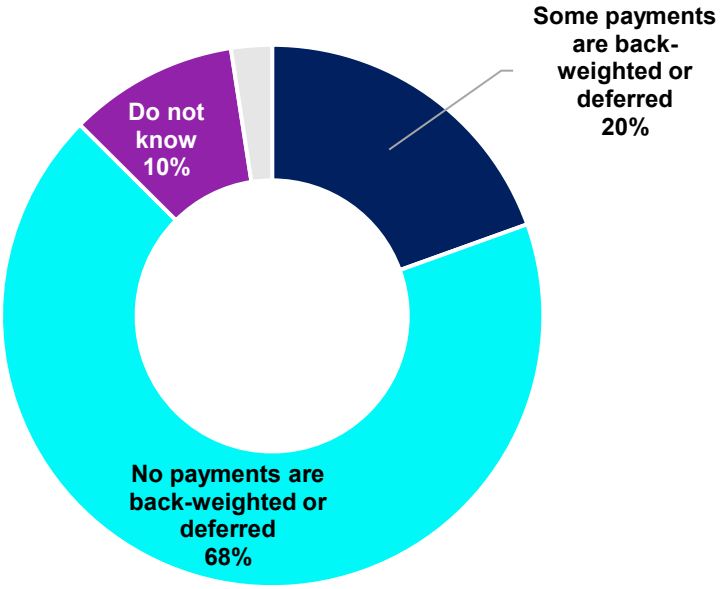
	Upfront Payments (e.g. signing fee)	Other annual fees (excluding upfronts/milestone payments)	Milestone payments (Aggregate Sum)
Percentage of spin-outs making payment (Count)	17% (48)	13% (37)	12% (35)
Eligible responses count*	41	32	32
Minimum	2,000	1,000	10,000
Maximum	300,000	50,000	36,000,000
Standard Deviation	63,814	12,112	6,364,035
Mean	52,764	12,022	1,561,772
Median	50,000	10,000	80,000

*Note: This table excludes a small number of anomalous figures (7 for upfront payments, 5 for other annual fees and 5 for milestone payments). *The count of eligible responses is lower than the number that reported making the payment as some anomalous results were excluded.*

Following these payment questions, founders were asked if any payments made to the university were back-weighted or deferred. Meaning, if payments were lower initially and larger in future. Most of the respondents reported that none of their payments are deferred or back-weighted (68%).

Figure 34. Deferred or back-weighted payments

The majority of founders reported that no payments are deferred or back-weighted

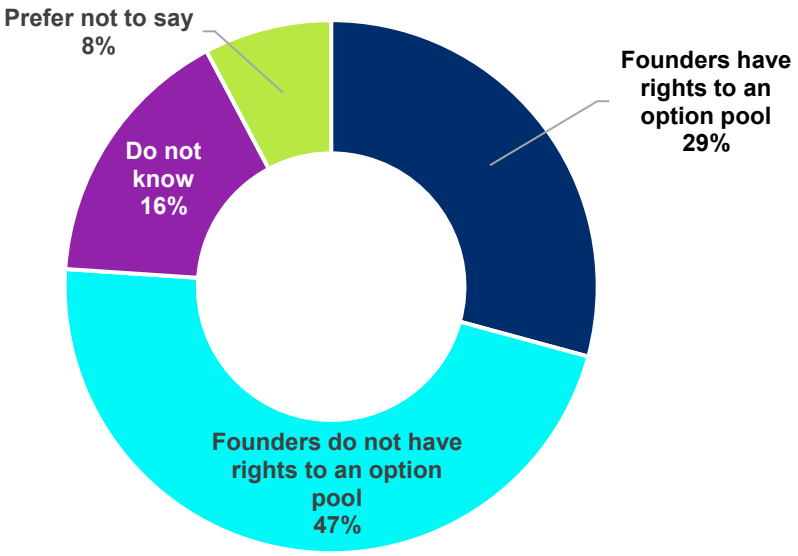


Note: Base = 287. A small percentage selected 'Prefer not to say' (2%) which is not labelled.

Founders were also asked if they had access to a set of shares designated for employees, known as an option pool. Just under a third of responses indicated they do have rights to this (29%). A higher proportion reported they do not have access (47%). However, care should be taken when interpreting these results as many selected 'Do not know' or 'Prefer not to say' (24%).

Figure 35. Founder Rights to Option Pool

Just under half of respondents do not have rights to an option pool

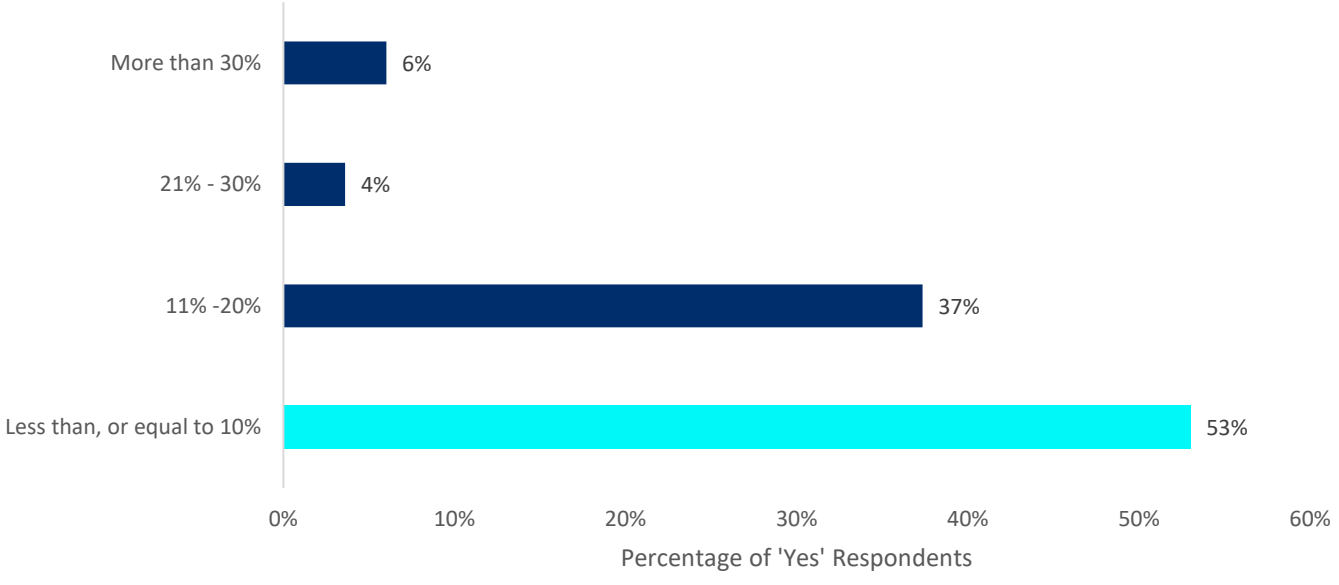


Note: Base = 287.

For respondents that reported having rights to an option pool, just over half reported the percentage share of the company they had access to was 10% or under (53%). 37% reported that the percentage share was between 11% and 20% (inclusive).

Figure 36. Percentage share of the company founders hold the right to if they reported access to an option pool

Most founders reported holding 10% or under



Note: Base = 83 respondents. Some responses were excluded due to anomalous results.

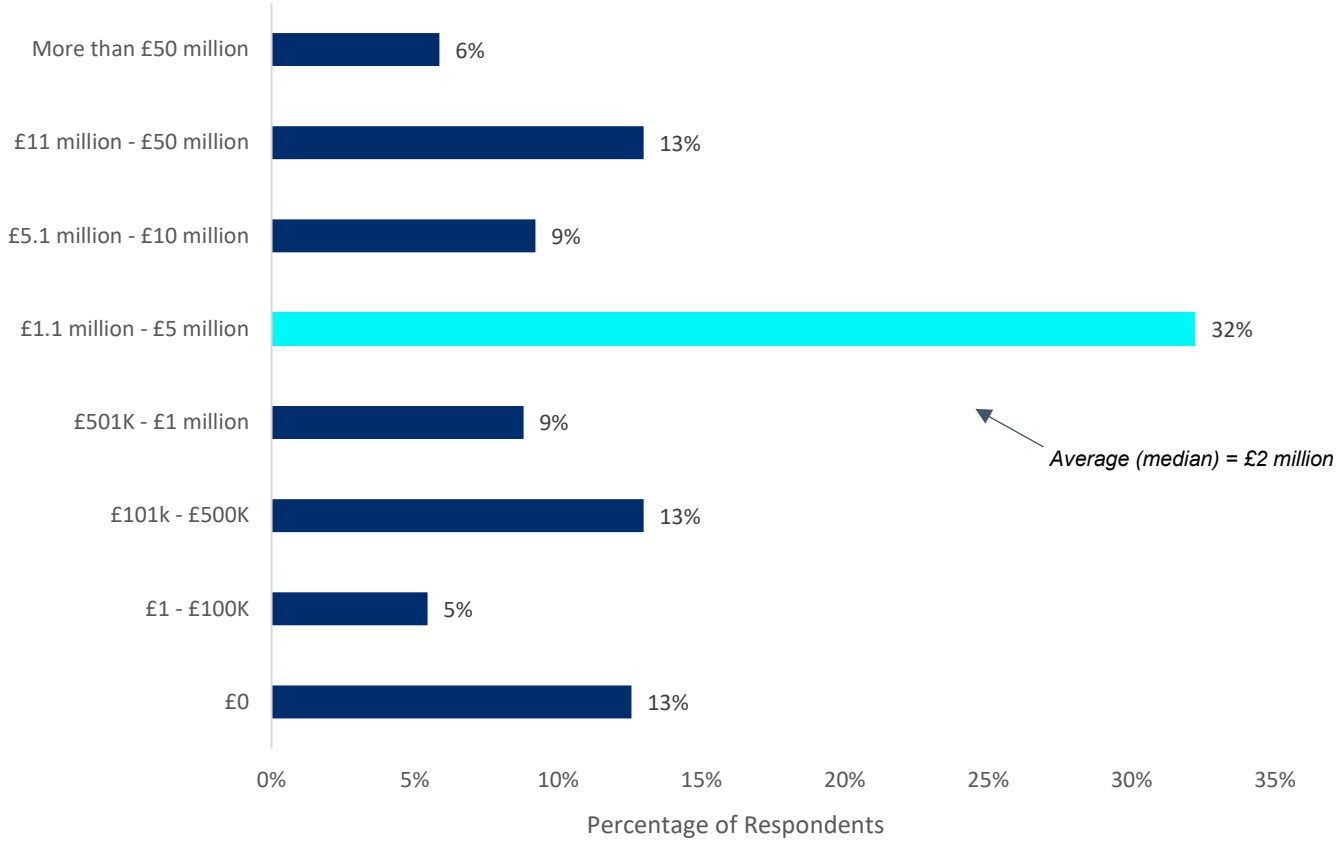
6.3 Investment raised by spin-outs

There was large variation in the reported investment raised by the founders. 13% of spin-outs reported £0 investment to date and 6% reported over £50 million. The median average income was £2 million, falling in the most common £1.1 million to £5 million range, although the standard deviation was over £27 million.

The mean investment raised was £11.6 million but this includes a number of outliers. According to the HE-BCI data for the 2014-2022 period, the mean external investment raised per spin-out was less than half this at £5.4 million. Note, annual figures for external investment are provided for each university only, and not for individual spin-outs.

Figure 37. Investment raised by business to date, £

The largest proportion of spin-outs raised between £1.1 million and £5 million



Note: Base = 239 respondents. Mean = £11.6 million. Median = £2 million. Standard Deviation = 27.7 million

Appendix 1: Methodology

1.1 Survey Methodology and Development

A list of all spin-outs in the UK does not exist so a representative or random sample survey was not possible. Therefore, it is difficult to determine the extent to which the responses received are representative of the spin-out population. However, the survey was distributed through a variety of channels for maximum reach. These channels included Beauhurst, Royal Society, Royal Academy of Engineering, UKRI, IPO, PraxisAuril, British Private Equity & Venture Capital Association (BVCA), Centre for Entrepreneurs and Bio-industry association.

The survey was jointly developed by DSIT and HMT policy advisors and analysts with input from the lead reviewers Professor Irene Tracey CBE and Dr Andrew Williamson and academic experts.

The survey was tested internally within DSIT and HMT which helped uncover any problems with the questions and identify improvements. Following this, the survey was piloted with a small number of university spin-out founders. The founders were asked to provide feedback and necessary amendments were made before the survey was launched.

The survey was launched on the 31st May 2023 and was open for seven weeks, closing on the 19th July 2023.

1.2 Eligibility for the Survey and Data Cleaning

The survey received over 750 responses. Following a data cleaning process, 620 valid responses remained. Details of this process are provided below.

For the purposes of this survey, DSIT and HMT were interested in the perspectives of both academic and non-academic spin-out founders, although the primary audience was executive leaders of spin-outs.[8] Respondents were first asked the question below to determine if they were eligible for the survey by identifying with one of the relevant founder types:

'Have you set up, or been involved in setting up, a spin-out based on research from a UK university? Note: Either using university-owned IP or where your university has some shared ownership. This includes spin-outs where IP from multiple institutions (both university and non-university) was included in the founding IP package:

- I am a founder of a spin-out based on academic research I did as a collaborator (with other inventors) whilst in a UK university.

[8] The survey also noted interest in founders who spun-out from other research organisations such as research institutes. Findings from these responses are not within the remit of this report.

- I am a founder of a spin-out based on academic research I did as the sole inventor whilst in a UK university.
- I am a founder who was not involved in the original IP generation at the university.

A small number selected the ‘Other’ option available for this question and described their role using text. Eligible respondents were identified manually and agreed upon by multiple policy advisors and analysts.

The data cleaning process involved removing cases with a high level of missing data. For this, cases were excluded if they had not answered questions beyond those detailing basic information such as the spin-out name and university they spun out from. Cases were also removed if answers were deemed to be false for example, containing nonsensical text.

The survey included an optional section with questions on equity, which respondents could complete if they had additional time available. There were 297 eligible responses to this section, representing 48% of the total.

Multiple founders from the same spin-out could respond to the survey, so there may be minimal double counting in some of the findings. It was suggested that if only one was to respond, this should be a former academic founder. Additionally, if respondents had founded multiple spin-outs, they were asked to complete the survey for one of these and note any substantial differences at the end of the survey.

1.3 Thematic analysis of free-text responses

To analyse free-text responses, qualitative, thematic analysis was conducted by identifying themes and sub-themes. The team initially coded and grouped responses independently before holding workshops to discuss the broad themes that had been identified within the answers to each question. A recoding process followed, where each response was assigned a theme and a code as decided upon in the workshop. For example, themes included, finance and support, and codes provided more specific breakdowns within these themes such as investment and university support. The team then undertook quality-assurance, exchanging samples of responses and recoding to ensure conclusions were the same. If there were any disagreements, a final discussion was held to assign a response under the appropriate theme.

Appendix 2: Survey Question Response Options

Table 5 outlines the full descriptions of support provided by the university/TTO for spin-outs referenced in Figures 19 and 20.

Table 5. Full descriptions of support type provided by the university/TTO for spin-outs

Support type provided by the university/TTO for spin-outs
Provision of financial support to help develop the technology and business (not seed equity investment)
Supporting the filing and managing of patents (including covering patent costs)
Access to facilities and equipment
Help setting up a company (including legal, finding premises, help with setting up and accessing key services such as banking, insurance accountancy etc.)
Developing the value proposition & business plan
My skills and capability development, e.g., training, advice, preparing to engage with investors
Finding and accessing investors
Helping secure public grants (for the spinout, not research)
Finding a management team / co-founders / initial recruitment
Finding development partners / suppliers
Enabling ongoing relationships with the university
No support beyond securing and licensing IP

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