Smart Grants Programme

Final Impact Evaluation
May 2026

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Acronyms glossary

Acronym	Definition
ABS	Annual Business Survey (ONS)
ASHE	Annual Survey of Hours and Earnings (ONS)
BEIS	Department for Business, Energy and Industrial Strategy
BERD	Business Enterprise Research and Development (ONS survey)
BSD	Business Structure Database (ONS)
CBA	Cost-Benefit Analysis
CGT Catapult	Cell and Gene Therapy Catapult
DBT	Department for Business and Trade
DPA	Data Protection Act 2018 (UK)
EU	European Union
GDP	Gross Domestic Product
GVA	Gross Value Added
HMG	HM Government
HMT	HM Treasury
IDBR	Inter-Departmental Business Register
IMD	Index of Multiple Deprivation
IPO	Initial Public Offering
IS-8	Industrial Strategy eight priority sectors (2025)
ISCF	Industrial Strategy Challenge Fund
IUK	Innovate UK
LLM	Large Language Model
LSOA	Lower Layer Super Output Area
MO	Monitoring Officer
NHS	National Health Service
OA	Output Area
ONS	Office for National Statistics
PAYE	Pay As You Earn
PV	Present Value
R&D	Research and Development
ROI	Return on Investment
RTO	Research and Technology Organisation
ROW	Rest of the World
2PO	Secondary Public Offering (SPO)
TRL	Technology Readiness Level
UK GDPR	UK General Data Protection Regulation
UKRI	UK Research and Innovation
US	United States (of America)
VAT	Value Added Tax
VC	Venture Capital

Executive Summary

In September 2024, Innovate UK commissioned Ipsos UK, alongside Technopolis and George Barrett, to conduct an impact evaluation of the Smart Grants programme to assess its impact and value for money. This final report set out the findings of evaluation.

Smart Grants programme

The Smart programme was originally launched in the 1980s and has been administered by Innovate UK from 2011. It provides grants to support SME-led R&D with a clear path to rapid commercialisation and scale-up. This evaluation covers the delivery of the programme between 2019/20 and 2024/25, over which period £531m was committed to 1,688 industrial R&D projects.

Awards predominantly went to very small firms - 51 percent were micro-businesses (fewer than 10 employees) and 20 percent were small businesses with 10 to 49 employees. Firms were also associated with low levels of turnover – 22 percent were operating on a pre-revenue basis and amongst revenue-generating firms, over half reported annual sales of less than £2m per annum. The innovations under development were also generally at early stages of development – 61 percent of projects were at or below proof-of-concept stage (TRL3).

Methodology

The evaluation was conducted using a mixed methods approach. Quantitative and qualitative research with applicants for funding were used to understand the progress made in commercialising and scaling innovations. Estimates of the quantitative impact of the programme were derived from a programme of econometric analysis on the fundraising and growth trajectories of firms awarded funding and a variety of comparator groups, which fed into a cost-benefit analysis examining the relationship between the productivity gains brought about by the programme and its social costs.

Key findings and conclusions

The Smart Grants programme delivered against all its stated objectives over the 2019/20 to 2024/25 period including promoting rapid commercialisation, the scale-up of companies, and entry to international markets. The results of the evaluation showed that:

Generating a positive return for the UK economy

Smart grants produced a positive impact on R&D activity – leading to an average net increase in annual R&D spending of 7 percent and R&D employment by 5 percent amongst firms awarded funding. These effects were confined to the UK, with no evidence of leakage overseas. These inputs and the associated de-risking and the acceleration of the technical maturity of high potential innovations translated into significant economic benefits.

Commercialisation

One quarter (25 percent) of projects had commercialised the innovation forming the focus of the Smart Grant by September 2025. Smart grants were estimated to have led, on average, to a 6 percent increase in annual turnover (on average) that would not have occurred in the absence of the programme. Commercialisation appears to have been achieved more rapidly than is the case with many other Innovate UK programmes.

Employment and GVA impacts

The scale-up of firms awarded grants were also associated with the creation of high skilled jobs and economic growth outcomes. It was estimated that the programme led to creation (or safeguarding) of almost 5,000 jobs over the period. 17 percent of companies were scale-ups from SME to large firms, while many others experienced episodes of high growth. The programme also increased the output of firms (GVA) by 4 percent, with a total impact of GVA of £820m by the end 2024/25 – projected to rise to £1.8bn by the end of 2032/33.

Productivity gains

The programme was found to have produced wider productivity gains for the UK economy through both raising the efficiency of firms awarded funding and creating opportunities for workers to be deployed in more productive roles. Smart grants increased the GVA per worker of firms awarded grants by 2.3 percent, while the jobs created were associated with a wage premium of over £11,000 per annum. The total productivity gains associated with the programme were estimated at £610m by the end of 2024/25, projected to rise to £1.6bn by the end of 2032/33.

Leverage of private investment:

The programme met or exceeded objectives related to firm growth and private investment. Firms awarded grants raised £3.6bn of equity following their award (by the end of 2024), and the Business Case target of 20 percent of funded companies securing private investment within five years of completion was exceeded. The evaluation indicated that between £298m and £358m of the investment raised would not been secured in the absence of the programme – with the credibility afforded by the programme noted as an important factor in firms' ability to leverage additional follow-on funding.

International expansion

The programme supported international growth and market access. A quarter of funded projects reported commercialisation, rising to 62 percent of completed projects. Among those generating revenues, around 65 percent of sales were in international markets, and 24 percent of funded firms entered export markets for the first time post-award.

Inclusive innovation

Geographically, funding was broadly neutral by deprivation decile (England), suggesting Smart has neither widened nor narrowed disparities in aggregate. Case studies also point to wider social and environmental benefits - e.g. lower-footprint critical mineral extraction, biodegradable packaging resins, and NHS productivity tools.

Overall, the programme achieved strong value for money. Grants were associated with a high level of additionality – with public funding 'crowding-in' additional R&D investment beyond the lifetime of projects. Each £1 of public funding was estimated to have led £1.58 in additional private sector R&D spending by the end of 2024/25 (projected to rise to £2.65 by 2032/33). The economic benefits of the programme also substantially exceeded its costs – producing £1.27 of productivity gains per £1 of social cost by the end of 2024/25 which is projected to rise to £2.65 by the end of 2032/33).

The programme remains strategically relevant and complementary to the UK's current policy landscape. Although response-mode by design, the Smart Grants programme has financed innovations that map closely to the 2025 Industrial Strategy's sector focus and the 2022 Innovation Strategy's priority technology

areas. The programme also stands apart from other Innovate UK programmes – particularly in its ability to rapidly convert R&D into commercial revenues, exports, firm growth and productivity gains.

1 Introduction

Ipsos UK, Technopolis and George Barrett were commissioned by Innovate UK in September 2024 to undertake an impact evaluation of the Smart Grants programme. This final report presents the findings.

1.1 Evaluation aims and objectives

The aims of the evaluation (as specified in the Invitation to Tender) were to:

- Assess the impacts of Smart Grants on recipient firms and the UK economy
- Inform policy and strategy decisions regarding the programme
- Assess the value for money (VFM) associated with Smart Grants

The Smart Grants programme was originally launched in the 1980s and has been administered by Innovate UK since 2011. This evaluation focuses on the Smart Grants programme in its most recent form (at the time of writing), covering funding provided through the period 2019/20 to 2024/25.

1.2 Smart Grants programme

The Smart programme – originally launched in the 1980s and administered by Innovate UK from 2011 – is a long-running scheme that provides grants to help match-fund the R&D activities of SMEs on an open, response-mode basis. Innovate UK's Business Case prepared in 2019 set out the following objectives for the iteration of the programme covered by this evaluation:

- Generate a positive return for the UK economy through increased and improved SME R&D activity converting into positive GVA effects
- Increased growth of innovative UK companies at home and in international markets
- Inclusive innovation resulting in a higher chance of commercial success and delivering benefits to all parts of society
- 20 percent of funded companies to secure private investment within five years of the completion of the grant to advance their business and scale-up
- More companies accessing new markets and better positioning in the global supply chains of the future

Between 2019/20 and 2024/25, 1,688 projects were awarded a total of £531m of public funding through the programme.

1.3 Evaluation questions

The key evaluation questions to be addressed by the study (as defined in the Invitation to Tender) are set out below, grouped by theme.

Support and business development

- What are the perceived barriers faced by Small and Medium Enterprises (SMEs) in accessing and benefiting from the programme?
- To what extent, and how, do applicants to the Smart programme have greater success in applying for future funding following the feedback they received as part of the Smart application process?
- What is the maturity of organisations applying to and being awarded Smart Grants?
- What types of business support (e.g., financial, advisory, networking) are most valued by Smart beneficiaries?
- What are the gaps in business support that the programme could address in the future?
- Are there differences in outcomes for sole applicants versus those that collaborate with others in the Smart programme, and what are the perceived effects of collaboration?
- To what extent is the wider research base having an effect on Smart Grants and their outcomes?

Economic impact

- To what extent, and how, does the Smart programme contribute to the development of new products, services, or processes in businesses?
- To what extent, and how, has the Smart programme contributed to the economic performance of its beneficiaries (e.g. turnover, GVA, firm value, exports)?
- To what extent has the programme directly enabled further R&D and innovation investment including capital investments?
- To what extent, and how, has the programme had an effect on job creation in the sectors it supports?
- To what extent, and how, has the programme influenced the level of innovation in the UK?
- To what extent, and how, has the programme facilitated the commercialisation of new technologies or services within the UK and global markets?
- What is the geographical spread of the economic effects realised by the programme?
- To what extent are any economic effects realised in SMEs or large businesses?

Value for money

- What is the return on investment (ROI) of the Smart programme for the UK government and taxpayers?
- Are there any indirect benefits, such as environmental or social impacts, that have resulted from the Smart programme?
- How does the programme influence business strategies and decision-making in the short and long term?

- How has the programme supported businesses across different stages of innovation, from idea feasibility to development and prototyping?
- What are the qualitative aspects of the programme's impact, such as the development of new industry standards, collaboration networks, or knowledge spillovers?
- To what extent, and how, has the programme had an effect on skill gaps and created employment across strategically important technologies?
- How long- or short-term are the outcomes of the Smart programme? How sustainable are the innovations and business growth stimulated by the programme in the long run?
- To what extent do projects funded by Smart go on to secure further public funding, and what are the types of interventions that they go on to receive support from (e.g. grants, loans, additional Smart grants)?
- Does project duration influence route to market or commercialisation timelines?
- To what extent do estimates of outcomes of Smart projects capture the total effect of the programme? How much of this effect is offset by lower or negative returns on riskier projects?
- To what extent do the outcomes of Smart Grants differ, given their initial assessment grade (does the quality line influence deadweight or overall effect)?

1.4 Methodology

The impact evaluation involved a mixed methods approach including a range of primary and secondary data collection and analysis.

Evaluation plan

The project plan began with the development and refinement of the evaluation plan and methodology. This was underpinned by a review of programme documentation and consultations with Innovate UK officials to develop a Theory of Change for the Smart Grants programme. This set out the process through which the programme was expected to deliver its intended outputs, outcomes, and impacts, and provided the overall guiding framework for the evaluation. This stage was also used to develop and refine the methodology for the evaluation, culminating in the agreement of the evaluation plan in April 2025.

Monitoring data analysis

The evaluation was informed by an analysis of the available monitoring information covering the project portfolio and expenditure of public funds over the period. This analysis also incorporated AI-assisted analysis of grant abstracts provided by applicants focused on establishing how far each project aligned with the sectoral priorities set out in HM Government's 2025 Industrial Strategy. This involved the development of a prompt to assign each project (where relevant and where sufficient information was provided in the grant abstract) to the eight priority sectors set out in the Industrial Strategy (IS-8). The prompts and outputs of the AI-assisted analysis were subject to a manual quality assurance process and shared with Innovate UK for transparency and to aid replication.

Telephone survey of applicants for Smart Grants

Quantitative evidence in relation to the results of funded projects – including details of technical progression, investment leveraged, and commercialisation outcomes – was collected through a telephone survey of applicants for funding. The survey was delivered using Computer Assisted Telephone Interviewing techniques from 4 September 2025 to 31 October 2025. The survey captured responses from 399 firms that were awarded funding and 418 firms that submitted applications that were declined (providing a comparison group to infer what outcomes may have transpired in the absence of the programme). The survey sample was skewed towards more recent applicants, and the findings of the survey were weighted to align with the overall distribution of applicants over time.

It should be noted that analysis of ONS datasets indicated that 35 percent of funded firms and 31 percent of declined applicants had ceased trading at the time of the survey. As such, the findings of the survey may be associated with a degree of 'survivorship bias' as it was more challenging to engage these firms in the research. As a result, survey findings may overestimate the extent of positive outcomes achieved (e.g. technical progress, commercialisation, investment and growth) and may underestimate the prevalence of negative outcomes, or the extent to which participants experienced barriers or failures. However, possible non-response bias will affect both results in relation to firms awarded funding and declined applicants.

Case studies

Qualitative research to obtain more detailed insight into the outputs, outcomes and impacts of the programme was gathered through 21 case studies with firms that had received grant funding. The case studies involved depth research with project managers and founders responsible for each firm's involvement in the delivery of funded projects, alongside a review of project documentation (including application forms and project delivery documents developed as part of the monitoring process). The case studies were selected from the population of firms that agreed to participate in follow-up research as part of the telephone survey. A purposive approach to sampling was adopted seeking to obtain a broadly representative distribution of cases across differing levels of commercial success – including cases of global and domestic commercial success, firms attracting significant levels of external investment, and firms that had experienced barriers to progressing or commercialising their innovation following the completion of the project.

Depth interviews with stakeholders

Further depth research was undertaken with eight stakeholders either involved in the delivery of the Smart Grants programme or with a wider knowledge of the UK ecosystem of support for innovation activities. These interviews were used to help place the findings of the evaluation in context and obtain broader views of the wider impacts of the programme.

Econometric analysis

Estimates of the impacts of the programme were obtained from a programme of econometric analyses driven by secondary datasets providing complete or partial coverage of the population of firms applying to the Smart Grants programme between 2019/20 and 2024/25. Longitudinal data on a wide range of outcomes of interest – as set out in the following table – was obtained by linking the Companies House Reference Number (CRN) to the PitchBook data platform and the Inter-Departmental Business Register (IDBR), facilitating linking to a range of ONS held datasets and surveys. The impacts of the programme were estimated by using staggered difference-in-differences models to compare the performance of firms awarded grants to a variety of comparison groups. This included 'high scoring' declined applicants that

achieved a score of 70 in the Independent Assessment process and a 'pipeline' design in which firms awarded funding in earlier years were compared to those awarded funding in later years. Full technical details of the analysis are set out in the Technical Appendix.

Table 1.1: Secondary datasets matched in econometric analysis

Dataset	Coverage	Variables
Business Enterprise Research and Development (BERD) – an annual ONS survey of known 'R&D performers' and a sample survey of other firms in the economy. The survey is used to estimate the overall level of R&D activity in the UK economy.	2015-2023	R&D investment, R&D employment
Annual Business Survey (ABS) – an annual ONS survey of businesses used to support the development of GDP estimates and other national accounting measures. The survey is a mandatory census of large companies and a sample survey of SMEs, with a sample size of around 50,000 businesses. The survey provided firm level observations of economic output (GVA), productivity (GVA per worker) and the value of annual export sales.	2015-2022	Gross Value Added (GVA), productivity (GVA per worker), value of export sales
Business Structure Database (BSD) - an annual snapshot of the IDBR, a live database of all firms registered for PAYE or VAT (covering 99 percent of economic activity in the UK). The data provided annual measures of turnover and employment.	2015-2023	Turnover, employment, turnover per worker
Annual Survey of Hours and Earnings (ASHE) – an annual ONS survey of the hours and earnings of employed workers in the UK economy. The survey provided worker level observations of the hourly earnings of a sample of workers employed by firms applying for Smart Grants, giving an alternative measure of the productivity gains arising from the programme as well as insights into the quality of jobs created.	2015-2023	Hourly earnings
PitchBook - the PitchBook data platform compiles records of disclosed investments in innovative companies – including investments by angels and high net worth individuals, venture capital funds, private equity funds, other private fundraising mechanisms (such as equity crowdfunding), and fundraising on public capital markets. The data is considered close to comprehensive for investments of reasonable values (though key details, such as the value of the investment are not always disclosed by investors or investees) but may omit some smaller investments by individuals.	2015-2024	Equity investment raised

Cost-benefit analysis

The results of the impact evaluation fed into a cost-benefit analysis of the programme. This focused on providing an assessment of the relationship between the economic benefits of the programme (in the form of productivity gains) and its social costs (i.e. the additional R&D investment induced by the programme).

1.5 Structure of the report

The remainder of the report is structured as follows:

- Section 2 sets out an overview of the Smart Grants programme and the Theory of Change for the programme
- Section 3 details the portfolio of projects funded by the programme
- Section 4 presents the findings of the outcomes achieved by the programme
- Section 5 presents the findings of the economic impacts achieved by the programme
- Section 6 presents the assessment of the Value for Money of the programme
- Section 7 presents the conclusions of the evaluation

2 Smart Grants

This section provides an overview of the Smart Grants programme. It sets out the programme's objectives and rationale and presents a Theory of Change describing how its activities were intended to deliver the expected outputs, outcomes and subsequent impacts. This section is an abridged version of the evaluation framework agreed as part of the development of the Evaluation Plan, agreed with Innovate UK in April 2025.

2.1 Programme objectives

The objectives of the Smart Grants programme are set out in the Business Case for the programme developed by Innovate UK:

- Generate a positive return for the UK economy through increased and improved SME R&D activity converting into positive GVA effects
- Increased growth of innovative UK companies at home and in international markets
- Inclusive innovation resulting in a higher chance of commercial success and delivering benefits to all parts of society
- 20 percent of funded companies to secure private investment within five years of the completion of the grant to advance their business and scale up
- More companies accessing new markets and better positioning in the global supply chains of the future

The programme is delivered on an open, response-mode basis and compared with some other Innovate UK initiatives, places greater emphasis on rapid commercialisation and scale-up.

2.2 Rationale

Innovative SMEs are key engines of long-run productivity growth but face structural financing barriers. These businesses tend to be R&D-intensive and often pre-revenue, making them reliant on external equity to finance their activities. However, there are several persistent market and system failures that lead to socially suboptimal investment in early-stage, high-risk R&D by innovative SMEs and result in economic costs where these businesses fail to develop and scale effectively. These market failures include:

Information asymmetries

Early-stage innovation entails high technical and commercial uncertainty. Innovators typically have an information advantage over investors – with superior information on technical feasibility and market prospects of their innovations. This makes it harder and costlier for investors to assess and price risk.

Funding gaps

These information issues can be overcome through due diligence. However, as the costs involved do not vary significantly with the size of the investment being made, smaller investments are often less viable for venture capital investors. This creates a funding gap for many innovative SMEs at early, pre-revenue stages, and is particularly acute for R&D-intensive SMEs pursuing disruptive technologies.

Positive externalities and public goods

Investments in innovation also have the potential to generate positive externalities in the form of the creation of highly skilled jobs, knowledge spillovers, as well as social and environmental benefits arising from the adoption of new innovations. As these benefits cannot be fully internalised by firms, this reduces incentives to invest in R&D and holds levels of R&D investment at suboptimal levels.

Coordination challenges

Early-stage innovators often lack complementary assets (e.g. partnerships, supply-chain validation, or alignment with regulatory standards) that can delay the commercialisation of new innovations. Targeted grants can help to catalyse collaboration and reduce coordination failures that delay diffusion and commercialisation.

The Smart Grants programme aims to address these market failures by providing grants for the R&D activities of SMEs that can demonstrate a pathway to rapid commercialisation and scale up – helping to de-risk projects and crowd in private investment.

2.3 Theory of change

The following subsections present the inputs, outputs, outcomes and social and economic impacts anticipated by the programme.

2.3.1 Inputs

Delivery of the programme draws on the following inputs:

Competition administration

Innovate UK incurred a range of administrative costs in delivering the programme – including management and promotion of funding competitions, organising the Independent Assessment and award process, monitoring the delivery of funded projects and provision of additional support such as Innovate UK Business Growth support.

Grant funding for R&D projects

The principal cost to the public sector associated with the Smart Grants programme is the value of grants awarded to businesses to support the delivery of R&D projects. Between 2019/20 and 2024/25, Innovate UK committed £531m in grants to 1,688 business-led R&D projects through the programme.

Other inputs from applicants

Firms awarded funding are also required to match public sector financial contributions with their own resources. Firms may also bring other non-monetary and intangible inputs in the form of knowledge embedded in the project team members or foreground IP developed before the project began.

2.3.2 Activities

The inputs above were used to deliver a range of activities, which can be broadly split across internal activities (processes implemented by Innovate UK to commit resources and monitor delivery) and external activities (activities completed by recipients of grant funding to execute the work programme defined in the application for grant funding).

Internal activities (Innovate UK-led)

Awareness-raising and application support

Innovate UK Programme Leads and their teams worked with communications teams and UK Research and Innovation (UKRI) to undertake awareness-raising activities for the Smart Grants programme. Innovate UK staff also provided support to applicants for queries and provision of additional support such as Innovate UK Business Growth support.

Management and delivery of R&D funding

Grants were allocated through a competitive process. The Innovate UK core programme team managed the design and delivery of the intervention. Applications were assessed on their commercial, technical, and economic merits by a panel of up to five independent assessors, with awards generally made to the highest scoring applications. After the receipt of a conditional award, successful applicants completed a due diligence process to confirm the applicant had sufficient match funding to meet their own commitments to the programme, confirm eligible costs, and ensure all R&D activities would be completed within the UK.

Monitoring

Each successful applicant was assigned a Monitoring Officer (MO) who agreed a framework for monitoring the ongoing delivery of the project against its original delivery plan (Level 2 Plan) in terms of scope, time, cost, exploitation, risk management and project planning.

External activities (Applicant-led)

Application preparation

Applicants were required to complete an application form covering the aims and objectives of the project; the problem the technology seeks to address; deliverables and added value; business planning and resources; and work plan and costs.

Delivery of R&D activities

Delivery of project proposals involved the delivery of a technical work programme of testing and refining the technology or innovation under development in increasingly realistic environments. The nature of these activities would vary across technology areas and would depend on the starting point of development. Projects could also include business model development activities, such as market validation activities or user testing, to examine the commercial viability of the innovation under development and optimise the route to market.

2.3.3 Outputs

The internal and external activities delivered under the programme can be expected to generate a series of short-term outputs.

Project innovation outputs

As part of delivering the work programme, grant recipients produced a set of research outputs that could be used to progress the technology further, either through additional technical development or commercial exploitation. Depending on the stage of development or technology area, these outputs vary and could include academic papers, design specifications, technical demonstrators, physical or software prototypes, or marketable products.

Market engagement

Some projects involved activities that are better described as 'market research' or 'business model development' involving the development of links with new customers, investors, suppliers or partners to develop or refine the underlying value proposition, optimal commercialisation route, or business model.

New or deepened collaborative relationships

Although the programme does not require projects to involve collaborations, the availability of subsidies might be expected to have resolved some of the technical frictions preventing the formation of collaborative relationships. As such, it may be reasonable to expect grant funding to have encouraged new relationships to form between firms, academic institutions or Research and Technology Organisations (RTOs). Collaborative relationships may also have been formed outside the parameters of the funded project.

2.3.4 Outcomes

The Smart Grants programme is expected to provide the following types of outcomes:

R&D spending and employment

If the resource allocation process is effective in directing resources to projects that would not have been taken forward by the private sector anyway, then grants would be expected to result in a higher level of R&D activity as funded applicants take forward the project forming the focus of their proposal. This would be visible in higher levels of R&D expenditure and employment. As the grant conditions require R&D activity under the scope of the project to take place in the UK, it would be anticipated that these effects would predominantly benefit the UK (though firms may later expand their activities overseas as they scale their businesses).

Technological progress

Increased levels of R&D spending can be expected to accelerate progress along the development pathway. A key assumption is that challenges encountered during delivery are overcome, though in some cases the project may result in technologies that are not suitable for further development or commercial exploitation. This may still have benefits through avoiding abortive R&D efforts and/or highlighting avenues of further research.

Accumulation of knowledge or skills

The delivery of R&D projects will result in the production of new knowledge that may take tacit form (i.e. know-how amongst the project team) or documented in more formal knowledge. Workers involved in project delivery may also acquire other skills that facilitate the commercialisation of innovations – such as capabilities in project management, investor engagement, or market research.

Refinements to business models

Market validation activities and other engagement with partners, suppliers or potential customers have the potential to improve commercialisation prospects by enabling firms to refine their business models, provide clarity on the optimal route to market, and in some cases encourage firms to pivot from commercialisation strategies that were less likely to be effective.

Leverage of follow-on funding

Refinements of the technology and the associated business model will help de-risk the innovation from the point of view of external investors – helping firms to secure additional follow-on investment to continue the development of the project. There may also be 'halo effects' where Innovate UK funding is seen as a 'quality mark' by other investors. Funding may come from a variety of sources – such as internal resources, equity investment from venture capital or corporate venture funds, licensing the Intellectual Property (IP) developed through the project to other organisations, or by attracting other public sector funds.

Exploitation of innovations

Some grant recipients may be able to consider commercial exploitation of research outputs on completion of their projects. Several options are available to projects which involve varying levels of resource inputs. The technology may be marketed directly by a grant recipient through the launch of new or improved products or services or brought to market indirectly by licensing the IP to another firm (acquisition routes via a large firm are also plausible).

2.3.5 Direct impacts

The longer-term direct economic impacts of awards made through the Smart Grants programme include:

Firm expansion (turnover, GVA, and employment)

Successful exploitation of the intellectual property developed with the support of the programme will be visible in an expansion of the firm in terms of its turnover (including export sales), output (GVA), and employment. These types of effect would be particularly likely to be significant amongst those launching a new product or service.

Productivity gains

Successful exploitation of IP will also potentially result in gains in productivity - resulting from firms being able to serve their customers at lower costs and/or being able to attain higher prices for their products or services. It is also anticipated that the expansion of firms will result in highly skilled job opportunities, producing further economic benefits if workers can be redeployed into more productive roles.

Displacement and crowding out

The expansion of firms receiving grants from Innovate UK will potentially result in offsetting effects for other firms in the economy. Firstly, if firms expand their sales, this may come at the expense of the market share of domestic competitors (product market displacement effects). However, even where sales growth has primarily displaced those of overseas producers, the growth in demand for workers and other inputs to meet additional demand will place pressure on wages and prices. In turn, this will lead to offsetting effects as other firms reduce their employment and output in response.

2.3.6 Indirect impacts

Smart Grants are also expected to have indirect impacts on firms not receiving grants, areas where grant recipients are situated and society as a whole:

Knowledge spillovers and agglomeration effects

As highlighted above, the case for public intervention is partly underpinned by the likelihood that firms will only be able to partly capture the benefits of their investments in R&D. A range of processes, such as

learning by imitation and circulation of workers in the labour market, may enable other firms to 'free-ride' on the investments in R&D made by beneficiary firms, potentially resulting in productivity gains and growth beyond the pool of firms receiving funding.

Regional development impacts

Smart Grants could also lead to positive regional development outcomes by directly supporting the growth of firms situated outside of the major hubs (e.g. those outside of the golden triangle and the wider South East) or by supporting firms inside those areas to open or expand sites outside existing clusters.

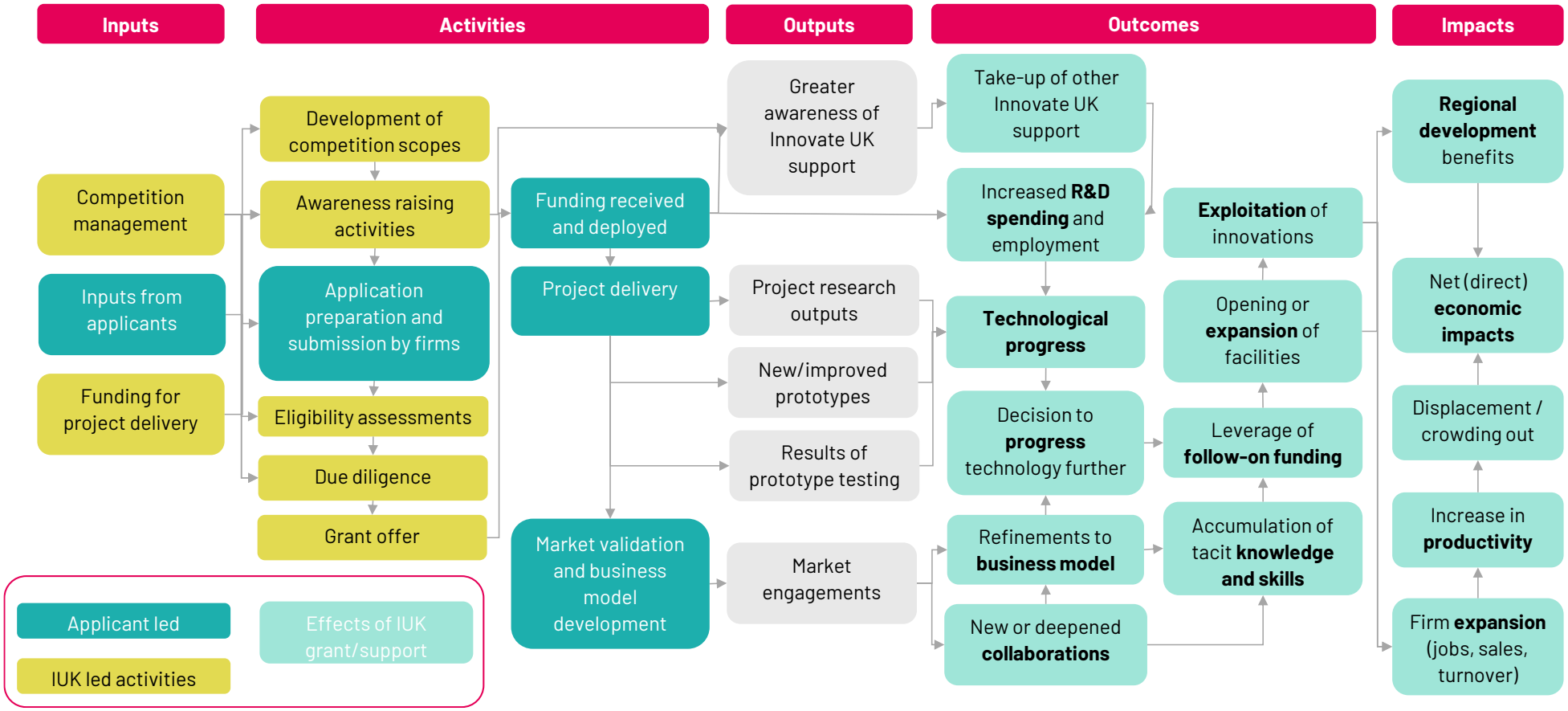
Social impacts

In many cases, the production and adoption of innovations is likely to produce several welfare-improving effects for society. These effects can be expected to vary considerably by the nature of the sector but would largely be expected to include improvements in consumer welfare (e.g. arising from more efficient urban environments or more effective healthcare technologies) or environmental benefits (arising from more energy efficient buildings or improved resilience of the national grid).

2.4 Logic model

A diagram summarising the above intervention logic is presented in Figure 2.1.

Figure 2.1: Logic model – Smart Grants programme



2.5 Programme context

Since 2019/20, there have been several key economic and policy developments that have influenced programme delivery. This section summarises the key factors and their potential influence on the results of the evaluation.

COVID-19 pandemic

The COVID-19 pandemic resulted in the enforced closure of large sectors of the economy to contain the outbreak of the virus in March 2020. These measures raised fears of a significant adverse economic shock – including widespread business failures and a significant rise in unemployment. In view of experiences of the after effects of the 2008 financial crisis, there were also concerns that there would be a significant reduction in the supply of risk finance, which would have had particularly severe consequences for the types of innovative SME being targeted by the Smart Grants programme.

However – partly due to major economic interventions launched by HM Government – the economy proved more resilient than worst case projections and levels of venture capital investment in UK companies expanded to historic highs between 2020 and 2022.1 Nevertheless, the period was characterised by reduced availability of funding for early-stage businesses as investors shifted focus to revenue-generating companies at later stages of development, and some firms benefiting from the Smart Grants programme may have experienced relatively greater challenges in securing external funding during this period.2 Additionally, social distancing restrictions and other frictions (e.g. supply chain disruption) were likely to have caused delivery issues and delays for some firms delivering R&D projects during the period.

Withdrawal from the European Union

The UK's exit from the EU and the end of the transition period in 2020 reshaped the operating environment for innovative firms through new customs and regulatory regimes, changes to talent mobility, and uncertainty over participation in EU research and innovation programmes. The Smart Grants programme targets businesses with global ambitions and these changes in the trading environment have the potential to require some businesses to alter their commercialisation strategies.

Macroeconomic headwinds

Macroeconomic headwinds caused by the invasion of Ukraine in 2022 and resultant spike in energy prices have arguably caused greater challenges for innovative businesses by placing significant additional pressure on prices. This has caused central banks to raise interest rates, making risk-free asset classes relatively more attractive and reducing appetite for higher-risk venture investments. The effect of this is visible in falling levels of venture capital investment in the UK economy from 2023 onwards – which may have had adverse effects on the fundraising of firms supported through the Smart Grants programme, particularly towards the end of the evaluation period.

Wider policy context

The wider policy context in which the Smart Grants programme operates has evolved substantially since 2019/20. At the beginning of the period, the government had adopted a 'mission focused' Industrial Strategy organised around a series of 'grand societal challenges' which led to the introduction of range of interventions to help the economy adapt.

[1] Department for Business and Trade (2025) BEIS COVID-19 Response: Meta Evaluation
[2] Innovate UK (2021) Innovation Finance: Private Funding for Innovative Firms in the COVID-19 Pandemic

This included the introduction of the Industrial Strategy Challenge Fund – a series of significant R&I initiatives organised around the challenges faced by industries and technology areas. The Industrial Strategy was withdrawn in 2021, with government policy refocused on the Plan for Growth (organised around the three pillars of skills, infrastructure, and innovation). The 2022 Innovation Strategy reintroduced a long-term framework for innovation policy, including identifying a framework of priority technology families that were deemed critical for the UK's future prosperity and security.

The Smart Grants programme has been delivered in response-mode and has not had specific objectives to contribute to the themes or priorities identified in these wider policy documents – though the evolving landscape and availability of funding through parallel schemes may have influenced the types of projects that have come forward and/or the availability of follow-on funding from the public sector where it is needed.

Industrial Strategy

In 2025, the government launched a new Industrial Strategy as a key pillar of its growth mission, aiming to unlock increased business investment, capture a greater share of internationally mobile capital, spur domestic businesses to scale up, and support SMEs.[3] The industrial strategy focuses on eight industrial sectors (referred to as the IS-8) considered to have the highest potential for achieving these aims: Advanced Manufacturing, Creative Industries, Digital & Technologies, Life Sciences, Financial Services, Clean Energy Industries, Professional & Business Services, and Defence. Again, as a response-mode programme, the Smart Grants programme has not been developed to address sector-specific priorities, though moving forwards there is clearly interest in understanding how the programme works to advance the government's wider aims.

[3] HM Government, The UK's Modern Industrial Strategy (London: HM Government, 2025)

3 Portfolio of projects funded

This section sets out an overview of the portfolio of projects funded through the Smart Grants programme between 2019/20 and 2024/25. This section draws on an analysis of Innovate UK's monitoring information (including an AI-assisted analysis of grant abstracts associated with funded projects) and the findings from primary research with applicants for funding.

3.1 Key findings

Scale and spend

1,688 projects were awarded funding through the Smart Grants programme between 2019/20 and 2024/25. A total of £531m was committed of which £448.6m (85 percent) had been claimed by December 2025. Almost 90 percent of projects were complete at the time of writing, with a small share of projects remaining live (largely those funded in 2024/25).

Characteristics of funded companies

Awards predominantly went to very small firms - 51 percent were micro-businesses (fewer than 10 employees) and 20 percent were small businesses with 10 to 49 employees. Firms were also associated with low levels of turnover – 22 percent were operating on a pre-revenue basis and amongst revenue-generating firms, over half reported annual sales of less than £2m per annum.

Commercial objectives:

The innovations under development were also generally at early stages of development – 61 percent of projects were at or below proof-of-concept stage (TRL3). However, in line with the objectives of the programme, most projects were associated with rapid commercialisation aims and aimed to scale to global markets. The one exception was life sciences and medical technology projects which faced longer regulatory paths (where grants were to be used primarily to de-risk early prototypes) – accounting for around a quarter of the projects funded.

Funding constraints

There was a variety of evidence that firms faced funding constraints that had inhibited their development. Bootstrapping was relatively common and while 43 to 50 percent had sought or secured equity prior to applying, many still faced capital gaps and investor pressure to prioritise nearer-term, lower-risk activities.

Collaboration

593 projects (35 percent) involved collaboration. Almost half of collaborators were SMEs; 31 per cent were academic partners. Firms collaborated for capabilities, access to facilities, user/validation data, and speed – with grant funding critical in both enabling companies to fund the costs involved and giving applicants a quality signal that facilitated partner engagement.

Strategic alignment

Although the programme was delivered in response-mode, the project portfolio displayed strong alignment with prevailing policy priorities. Around 90 percent of projects funded were seeking to develop innovations originating in or to be adopted by the priority sectors identified in the 2025 Industrial Strategy (with life sciences and advanced manufacturing being a particular focus), A similar proportion of projects were

developing innovations aligned to the priority technology families identified in the 2022 Innovation Strategy – with applications based on Artificial Intelligence being particularly prevalent in the portfolio.

3.2 Portfolio overview

Based on Innovate UK's Transparency Data, a total of 1,688 projects were awarded funding through the Smart Grants programme between 2019/20 and 2024/25:

- At the time of writing (December 2025), most projects in the scope of the evaluation were either complete or in final claims (88 percent). 177 projects were 'live', while 33 were on hold or had been withdrawn.
- A total of £531.0m of Innovate UK grant funding was committed to these projects. At the time of writing, around £448.6m had been claimed (85 percent).
- 593 projects (around 35 percent) involved collaborations with third parties. A total of 2,703 organisations were involved in the delivery of the 1,688 projects in the portfolio.

Table 3.1: Number of projects funded, committed and actual spending, Smart Grants 2019/20 to 2024/25

Competition year (year of award)	Number of projects funded	Funding committed (£m)	Grant funding spent (£m)
2019/20	301	93.9	85.2
2020/21	346	102.9	91.6
2021/22	322	103.3	95.0
2022/23	391	120.5	108.6
2023/24	158	54.8	44.0
2024/25	170	55.6	24.0
Total	**1,688**	**531.0**	**448.6**

Source: Innovate UK Transparency Data, December 2025. Figures do not sum due to rounding.

3.3 Characteristics of firms awarded grants

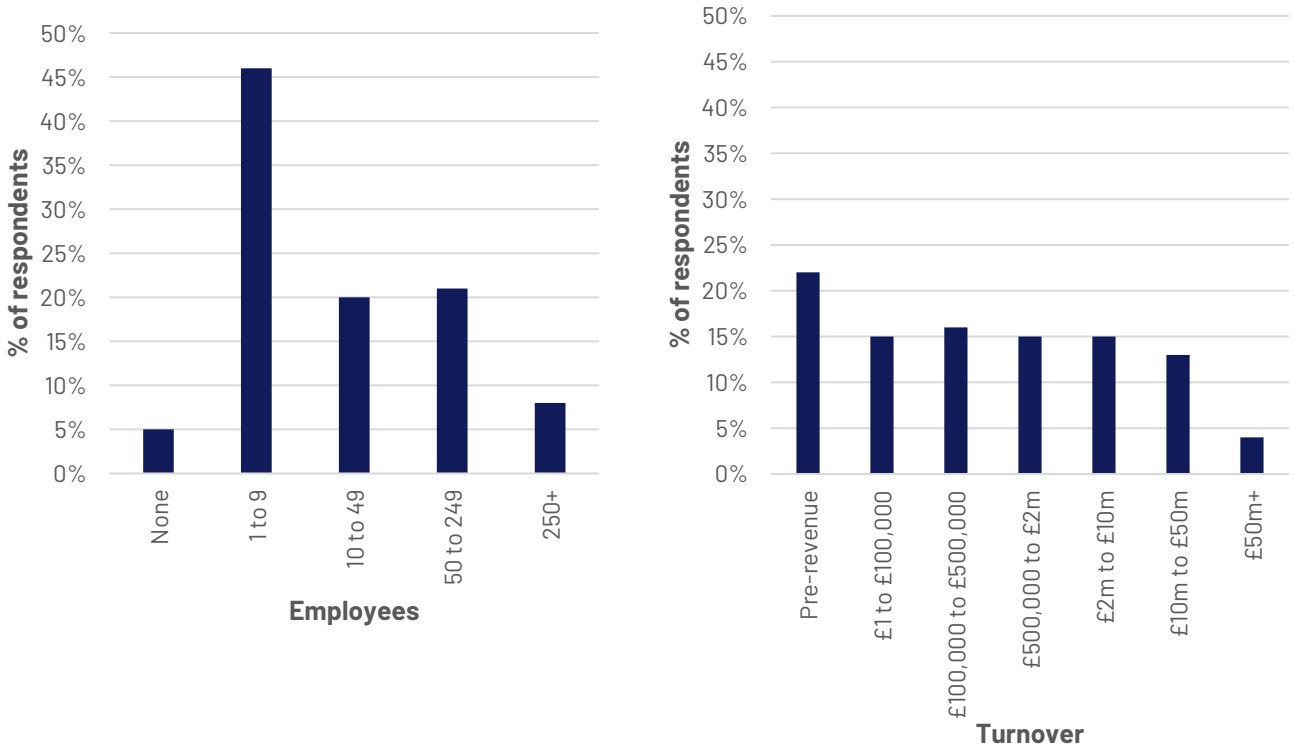
3.3.1 Size and scope of operations

Smart Grants were predominantly awarded to small companies generating low levels of turnover or operating at pre-revenue stages:

- 51 percent of companies awarded funding were microbusinesses at the time of their application – employing fewer than 10 workers at the time of their application. A further 20 percent were small businesses employing 10 to 49 workers.
- 22 percent were operating on a pre-revenue basis. While 78 percent of firms awarded Smart Grants were revenue-generating at the time they were awarded grants, annual revenues tended to be relatively low (with 46 percent of companies generating less than £2m in sales per annum).

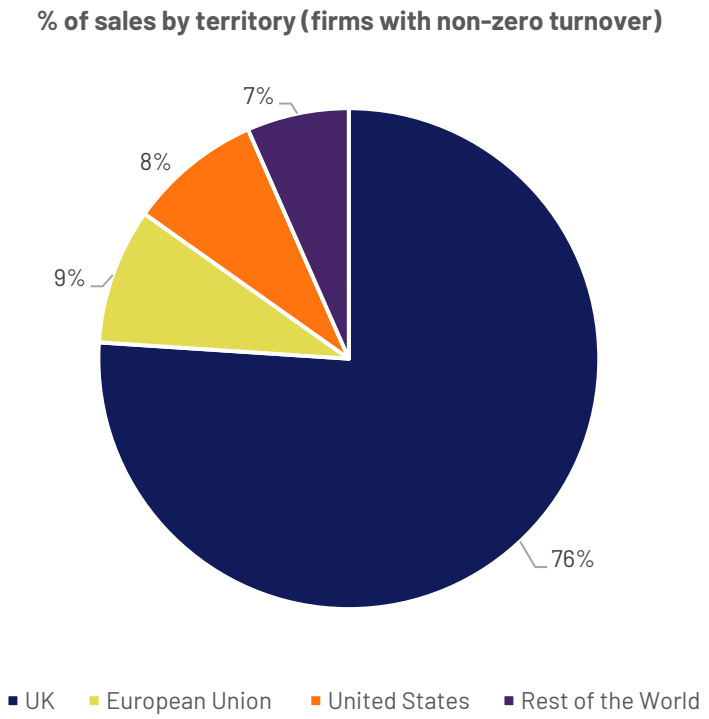
- At the point of application, operations were predominantly oriented towards the UK. 96 percent of workers employed by firms awarded grants were employed in UK locations. Only 25 percent of firms were active in export markets, and amongst revenue generating firms, over 76 percent of sales were generated from UK customers.

Figure 3.1: Employment and turnover of firms awarded funding (at point of application)



Source: Business Structure Database. ONS. Ipsos Analysis.

Figure 3.2: Sales by territory of firms awarded funding (at point of application)

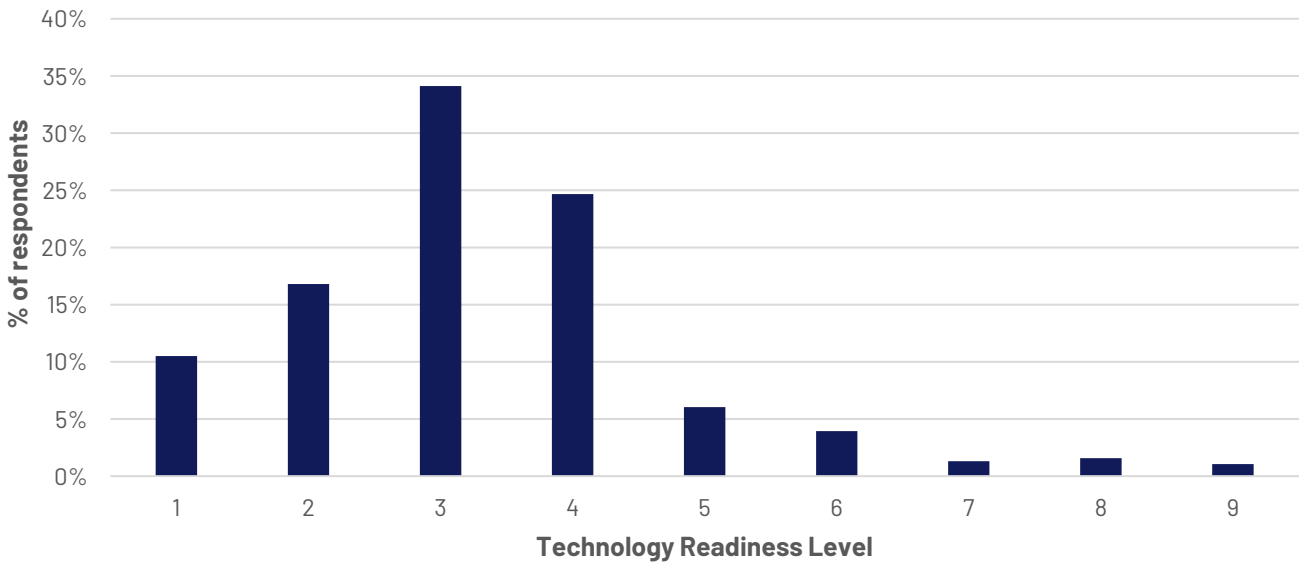


Source: Telephone Survey of Smart Grant beneficiaries. Base: Firms awarded grants (399) and revenue generating firms awarded grants (232). Sales figures by territory are not weighted by overall sales.

3.3.2 Baseline levels of technical maturity

Firms awarded grants generally reported that their innovations were developed to relatively low levels of technical maturity at the point they were awarded funding through the programme. 61 percent of firms reported that they had not advanced beyond the proof-of-concept stage (TRL3). A further 25 percent of firms reported that they had developed rudimentary prototypes (TRL4).

Figure 3.3: Technology Readiness Level of innovations forming the focus of Smart Grants at the point of application



Source: Telephone Survey of Smart Grant beneficiaries. Base: Firms awarded grants (399).

3.3.3 Funding

Low levels of technical maturity were often linked to funding constraints that had impeded the progress of their R&D activities:

Bootstrapping

'Bootstrapping' - funding activities from founders' own cash, contributions from friends and family, consultancy income or in-kind contributions (such as access to university facilities) - was relatively common amongst firms awarded funding. As highlighted in Figure 3.3, 29 percent of firms awarded funding indicated that they sought funding from friends and family, reportedly securing an average of £219,000 in funding to finance these activities. The case study research indicated that this type of financial backing placed significant constraints on how quickly firms were able to move forward with their innovations – particularly in terms of being able to hire specialist staff and invest in appropriate equipment/rigs or other assets needed to advance their innovations.

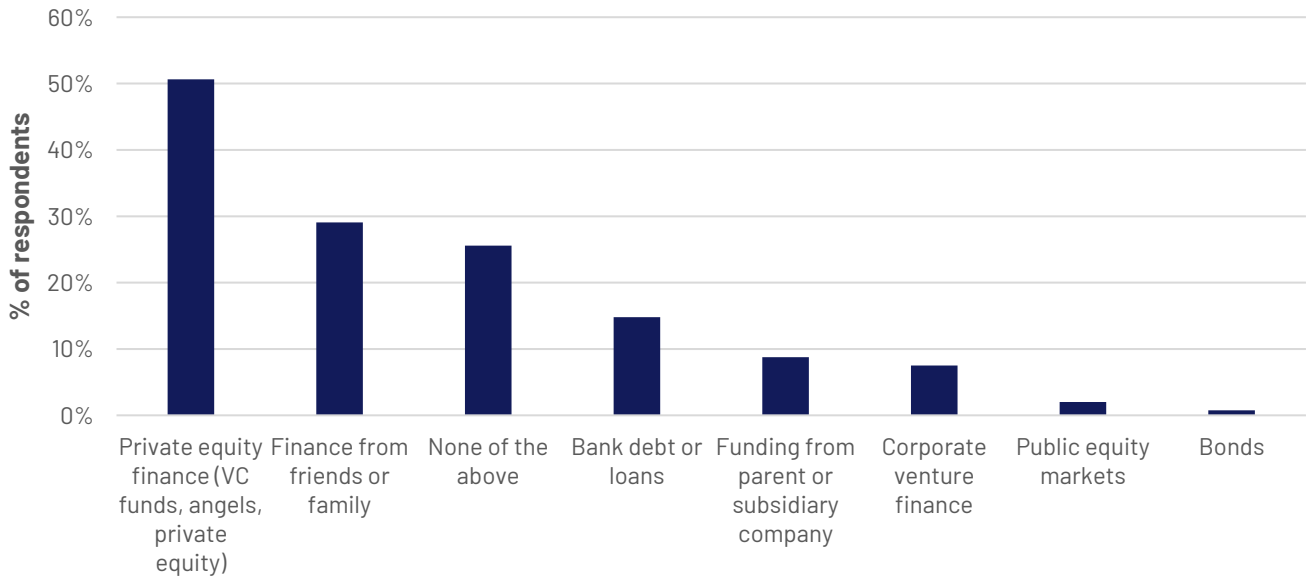
Equity finance

As such, firms supported through the programme tended to be highly dependent on external equity finance and relatively successful in obtaining it. Around 50 percent of firms reported that they had sought investment from VC funds to help finance their R&D project prior to making an application to the programme. Based on an analysis of PitchBook records, 43 percent of firms awarded Smart Grants had secured some form of external equity investment prior to being awarded a grant – collectively raising £1.7bn in funding, predominantly from venture capital funds (£2.9m per firm that had raised funding).

Despite their relative success in raising external equity funding prior to their applications to the programme, the case studies indicated firms awarded grants still faced financial and non-financial constraints limiting their progression. Firstly, the amounts raised often remained insufficient where firms faced significant capital costs to reach their next 'milestone' – such as building pilot rigs or funding trials. There were also indicators that external investors often encouraged founders and management to focus their resources on preserving their cash runway and pushing forward lower risk activities likely to generate revenues over shorter timescales - rather than pursuing more speculative and higher risk development activities that (from the point of view of the investor) had not been sufficiently de-risked.

The case studies also highlighted the challenges faced by many firms in attracting private investment which – in line with businesses benefitting from many Innovate UK programmes - were typically linked to the low level of technical maturity associated with the innovation. Firms typically did not hold the experimental data to demonstrate to investors that the innovation was technically or commercially viable – and the costs of obtaining this data typically exceeded their available resources. As such, equity finance was often either difficult to raise or was offered on terms that led to unacceptable (from the point of view of founders) dilution of their stakes in the business.

Figure 3.4: Sources of private funding sought to progress the project, prior to application for Smart Grant



Source: Telephone Survey of Smart Grant beneficiaries. Base: Firms awarded grants (399).

3.3.4 Commercial objectives

The case study research indicated the commercial objectives of firms supported through the programme generally aligned closely with the aims of the Smart Grants programme to support rapid commercialisation and scale-up. Many projects investigated were targeting large global or national markets and were seeking to generate revenues rapidly - either during or shortly following the completion of the project. Typical commercial models included:

Product development

This group of firms aimed to use Smart Grant funding to develop a minimum viable product that could be sold to customers within the timeframe of the grants. The companies were typically looking to commercialise within six to 18 months of the start of the project. Examples included a mass photometry firm adapting an existing instrument platform to analyse Adeno-associated Viruses for use in the development of gene therapies and a developer of systems to enable aerodynamic measurements of bicycles and riders in the real-world (i.e. without the need for a wind tunnel) with professional cycling teams as initial commercial targets.

Licensing

This group of firms were generally focussed on manufacturing process innovations and sought to use Smart Grant funding to develop and validate pilot scale industrial processes with a view to earning commercial revenues via licensing agreements with industrial partners within a timeline of 12 to 36 months. A typical example was a spin-out from Cambridge University that was developing a process for applying a pea-protein resin to replace the plastic coatings on food packaging. This route to market was typically dictated by the significant capital requirements associated with investments in large scale production facilities – licensing routes were considered more feasible, with future growth expected from widening the range of applications for the innovation rather than expansions in production.

Software platforms and marketplaces

This group of firms were generally developing software platforms or marketplaces and were using the grant to develop a minimum viable product to obtain early user adoption and early revenues. One example was a developer of data collection and analysis platform to improve the productivity of the surgical pathway, with NHS Trusts envisaged as early customers.

Exceptions

The main exception cases were in relation to (some) projects in the medical technology and life sciences technology area and other highly regulated industries with extensive product development timelines. Smart funding in these cases was only sufficient to support the development of early prototypes to help de-risk the innovation, though extensive additional capital would be needed to support the product through regulatory approval processes.

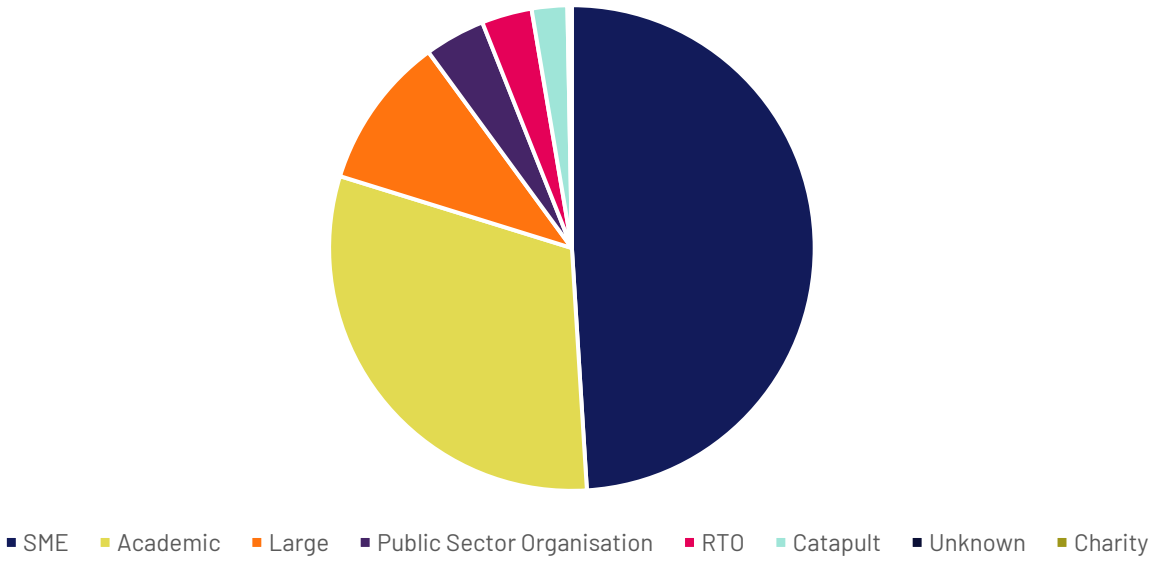
There was also some variability in the speed with which firms intended to commercialise. While some firms sought to enter global markets immediately, others intended to adopt a more incremental approach. For example, the firm developing systems for real world aerodynamic measurements for cyclists was initially focused on specialist professional sports markets – acknowledging that their product would require improvements in usability as well as sufficient support capacity to enter the significantly larger consumer market.

3.3.5 Collaboration patterns

As highlighted above, 35 percent of projects involved some form of collaboration with third parties to support the delivery of the project. Based on Innovate UK's Transparency Data, almost half of the collaborators involved were other SMEs, with academic partners accounting for a further 31 percent. Firms also collaborated with a wide range of other types of organisations - including large companies, public sector organisations (predominantly NHS partners), and Catapult Centres and other Research and Technology Organisations (RTOs).

The case study interviews indicated that collaboration took the form of formal collaborators, where teams worked with universities/research institutes, NHS trusts and clinical, Catapult/testbed facilities, and industrial end-users. These partners typically provided access to environments, patients/data, specialist labs or testbeds, and independent validation. Businesses also highlighted they collaborated with subcontracted specialists, placing discrete work packages with specialist SMEs. Businesses indicated that this subcontracted expertise was critical to de-risk the project and keep to project level timelines.

Figure 3.5: Collaborating parties by type



Source: Innovate UK Transparency Data, December 2025

The case study research highlighted four principal motivations for working in collaboration, that were relatively consistent across cases:

- Access to capabilities was the primary driver and several teams used Smart Grants to bring in specific expertise or systems that would have taken too long to develop in-house. For example, one developer of meniscus implants for knee replacements used Smart Grant funding to fund a contract manufacturer with experience of the hydrogel materials used in its design and run a pre-clinical study in sheep models with the academic and veterinary teams. This work required specialist expertise that they did not have within their workforce at the time of the project.

- Access to facilities was also a common driver of collaboration. For example, one firm seeking to develop devices to more cost-effectively measure heat transfer through building parts assembled a consortium around Energy House 2.0 at the University of Salford. This is a climate-controlled environmental chamber that could not be replicated with the resources available to most start-up companies.

- Access to users and validation data – projects typically involved both the development and refinement of prototypes and collection of validation data to demonstrate the efficacy and/or viability of the innovation (important for persuading buyers and investors). Smart Grants helped fund companies to work with potential users to collect this data – a hydroponics company used part of its grant funding to get growers to send frequent root samples and to isolate pathogens during real outbreaks. Without the grant (and legitimacy this conferred on the company), the high-frequency sampling and sequencing needed would have been unaffordable and growers would have been reluctant to cooperate.

- Speed - collaboration also allowed companies to move faster by running workstreams in parallel and spreading the cost and risk of capital-intensive steps.

Smart Grants enabled collaboration in two ways. Most simply, the grant covered collaboration costs that reportedly could not have been covered by the resources available to the company. However, the case

studies also highlighted the importance of the credibility given by the award of the Smart Grant – without this 'quality signal', it was considered that many collaborators would not have engaged on acceptable terms.

3.4 Strategic alignment

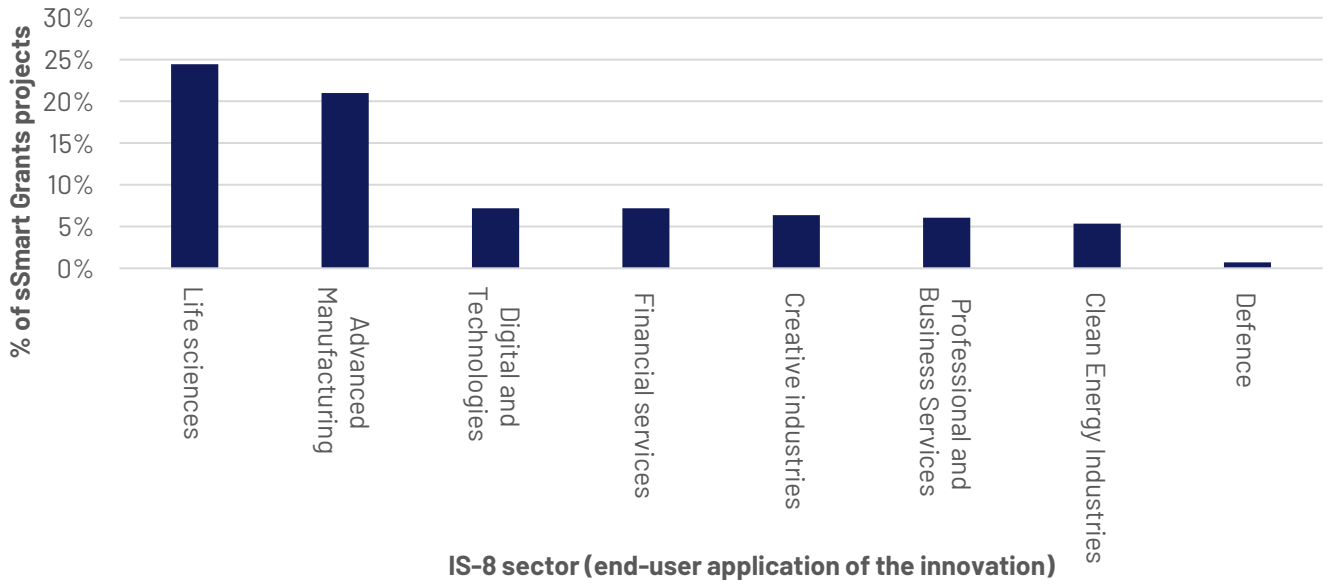
The Smart Grants programme was delivered in response-mode and was not developed to address the government's thematic priorities. However, the evidence indicated that the portfolio of projects funded between 2019/20 and 2024/25 achieved strong thematic alignment with prevailing policy priorities.

3.4.1 Alignment with the Industrial Strategy

AI-assisted analysis of project abstracts indicated that the Smart Grants programme was strongly aligned with the sectoral priorities of the 2025 Industrial Strategy. An analysis coding the downstream industry in which each innovation was intended to be applied indicated that:

- 72 percent of projects were aiming to develop innovations to be adopted within at least one of the IS-8 sectors. Innovations targeting the life sciences (24 percent) or advanced manufacturing (21 percent) sectors were most common in the portfolio.
- A further 18 percent of projects developed originated in the 'digital and technologies' aimed at adoption in other sectors (e.g. logistics, urban planning, etc).
- Only a small share of projects (10 percent) was deemed out of the scope of the sector focus of the Industrial Strategy. These projects generally involved a focus on waste management or circular economy issues or innovations aimed at the food and drink manufacturing industry (which is outside the scope of the Advanced Manufacturing Sector Plan).

Figure 3.6: Distribution of projects by sector of downstream application (IS-8 sectors only)

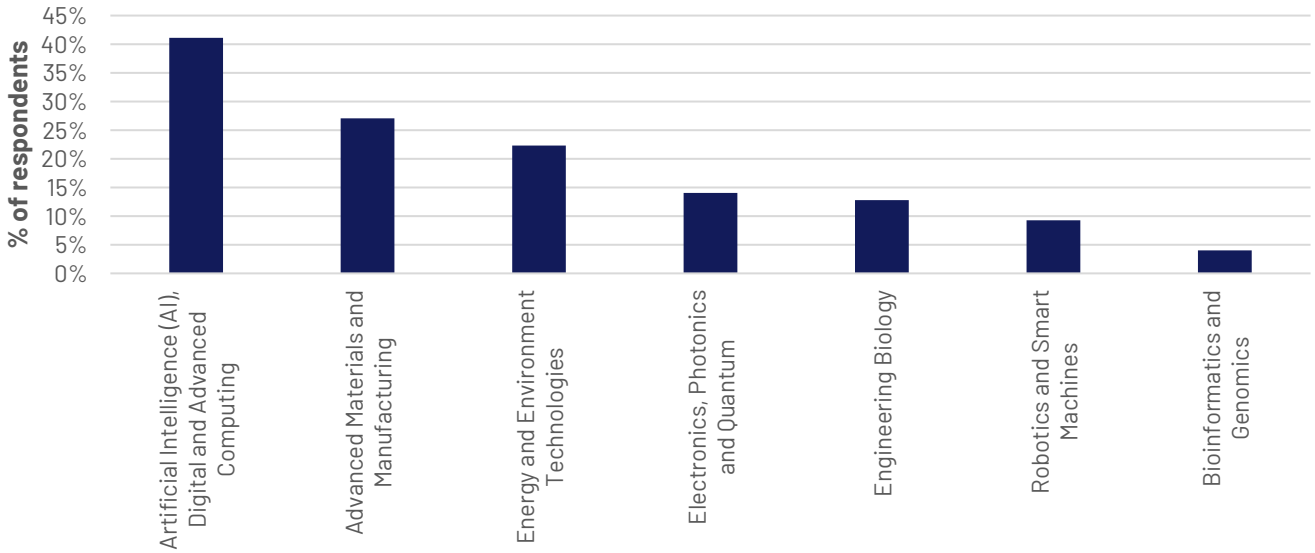


Source: Ipsos analysis of project grant abstracts. A single project can be coded against multiple industries where relevant.

3.4.2 Priority technology areas

The findings of the survey also showed that the innovations funded through the programme had a strong alignment with the technological priorities set out in the 2021 UK Innovation Strategy. Almost 90 percent of businesses reported that their innovation involved the development of at least one of the priority technologies identified in the strategy. There was a particularly strong focus on the development of artificial intelligence applications (41 percent of funded projects), advanced manufacturing and materials (26 percent), and energy and environment technologies (22 percent).

Figure 3.7: Did the innovation at the heart of the project fall into the following technology areas?



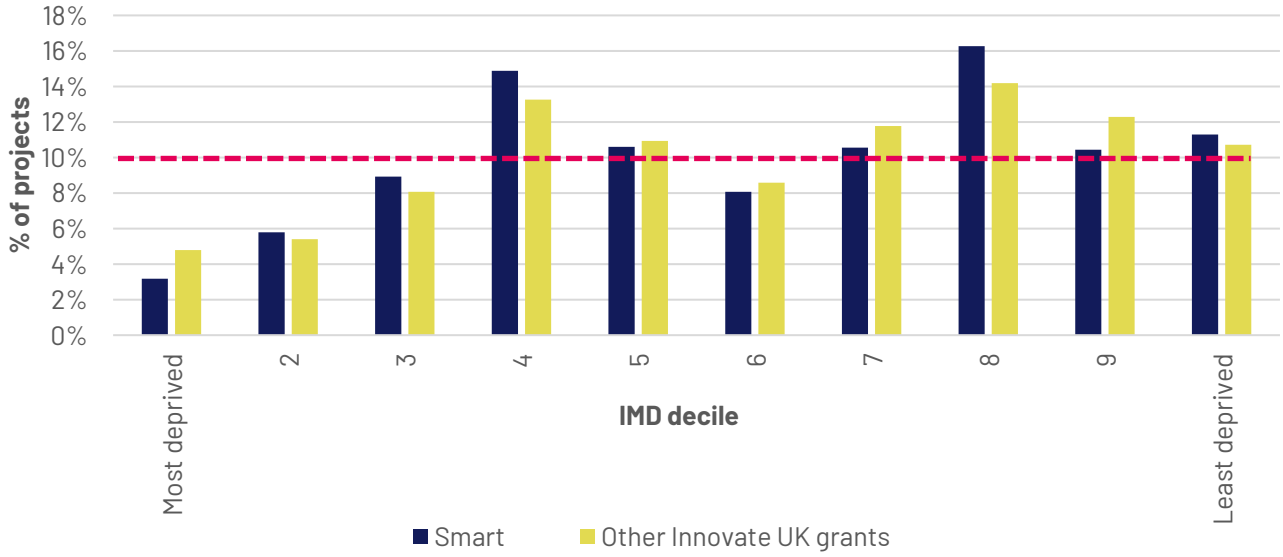
Source: Telephone survey of applicants. Respondents were able to report multiple technology areas.

3.5 Regional distribution

As illustrated in the following figure, Smart Grants were broadly awarded in a similar distribution by deprivation levels to Innovate UK awards in general over the 2019/20 to 2024/25 period:

- Around 47 percent of the funding was awarded to businesses located in the 50 percent most deprived areas, while 53 percent was allocated to businesses in the least deprived areas (note this analysis covers England only).
- This indicates that grants were relatively evenly distributed across areas, suggesting a broadly neutral distribution overall i.e. the programme would not be expected to either widen or narrow economic disparities, based on the overall distribution of funding).
- There were, however, some indications that businesses located in the most deprived areas were underrepresented in the grant portfolio (in line with Innovate UK's overall funding portfolio).

Figure 3.8: Distribution of projects IMD decile (England only)



Source: Innovate UK Transparency Data (2025) and MHLCG (2022) English Indices of Deprivation

4 Outcomes

This section provides an assessment of the outcomes of the Smart Grants programme between 2019/20 and 2024/25. It covers the effect of the programme on R&D activity, technological progress, investment, and knowledge outcomes. This section is based on the findings of the primary research with applicants to the programme and the results of econometric analysis.

4.1 Key findings

Motivations to seek public funding

Firms applying for funding were motivated by their inability to cover the costs of delivering the project and an interest in accelerating its delivery (resulting from time pressures created by the limited nature of their cash runways and the need to be quicker to market than the competition). The Smart Grants programme offered unique advantages from the perspective of many firms – open competitions allowed firms to tailor their projects to their commercial priorities, the scale of grants was in line with their ability to provide match funding, and the predictable rhythm of competitions and fast decision timelines were critical in the context of the time pressures faced.

Effects on R&D activity

The Smart Grants programme had a significant effect on the R&D activity of firms awarded grants – including increasing annual R&D spending by 7 percent and R&D employment by 5 percent. This is consistent with a high level of additionality and indicates that public funding was often critical in enabling projects to proceed. These impacts were wholly confined to the UK with limited leakage of R&D spending into overseas territories. The effect on R&D spending also persisted beyond the typical lifetime of the grant, implying that the programme crowded in additional private investment in R&D for at least three years following the completion of projects.

Technical de-risking

This additional investment in R&D produced a significant acceleration in the technical maturity of projects – with firms awarded funding significantly more likely to reach late stages of development (TRL7 to TRL9) than those declined funding.

Investment leveraged

This technical de-risking – alongside early demonstration of commercial viability and quality signals provided by the award itself – helped to leverage additional follow-on funding. Firms awarded grants collectively raised a total of £3.6bn in equity investment following the award of Smart Grant funding. Econometric analyses indicate that the award of Smart Grant funding increased private fundraising by 8 to 10 percent by the end of 2024 (with effects increasing with time).

Other benefits

Firms awarded Smart Grants also reported a wide range of other improvements in skills, knowledge, and their business models.

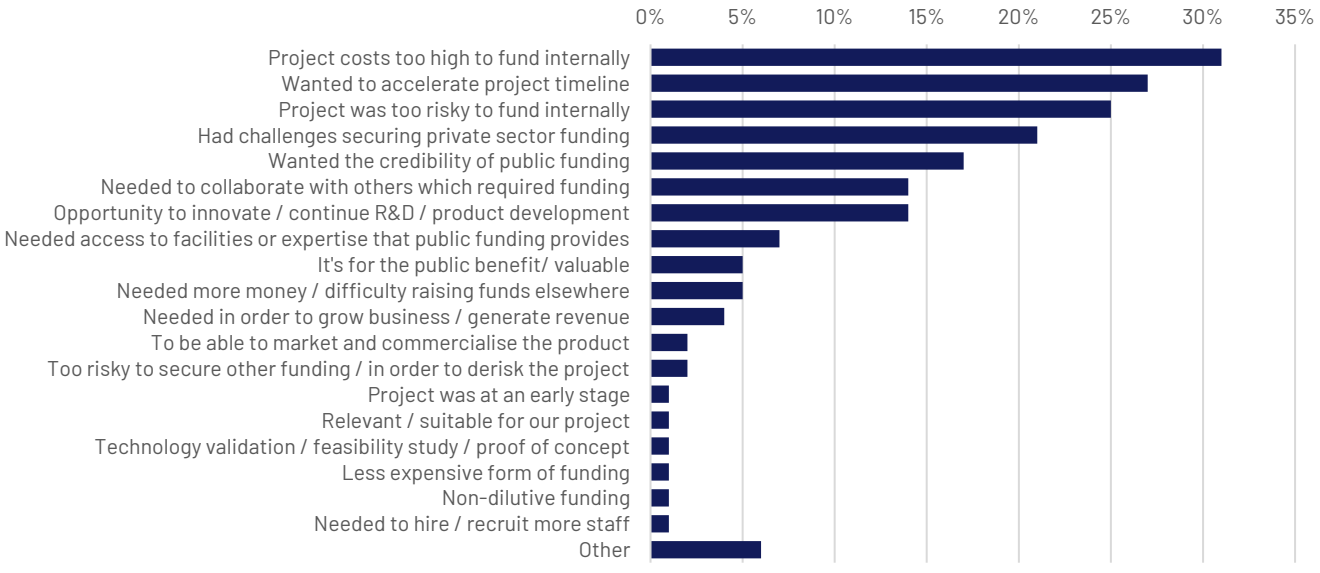
4.2 Additionality

4.2.1 Motivations for seeking public funding

Firms applying for Smart Grants were principally motivated to seek public funding by their inability to cover the costs of delivering the project and an interest in accelerating its delivery. As illustrated in Figure 4.1, firms generally reported that the project costs were too high to fund internally (31 percent), to accelerate the project (27 percent), the project carried too high a risk to fund internally (25 percent), or that they had issues in accessing private investment to fund the project (21 percent). Additionally, the case studies highlighted:

- Firms tended to apply to the Smart Grants programme because it was perceived as the only scheme that fit with their financing needs and technology profile. Several founders reported that they chose Smart because it provided grants of sufficient size to fund material R&D costs, but grant sizes were not so large that the delivery of projects would cause problematic cash flow issues.
- The response-mode nature of the programme was valued as it allowed firms to propose projects directly aligned with their immediate priorities rather than themes that were not fully relevant to their innovation or commercial objectives (as might be the case with thematic or challenge-oriented competitions).
- Speed was also important. Many firms reported operating with a limited cash runway (with boards typically approving 12 to 18 months of funding) or were concerned that windows for commercialisation were limited given levels of competition. The Smart Grants programme was perceived to run on a predictable cycle with decisions made quickly enough to preserve momentum (with other schemes considered either too infrequent or too slow and/or bureaucratic).

Figure 4.1: Key reasons cited by applicants for seeking public funding for their projects



Source: Telephone Survey of Smart Grant beneficiaries. Base: Firms awarded grants (399).

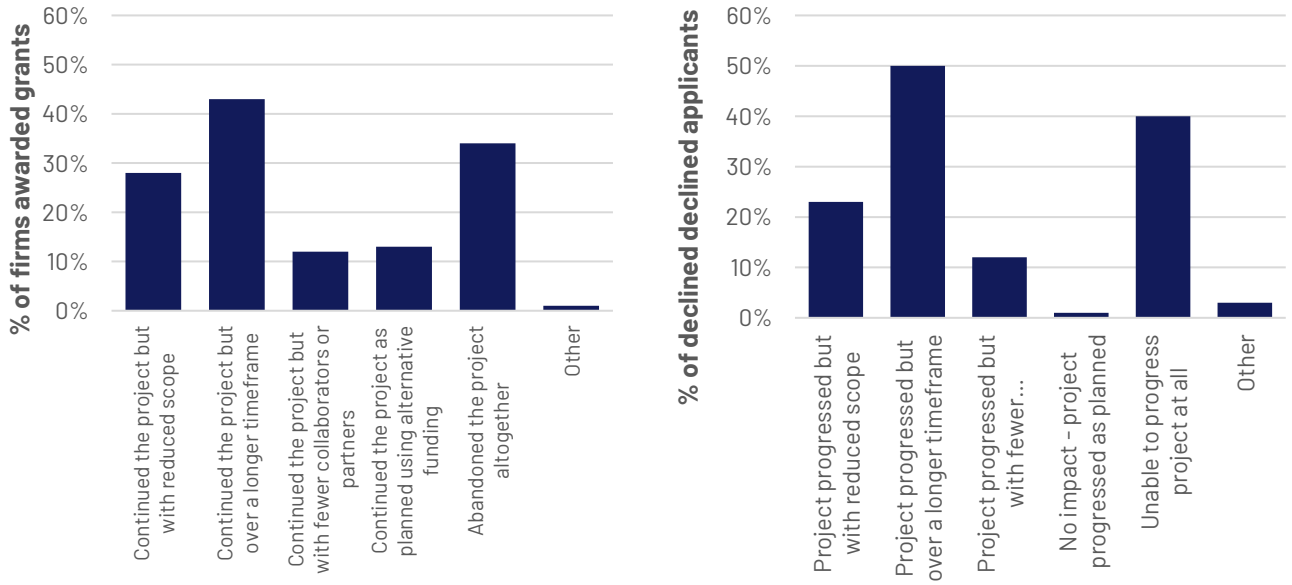
4.2.2 Self-reported views on additionality

Firms awarded grants generally considered that they would not have been able to progress their projects in the absence of the Smart Grant or would only have done so over considerably longer timescales. 35 percent

of firms reported that they would have abandoned the project altogether while 43 percent reported that they would have delivered the project over longer timescales.

While it can be difficult for firms to speculate what may have happened in counterfactual scenarios, these findings were broadly in line with the experiences of firms that applied for funding but were declined. Around 40 percent of this group reported that they abandoned their projects altogether while a further 50 percent indicated that they could only progress the projects over longer timelines – indicating a high level of additionality associated with the R&D activities enabled by the grants.

Figure 4.2: Would you have/did you progress the project in the absence of funding from the Smart Grants programme?



Source: Telephone Survey of Smart Grant beneficiaries. Base: Firms awarded grants (399).

The case studies highlighted a range of factors constraining access to alternative funding:

- **Commercialisation of technology at application:** Many firms interviewed were pre-revenue and had a technology of limited stage of commercialisation. This limited their eligibility for loans and debt, given their limited collateral and unpredictable cash flows. This combined with limited demand from equity investors for investment in deep tech, who were reluctant to finance early-stage investments given limited demonstration evidence and low levels of commercial traction. This was particularly the case for firms in medical technology or other industries that faced extended pre-revenue periods.

- **Investor sentiment:** Some firms reported limited investor appetite for a number of key reasons, including market headwinds for hardware technologies (with greater appetite for AI applications), waning investor interest (particularly for green or Net Zero technologies), interest-rate rises (which pushed venture capital funding towards quicker-returning deals), and commodity price volatility (particularly for companies that required rare-earth metals and energy).

However, some firms indicated that they would have continued with their project in the absence of funding. In almost all of these cases, participants reported that they would have only been able to do so with changes to their approach. This included reducing project scope, including focusing on laboratory experiments and simulations, rather than being able to progress to an end-to-end pilot or demonstrator. Firms also suggested they would have had to progress at a much slower rate, sequencing works in smaller, less costly

steps and delaying specialist hiring. Other companies suggested that in the absence of funding they may have had to make key changes to their business strategy, such as raising equity investment earlier to fund R&D before generating the de-risking evidence that could support valuation.

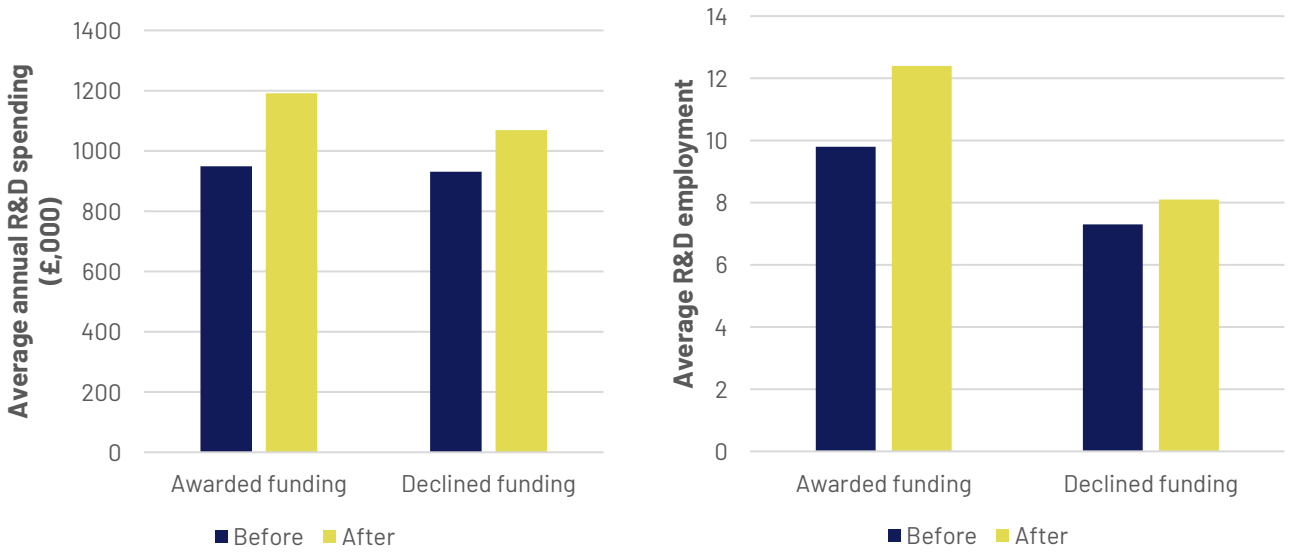
Case study – Aerodynamics developer: An aerodynamics equipment developer received Smart Grant funding in 2022 to develop aerodynamic testing and measurement equipment for use in competitive cycling. Prior to receiving funding, the firm had achieved a degree of commercialisation of the technology, working with professional cycling teams, but aimed to develop the technology to be more commercially accessible for business and consumer markets. In the absence of grant funding, the firm indicated that they would likely have continued the project by exploring alternative funding opportunities. However, the business indicated that equity investors were primarily interested in a rapid consumer launch. Whilst this may have generated short-term sales, this was seen by the firm as a high-risk 'rush-to-market' pathway and not considered an effective approach to commercialising the technology.

4.3 Impacts on R&D activity

The administrative data highlighted that firms awarded grants saw a significant expansion in their R&D activity relative to those declined funding – consistent with a significant level of additionality:

- Firms awarded Smart Grants saw annual R&D spending increase by 26 percent on average following the grant award, while R&D employment levels increased by 27 percent.
- Declined applicants saw smaller changes in their R&D activities – R&D expenditure rose by 15 percent, while R&D employment increased by 11 percent.

Figure 4.3: R&D expenditure and employment before and after (April 2024) applications to the Smart Grants programme, firms awarded funding and declined applicants

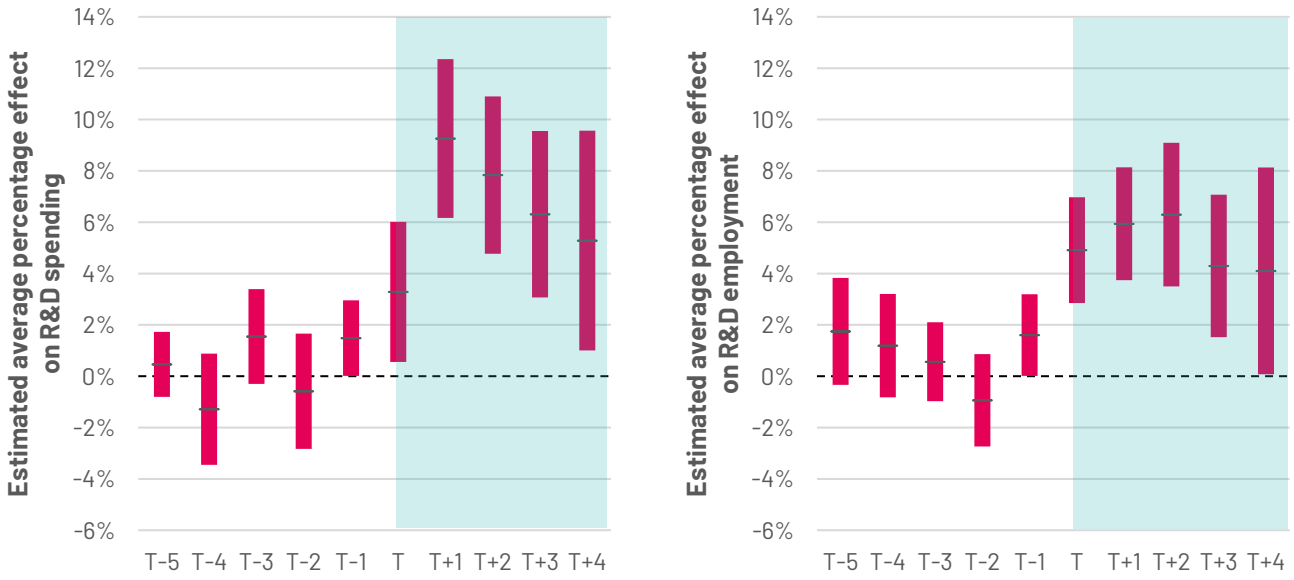


Source: Source: Business Expenditure on R&D, ONS, Ipsos analysis.[4]

The results of the econometric analysis indicated that:

- Smart Grants had increased the average annual R&D spending of firms awarded grants by 7 percent and R&D employment by 5 percent (over and above what may have occurred in the absence of the programme). This is consistent with a high level of additionality and suggests that grants were largely awarded to projects that would not have been taken forward without public funding (the level of deadweight is quantified in Section 6).
- There were no statistically significant effects on R&D spending placed overseas companies, with impacts wholly confined to the UK – implying that the level of 'leakage' was limited.
- As shown in Figure 4.4, the impacts of Smart Grants on R&D activity effect were sustained for at least four years following the initial award. Given the typical duration of funded projects (two years), this indicates that grants worked to crowd in follow on R&D investment following completion of the project.

Figure 4.4: Estimated impact of Smart grants on annual R&D spending and employment



Source: Business Expenditure on R&D survey, ONS, Ipsos analysis. Post grant period shaded light blue. Error bars indicate 95 percent confidence intervals.

4.4 Technological progress

4.4.1 Achievement of technical objectives

Firms awarded grants were generally highly positive regarding the technical outcomes of funded projects with 23 percent of firms awarded grants indicating that they were able to exceed their objectives and over

[4] 50 percent trimmed means were used to reduce the influence of outliers. This removes the top 25 and bottom 25 percent of R&D performers from the mean calculation.

half (53 percent) reported that they fully met their objectives. The case studies provided further evidence to illustrate what this meant in practice:

- For a large subset of firms, this meant the development of a working minimum viable product or pilot that third parties could buy, license, or trial. The AAV analysis instrument is a typical example - the team was able to adapt their mass-photometry platform to AAVs, validate it with the Cell and Gene Therapy Catapult on real samples, enabling a product launch within a further year.
- Where firms exceeded their objectives, this typically meant either achieving more than one technical or market goal within the window or discovering and acting on novel or unexpected insights. For example, a developer of hydroponics technologies set out to find disease-suppressing microbes in hydroponic lettuce but also delivered a yield-improvement product based on high-frequency microbiome data, filed two patents, and uncovered an unexpected pathogen that had gone unrecognised.
- Some teams obtained unexpected results that allowed them to pivot – for example, one team reported that trials showed their initial design was based on the wrong type of material. This failure saved the team a year or more of time and avoided investments of much larger sums into the wrong material.

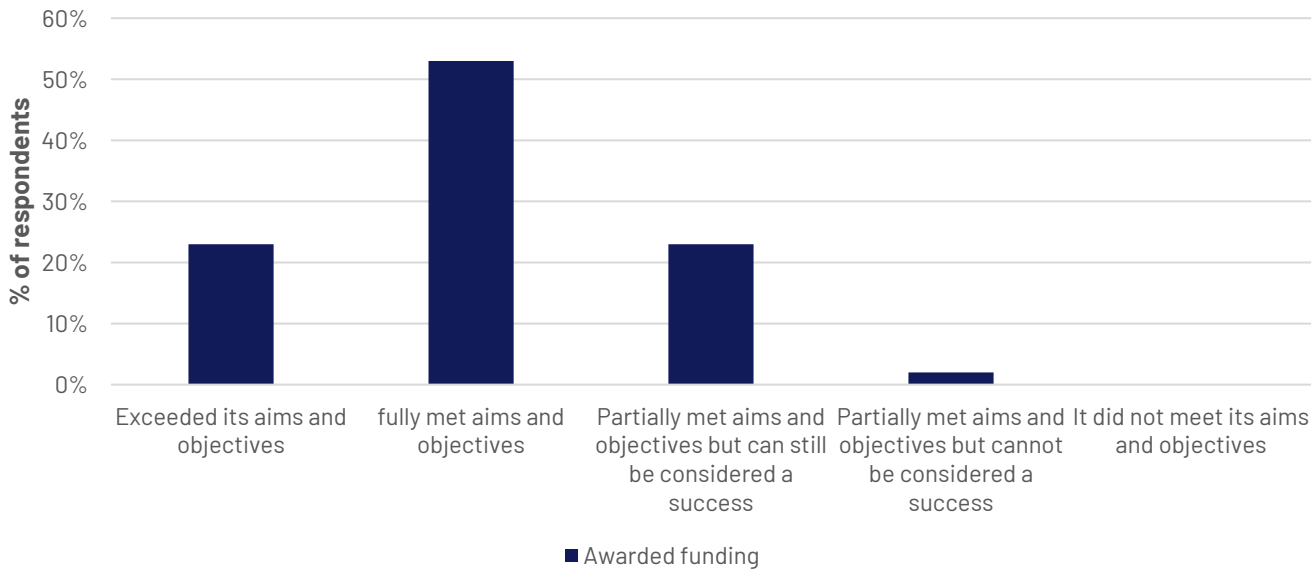
However, the sample of case study interviews also included a minority of firms who could not significantly progress their technology. These companies experienced challenges in implementation that delayed the extent to which they could progress their technology. For example, one firm, developing a novel folding e-bike, started their Smart Grant project with an initial design that had to be extensively changed during the project. This meant that the final project output was of a lower level of technological readiness than expected, although the knowledge outputs of the project have shaped their design and business practices following delivery of the grant.

Case study – Clean-tech start up extracting battery-grade minerals from wastewater

A UK clean-tech start-up was building a business around extracting battery-grade minerals from challenging water streams such as geothermal brines, produced waters, and industrial effluents. Its mission was to localise supply chains for critical minerals by turning under-used water resources into commercial products with a lower environmental footprint. Its commercial strategy focussed on designing modular plants that could be deployed at source. The core technology was a containerised, end-to-end process that takes raw brine through to battery-grade salt in a single, modular unit.

Smart funding enabled the first fully integrated pilot: a 40-foot containerised plant that moved the concept from bench chemistry to a system capable of continuous operation on real feeds. It financed trials on industrial brines, generating battery-grade product for independent assay, while exposing practical issues that were fixed before scale-up. The project embedded a lifecycle assessment that informed design choices and underpinned credible sustainability claims, and paid for specialist engineering, control software and critical equipment. The pilot's evidence base catalysed a ten times larger demonstrator and the company's first commercial output, and unlocked follow-on equity by enabling the development of a platform with clear performance metrics and costs.

Figure 4.5: Achievement of technical objectives



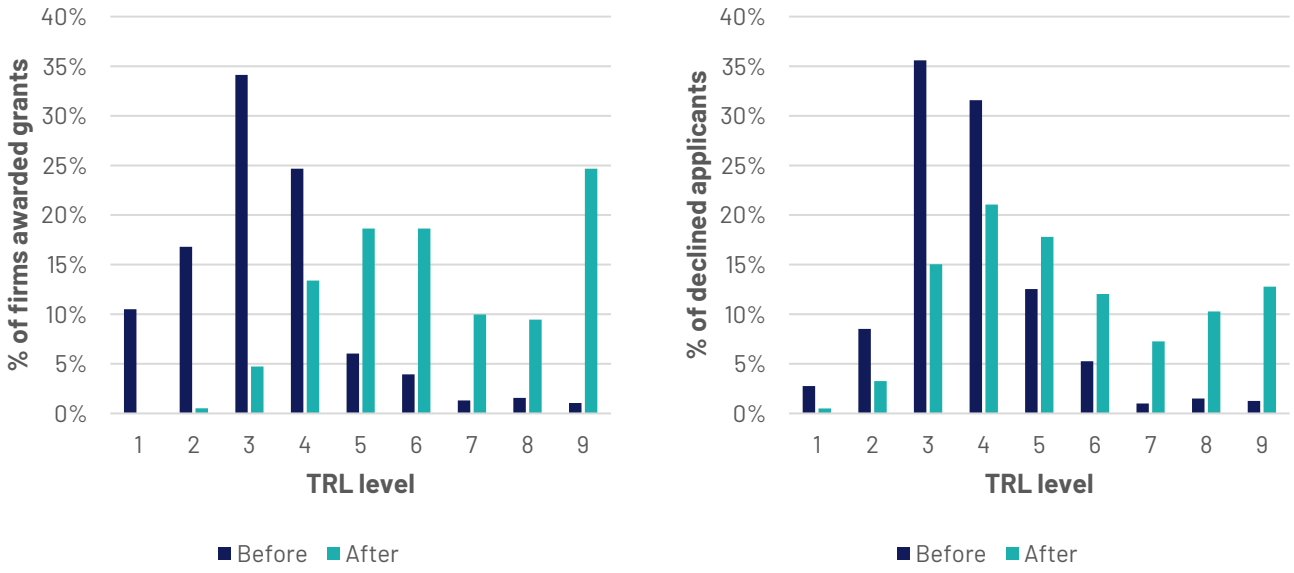
Source: Telephone Survey of Applicants. Base: All respondents n = 399 (Awarded funding)

4.4.2Technology Readiness Levels

Firms awarded Smart Grants were able to advance the maturity of their technologies substantially more rapidly than firms that applied for grants but were declined – indicating that the additional R&D leveraged by the grant has supported significant acceleration towards market:

- The share of innovations led by firms awarded grants that had reached advanced stages of development rose from 4 percent to 44 percent compared to 4 to 30 percent amongst declined applicants.
- The share of innovations reaching TRL9 (i.e. the end point of technical development) rose from one to 25 percent amongst firms awarded grants (one to 13 percent amongst declined applicants).

Figure 4.6: TRL levels associated with the innovation at the heart of the Smart Grant application (before and after application), firms awarded grants and declined applicants



Source: Ipsos Survey. Base: All respondents n = 399 (Awarded funding), n = 418 (Declined funding).

4.5 Follow-on investment

4.5.1 Private funding raised

Firms awarded Smart Grants proved successful in raising private funding following the award of grant funding. Based on PitchBook records:

- 37 percent of firms awarded grants secured private funding by the end of 2024. A total of £3.6bn of external funding was raised by these companies – representing a substantial increase in fundraising relative to the period prior to the award of Smart funding.
- The bulk of investment was secured from venture capital funds, which accounted for £2.3bn of the total invested. Few firms progressed to an Initial Public Offering to access funding from public capital markets.

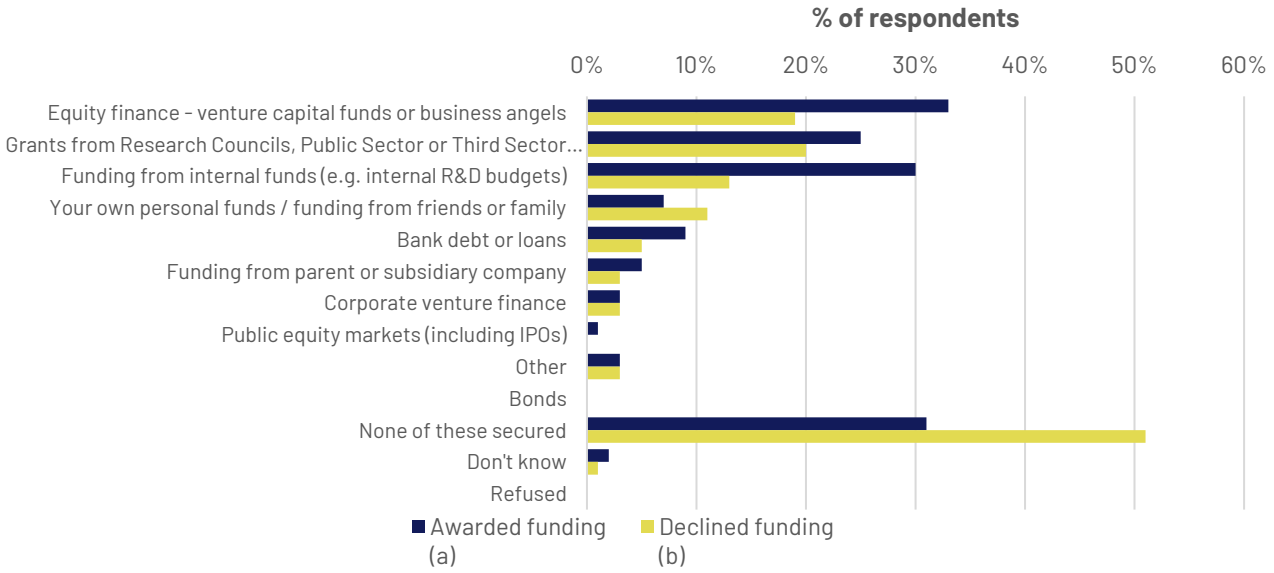
Table 4.1: Total funds raised by firms awarded Smart grants following the award of funding, by type of deal, 2019 to 2025

Deal Type	Amount raised (£m)	Number of deals
Angel/Accelerator/Seed	470.8	607
Early-stage venture capital	706.4	179
Late-stage venture capital	2,347.0	283
Private equity (including private investments in public equity)	26.5	15
IPO/2PO	32.4	3

Source: PitchBook. Ipsos user-defined query

As illustrated in Figure 4.7, firms awarded funding were more likely to report that they had been successful in securing additional funding compared to those declined funding. This indicates that the technical de-risking achieved with Smart Grants enable at least some firms to secure follow-on investment needed to pursue follow-on R&D, commercialisation and scale-up.

Figure 4.7: Follow on funding secured by firms awarded and declined funding



Source: Ipsos Survey. Base: All respondents n = 399 (Awarded funding), n = 418 (Declined funding).

4.5.2 Perceived effect of Smart Grants on ability to raise funds

The survey indicated that 74 percent of funded firms that secured follow-on funding considered the grant to be 'very important' in their ability to do so. The case study interviews highlighted three main pathways through which Smart Grants enabled these outcomes:

Technical derisking

Technical validation of the technologies under development was typically critical in securing the interest of investors. For example, in the case of firm aiming to develop a system for extracting minerals needed for batteries from water, investors were clear that the laboratory findings and lab rigs were not sufficient given the high capital requirements of commercialisation - they needed to see pilot data from an operational system showing stable operation, yields, and purity of minerals to battery-grade specification (alongside an analysis of the economics of the system). The Smart Grant financed a containerised pilot that produced battery-grade lithium carbonate that helped de-risk the proposition and the company was able to close a £4.4m equity round based on these results.

Early commercialisation

In many cases, Smart supported early commercialisation of products that help de-risk the commercial proposition for the innovation – with investors often requiring evidence of early commercial traction to justify investment. For example, the Smart Grant was used by one firm to develop 'smart bins' for use in healthcare environments and was able to deploy the technology into NHS Trusts and care homes on a subscription model. This evidence of paying subscriptions and multi-site rollouts was critical in unlocking angel investment, with proven willingness-to-pay amongst customers being a deciding factor.

Quality signals

Smart Grants also acted as a quality signal that lowered perceived risk for investors, at least in some cases. One founder developing a social value marketplace was explicit that the award itself shifted investor behaviour and described the grant as a recognised 'reference point' because 'everybody knows how hard it is to get the Smart grant'. Angels committed more than £1m to the company across rounds – and while the technical progress achieved mattered, the founder considered that the fact that an external panel had scrutinised the plan and backed it with public money was the decisive factor.

Firms that did not secure follow-on funding were more frequently those that had not been able to develop their technology as far as expected. This often meant that on completion of the Smart Grants project, they lacked sufficient evidence to attract equity investment. For example, while Smart Grant funding enabled a climate hardware firm to progress from benchtop chemistry to a pilot system, investors wanted to see a large-scale demonstrator which could not be developed through the project.

Case study – Developer of biodegradable alternative to plastics

A University of Cambridge spin-out developing biodegradable, bio-based alternatives to plastics. Its core technology uses plant proteins to create high-performance resins that replace thin plastic liners on paper packaging and to make microcapsules that eliminate microplastics in products like detergents. The goal is to deliver packaging that is readily recyclable or home-compostable, without compromising barrier performance or manufacturability, and to supply brand owners and converters via a licensing model.

Smart supported the transition of the company's plant-protein resin from the proof-of-concept stage to a proven manufacturing process. The project focused on reformulating and refining the resin to reduce water and energy use, improve batch-to-batch consistency, and move from litre-scale to pilot-scale manufacturing. It enabled commissioning of a pilot line, extended industrial coating trials with packaging converters, and systematic sustainability and recyclability assessments. The project also underpinned the commercial model—generating the technical and economic case to pursue licensing and paving the way for process transfer to a third-party manufacturing partner.

On the back of Smart, the company secured a substantial Series A investment (c. £14m), a multi-year follow-on grant, and an exclusive licensing agreement with a major manufacturer who co-invested to build a 5-tonne-per-day production line. The Smart-funded pilot data, converter trials and lifecycle evidence provided the independent proof investors and partners required, de-risking scale-up and validating performance on commercial equipment.

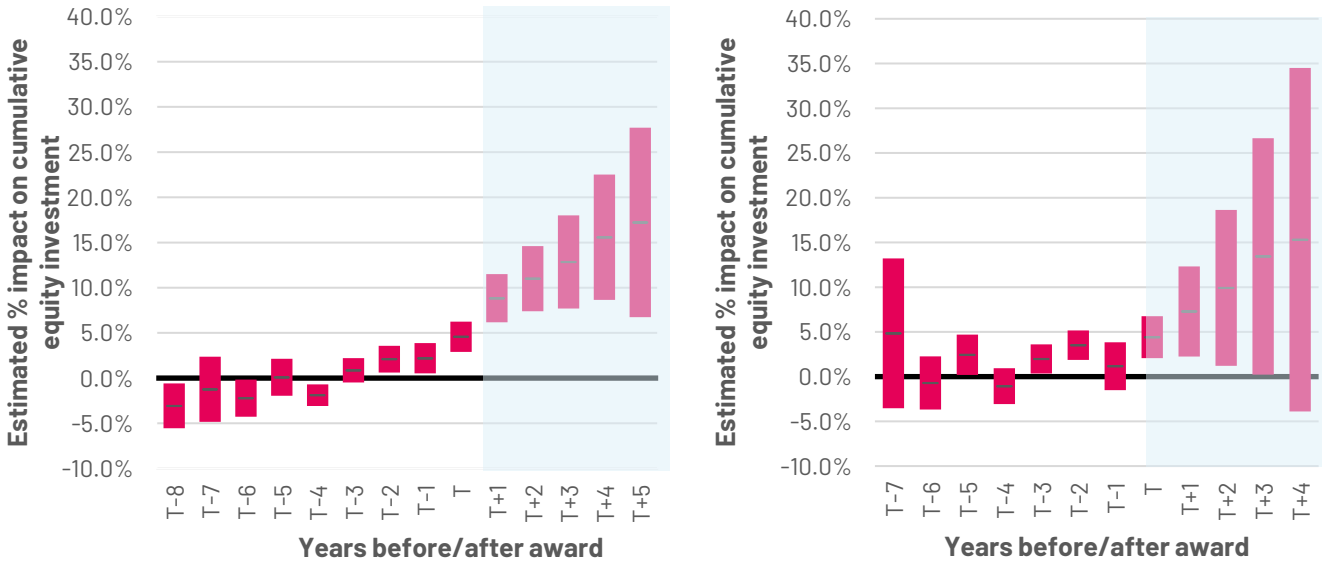
4.5.3 Estimated impact on private investment leveraged

The econometric analysis indicated that the Smart Grants programme had a sizeable impact on companies' ability to raise private equity investment. Based on both comparisons between firms awarded grants and high-scoring declined applicants and comparisons between firms awarded grants at different points in time:

- Smart Grants were estimated to increase the total amount of private investment secured by firms by 8.3 to 10.0 percent on average by the end of 2024. This represents investment that would not have been raised in the absence of the programme – both as a consequence of higher shares of firms raising funding and higher deal values.

- As illustrated in Figure 4.8, the impact of the programme appears to increase with time, with the estimated effect of the programme on private fundraising rising from 15.0 percent to 17.2 percent after five years (for firms awarded funding in 2019).

Figure 4.8: Estimated impact of Smart grants on cumulative equity fundraising by the end of 2024 (left panel: comparisons with high scoring declined applicants, right panel: comparison between firms awarded funding at different times)



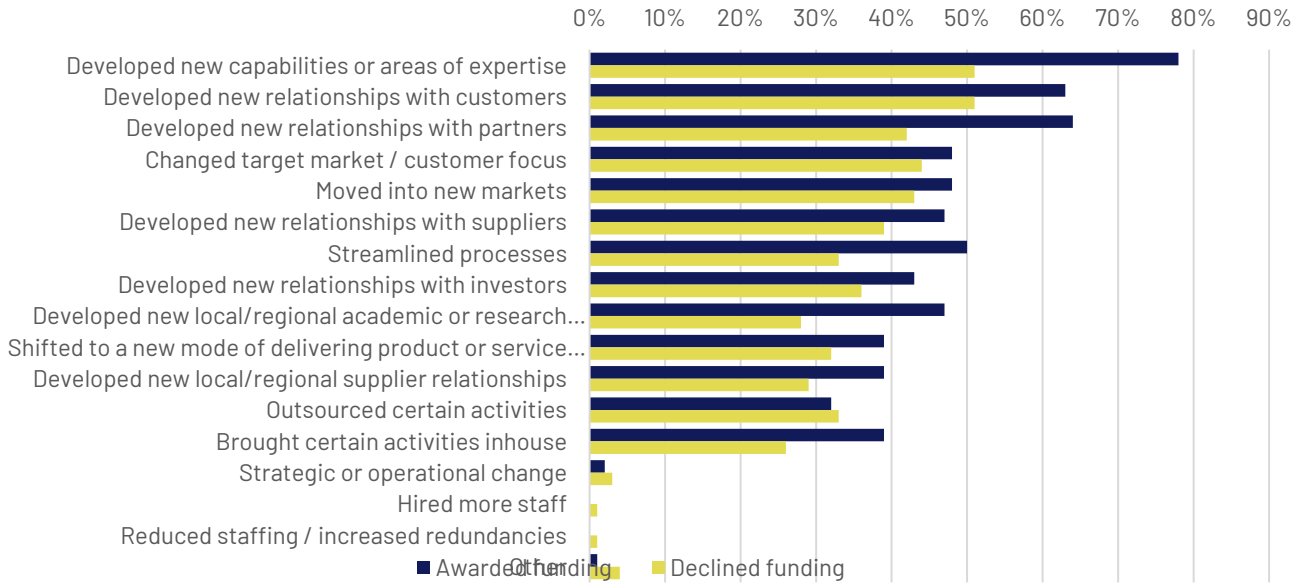
Source: PitchBook. Ipsos defined user query. Lead applicants only. T equals year grant awarded. Post grant effect period shaded light blue. Error bars indicate 95% confidence intervals.

4.6 Business model changes

As shown in Figure 4.9, both firms awarded funding reported a wide range of improvements in their business practices since the time of applying for Smart Grant funding and were more likely to do so than firms that were declined, including:

- Developing new capabilities or areas of expertise (78 percent compared to 51 percent)
- Developed new relationships with customers (63 percent compared to 51 percent) and partners (64 percent compared to 42 percent). These changes were also more likely to be reported by those who indicated that their project enabled collaboration with other organisations
- Streamlining their business processes (50 percent compared to 33 percent)
- Developed new local/regional academic or research outputs (47 percent compared to 28 percent).

Figure 4.9: Reported business model changes since the time of applying for Smart Grant funding



Source: Ipsos Survey. Base: All respondents n = 399 (Awarded funding), n = 418 (Declined funding).

The case studies identified several key examples where funding from the Smart Grants programme led to a significant shift in the strategy of businesses that received funding. In one case, a firm received funding to develop custom 3D-printed breast forms for women post-mastectomy that were cheaper and more efficient to produce than existing market offerings. Whilst the project was successful in developing the technology, user testing uncovered that the demand for a customisable product was limited amongst its target audience and so they pivoted their commercial strategy, stopped the development of a customisable product and instead increased their size range offering.

Case study – Surgical monitoring and data capture technology

Smart Grant funding was provided to digital health start-up that was developing a data-capture and analytics platform to measure surgical productivity. Whilst the project was successful in developing a working MVP demonstrated in a clinical setting, the project also led to a significant shift in the business' commercial strategy. Prior to implementation of the Smart Grant funded project, the businesses commercialisation strategy was to sell their productivity product directly to NHS trusts. However, working with clinicians and seeing the lengthy NHS procurement timelines as part of the Smart Grant project, the company pivoted their strategy to instead focus on selling to surgical device manufacturers. This new approach uses the same core platform but used to measure the effectiveness of medical devices in clinical trials of medical devices, with the manufacturers of these technologies being the buyers of their product. They also licence their IP internationally, with a global operator that runs multi-site programmes and shares revenues back.

4.7 Skills and knowledge outcomes

4.7.1 Skills and capability development

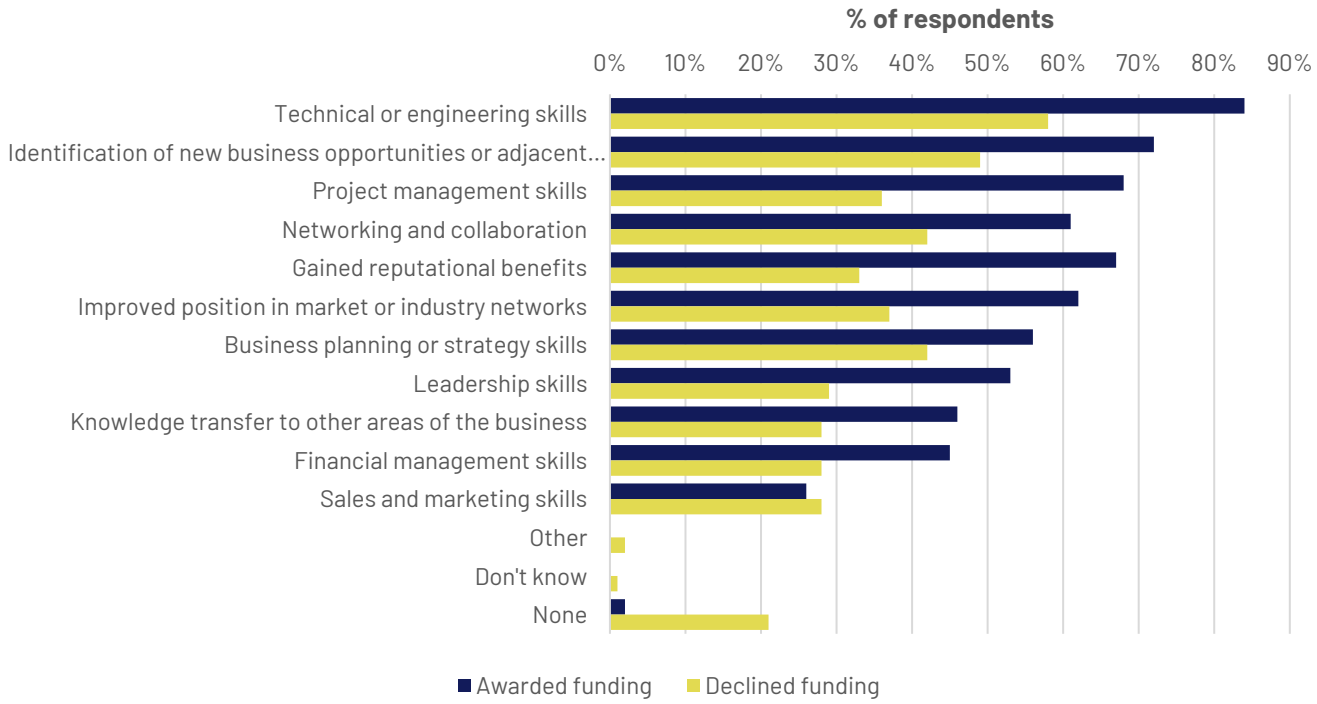
The case study research indicated that the Smart Grants consistently helped firms build lasting capabilities as well as prototypes. Teams reported significant improvements in skills in terms of how they planned R&D projects, the ability to navigate regulations and standards and prepare for investment and scale-up. Much of

this learning persisted beyond the grant - organisations maintained the project discipline, tooling, datasets and QA habits they built under Smart, and used them to accelerate follow-on work and funding.

"We learned how to work with universities—not just the science, but IP, data-sharing and getting to publishable, citable results."
Transport analytics company

The survey data also indicated that firms awarded Smart Grants funding were more likely to report gaining skills since the time of application across a wide range of areas. This included a statistically significant difference in the proportion of survey respondents indicating they had gained technical, project management, networking, business planning, and leadership skills.

Figure 4.10: Skills gained in the time since applying for Smart Grants funding



Source: Ipsos Survey. Base: All respondents n = 399 (Awarded funding), n = 418 (Declined funding).

4.7.2 Knowledge-based outputs

The survey indicated that many projects resulted in new knowledge-based outputs – including invitations to speak at trade or policy forums (45 percent), new patent fillings (44 percent), media coverage (43 percent), testimonials and case studies from clients or partners (41 percent), and publication of white papers (36 percent). The case study evidence highlighted several cases where the formal and informal knowledge generated by projects produced spillover benefits, including:

Standards and methods

One project involved the development of standards and procedures for underground freight that reportedly fed directly into Department for Transport's thinking around the future of freight.

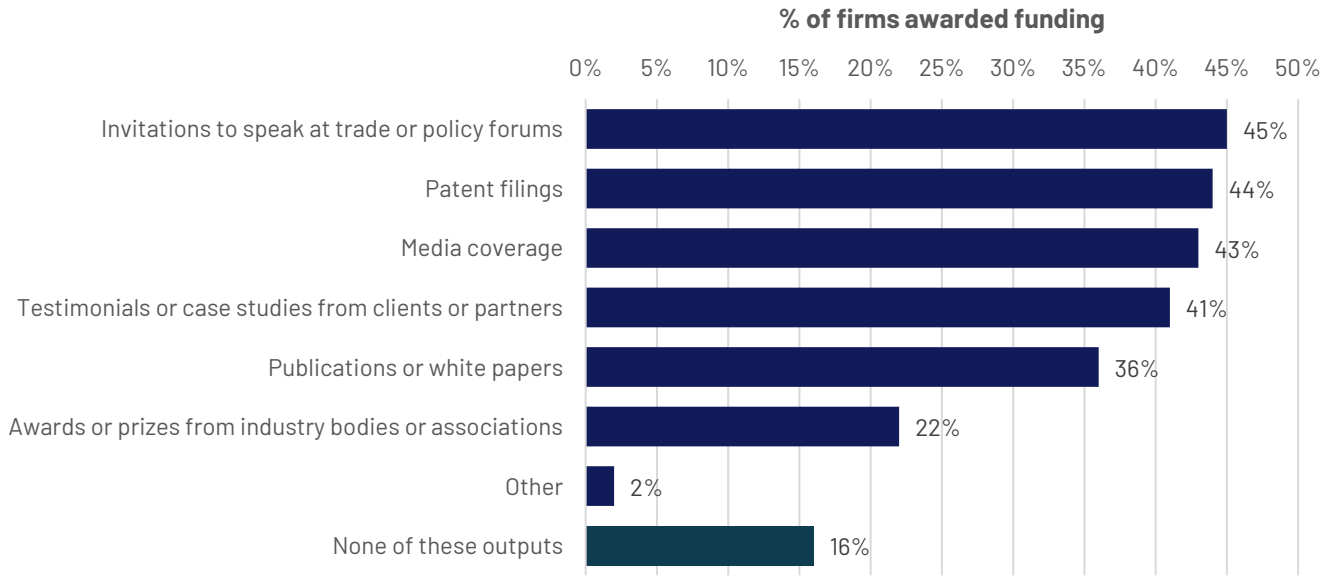
New technical insights adopted by others

Examples include one project that discovered an unrecognised yield-supressing pathogen in hydroponics that are reportedly shaping wider practices amongst growers and seed companies.

Supply chain benefits

Subcontractors in the delivery of projects often reportedly benefitted from the delivery of projects. For example, the development of heat-flux sensors in one project enabled the printed-electronics partner to develop new capabilities (firmware, cloud pipelines) and is now able to offer these services to other customers.

Figure 4.11: Knowledge based outputs from Smart Grant projects



Source: Ipsos Survey. Base: All respondents n = 399 (Awarded funding)

5 Economic impacts

This chapter sets out the findings of the evaluation in relation to the economic impacts achieved through the Smart Grants programme. This builds upon evidence from the secondary data analysis, applicant survey and case studies to explore the overall success achieved, extent of commercialisation of innovations forming the focus of the grant, firm level growth and productivity impacts and impacts on regional development.

5.1 Key findings

The Smart Grants programme was found to have supported firms to successfully expand and commercialise the innovations the focus of the grant in turn generating a range of economic outcomes. The key findings were:

Commercialisation successes:

One quarter (25 percent) of projects had successfully commercialised the innovation the focus of the Smart Grant rising to 62 percent of completed projects. This was most predominantly through sales of the produce/service. In total, applicants with successful projects in the survey were generating £75.4m in sales annually from the innovation developed through the Smart project. A significant proportion (16 percent) of successful projects had also exhibited global success, either through significant international revenue or expansion overseas.

Impacts on firm growth

The econometric analysis found significant impacts on the growth performance of firms receiving Smart funding:

- Employment impacts: Overall, each grant was estimated to have led to an expansion in the employment of applicants of 4 percent with impacts appearing one year after grants were awarded with the estimated impact peaking around 2 to 3 years after award. In total, Smart has supported an estimated 4,889 jobs since 2019/20.

- Turnover: The findings also suggested that each grant led to an increase in the turnover of successful firms of around 6 percent.

- GVA: The analysis suggested that each grant awarded led to an increase of around 4 percent in total firm output. These impacts also begin to appear after two years and persist for at least another two.

- Expansion in exports: Grants also appeared to have enabled recipient firms to enter export markets. Twenty four percent of successful applicants in the administrative had entered export markets following grant award. Econometric analysis found statistically significant increases in exports with Smart grants linked to around a 3 percent increase in export revenue.

Productivity improvements associated with Smart Grants

Econometric analysis identified improvements in productivity associated with Smart Grants both in terms of impacts on worker wages and direct impacts on GVA per worker. Smart grants were shown to have had a positive effect on hourly earnings for workers at successful applicants of around 1.5 percent and an impact

of around 2.3 on GVA per worker. Total increases in output linked to productivity gains were generated using the latter and estimated at £610m by the end of 2024/25.

5.2 Overview of commercialisation and growth outcomes

5.2.1 Growth in employment and revenues

A high proportion of firms awarded Smart Grants achieved significant growth in employment and turnover after being awarded grants. Based on analysis of ONS administrative data (the Business Structure Database and the Annual Business Survey):

- Scale-ups: 17 percent of firms receiving funding grew from being an SME to a large firm (either in terms of their employment or turnover in the year 2024). This compared to 12 percent of declined applicants.

Table 5.1: Proportion of firms awarded Smart Grants and declined applicants becoming large

Indicator	Successful applicants (%)	Declined applicants (%)
Firms progressing from SME to large in terms of employment	14	10
Firms progressing from SME to large in terms of turnover	16	12
Firms progressing from SME to large in terms of employment or turnover (scale-ups)	17	12

Source: Business Structure Database and Annual Business Survey. ONS. Ipsos analysis.

Table 5.2: Proportion of firms awarded Smart Grants and declined applicants by size in 2024[5]

Size in 2019	Size in 2024				
	Ceased trading	Micro	Small	Medium	Large
Micro	49%	8%	31%	8%	5%
Small	24%	7%	27%	20%	22%
Medium	4%	-	3%	46%	47%
Large	-	-	-	2%	98%

Source: Business Structure Database and Annual Business Survey. ONS. Ipsos analysis.

- High-growth companies: 19 percent of firms awarded grant (predominantly microbusinesses) experienced a 'high-growth episode' after receiving a grant – defined as three consecutive years of 20 percent year-on-year growth in employment. This compared to 8 percent of declined applicants.

[5] Size categories determined by having met either the employment or turnover criteria.

- Entry to export markets: 24 percent of firms awarded grants entered export markets for the first time following the awarded of the grant (compared to 11 percent of declined applicants. This finding is based on responses to the Annual Business Survey and may biased towards larger firms.

- Failure rates: It should also be noted that the Smart Grants programme is characterised by a high risk to reward ratio. 35 percent of firms awarded grants ceased trading following their application for funding (compared to 31 percent of declined applicants).

Table 5.3: Employment and turnover growth metrics – firms awarded Smart Grants and declined applicants

Indicator	Successful applicants (%)	Declined applicants (%)
Firms ceasing trading after grant application	35	31
Firms experiencing a high growth episode after application (3 years of 20% YOY growth)	19	8
Firms progressing from SME to large in terms of employment or turnover (scale-ups)	25	16
Firms entering exports markets for first time after application	24	11

Source: Business Structure Database and Annual Business Survey. ONS. Ipsos analysis.

5.2.2 Level of success

Applicants responding to the applicant survey were categorised into groups based upon the level of commercial 'success' achieved to date based on the typology set out in Table 5.2. Firms that were awarded funding achieved considerably greater levels of commercial success than those declined funding (65 percent of which had either abandoned the development of the innovation or had experienced significant barriers to securing private investment – resulting in stalled projects).

Table 5.4: Overall commercial success by the end of December 2025

Indicator	Awarded grants (%)	Declined applicants (%)
Globalisation successes – evidence of (a) significant expansion in international revenues and/or (b) internationalisation of operations (i.e. growth in employment in overseas locations). Defined as businesses that reported (1) commercialisation outputs from the project and either (2) achieved at least £0.5m of sales from the innovation or turnover growth exceeding £0.5m and reported international scope of adoption or (3) expanded their overall employment while establishing new overseas locations.	16	7
Other commercialisation successes – evidence that the company has begun commercial sales of the innovation in domestic or international markets. Defined as businesses that reported commercialisation outputs from the project.	11	5
Investment successes and scale-ups – companies raising significant levels of external private investment following delivery of the Smart Grants project or saw significant employment growth but remained at pre-commercial/ developmental stages. Defined as businesses that raised over £2m in private funding or hired more than 20 workers since being awarded funding and not already captured in the first two groups.	38	18
Barriers to commercialisation – companies that have completed – or are approaching the completion – of development activities but have yet to achieve any significant commercialisation outcomes. Defined as companies reached TRLs 7 and above but have not reached the point of having discussions with potential customers	1	0
Barriers to private investment – companies that have failed to raise significant levels of private investment since being awarded Smart grants funding and appear to have stalled. Defined as companies not yet progressing beyond TRL5 and have not raised any private investment.	12	30
Dead ends – innovations that have been abandoned (focus on establishing the issues encountered – e.g. technical or commercial viability problems). Defined as businesses reporting their project was abandoned or postponed.	14	35

Source: Ipsos Survey. Base: All respondents n = 399 (Awarded funding), n = 418 (Declined funding).

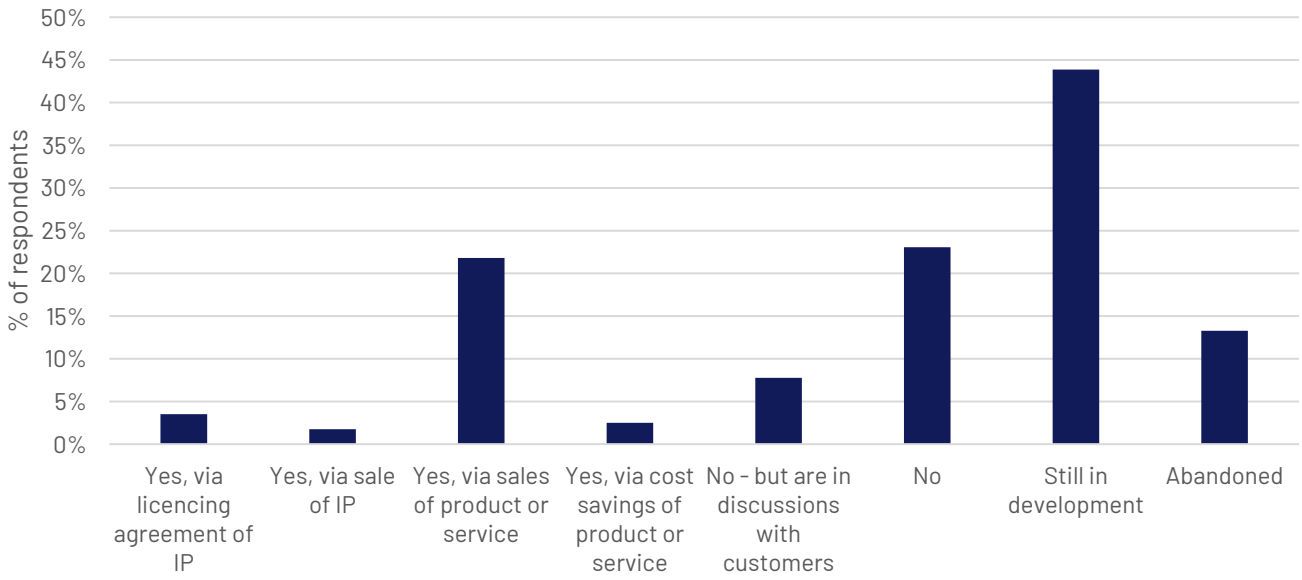
5.3 Commercialisation

Firms awarded grants reported a range of commercialisation outcomes following project completion:

- Of the firms that received funding, 25 percent reported some form of commercialisation outcome as illustrated in the figure below. The majority of those reporting such outcomes reported having achieved some sales of the product/service the focus of the project (21 percent of successful applicants compared to 9 percent for unsuccessful) with licensing agreements and IP sales less common.

- An average of £832,840 in annual sales, income from licensing or cost savings (from the innovation forming the focus of the Smart grant) was reported by successful applicants that had achieved one of these commercialisation outcomes.

Figure 5.1: Commercialisation outcomes



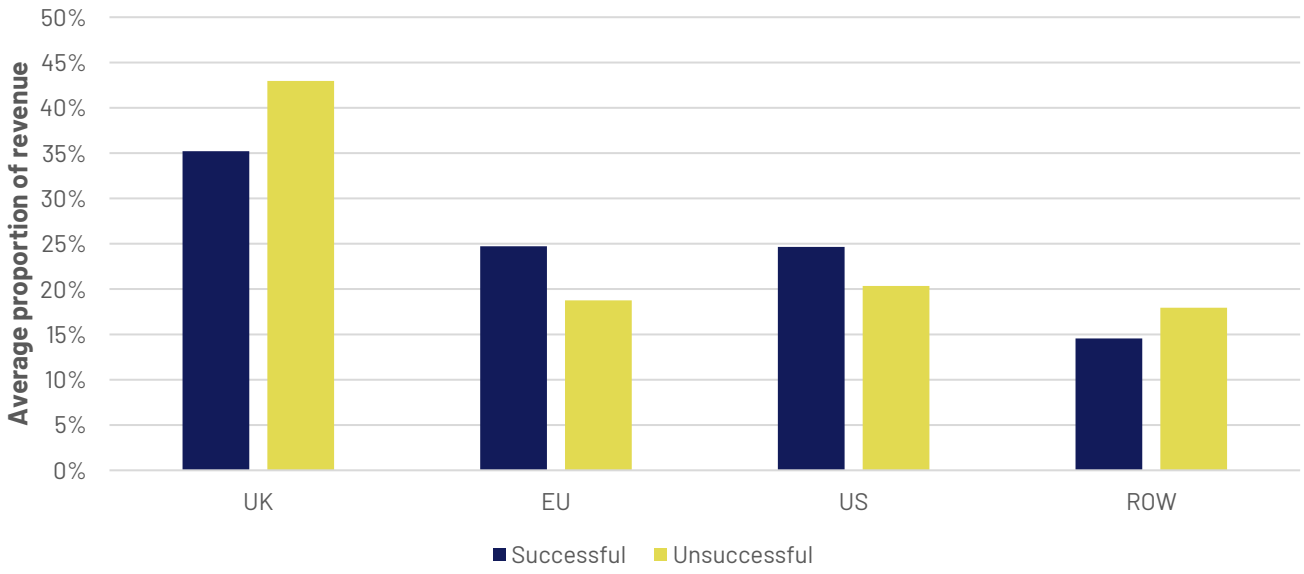
Source: Ipsos Survey. Base: All respondents n = 399 (Awarded funding)

5.3.2 Internationalisation

There was also evidence that firms awarded Smart Grants have had success in accessing international markets and globalising their business:

- 37 percent of firms reporting having had their innovation adopted in both UK and overseas markets.
- Of the firms generating revenue from the innovation the subject of the Smart Grant, the largest share of revenue came from UK based customers (35 percent of sales) with 65 percent of sales coming from international markets. The EU and US each accounted for around 25 percent revenues.
- Relative to the distribution of sales reported in Section 3, this represents a significant expansion in export activity (where domestic markets accounted for almost 75 percent of sales prior to the award of the Smart grant). Additionally, sales had greater international scope relative to innovations that had been commercialised by declined applicants.
- Respondents to the applicant survey were asked about the proportion of workers employed by them in the UK, EU, US and rest of the world before grant application and at the time of the survey taking place. The share of workers employed overseas rose slightly from 4 percent 9 percent – suggesting that while firms had expanded their overseas operations, they remained predominantly focused on the UK.

Figure 5.2: Income streams for commercialised projects



Source: Ipsos Applicant Survey 2025

Evidence from the case studies also demonstrated a significant degree of progress towards commercialisation, primarily from sales revenue. A range of businesses reported having successfully commercialised their innovations and were generating recurring revenue. These included multi-million annual revenues for a company developing gene therapy products from across US, Europe and Asia markets, a climate tech company generating sales from across North America and Europe to an aerodynamic technology company that has established relationships with 8 to 9 high value customers earning them a consistent revenue stream.

Case study - Climate/data startup

A climate technology startup building smart, access-controlled food-waste bins that weigh and attribute waste to users, delivering compliance evidence, cost control and emissions insights via subscription software. The Smart project funded a pivot away from an app-only concept to an integrated hardware–software system. The Smart Grant project was instrumental in the transition, enabling the development of the initial smart bin prototypes. These first versions were described as "big and heavy and ugly," with short battery life, but they successfully proved the concept. A successful trial with the NHS using these early prototypes validated the market need. The company is now generating revenue through annual subscriptions for its smart bins and customers include multiple NHS Trusts, independent schools, office blocks, restaurants, hotels, and care homes. As a direct result of the project, the company has been granted a patent for its smart bin technology and has plans to expand into the European market in 2027. Without Smart the firm reported that it would likely have folded before reaching market.

5.3.3 Barriers to commercialisation

In terms of barriers to commercialisation, of the respondents to the survey that reported not having commercialised to date, 33 percent attributed this to technical challenges in developing the innovation to a marketable state whilst 25 percent highlighted timeline challenges in developing the innovation to a marketable state. In addition, a further 18 percent reported a lack of funding as the reason for not having

commercialised the innovation so far. Barriers to commercialisation were reported by firms regardless of how far they delivered against the technical objectives of the grant.

A small group of firms in the case studies were identified as being pre-revenue and facing some remaining commercialisation challenges. These were primarily those in deep-tech or long-term infrastructure, which had not yet generated revenue and faced ongoing challenges in securing the large-scale funding required for commercialisation in these sectors. Examples included a private development company developing innovative underground networks for freight transportation which had not generated revenue to date and had been held back by the lack of public support for such infrastructure investment to date. Another example was a deep tech firm developing carbon capture solutions that was still in the R&D phase and was focused on building a fully functional prototype to attract partners and investors.

5.4 Growth impacts

The econometric analysis indicated that the Smart Grants programme led to significant expansion in the growth of firms supported - both in terms of turnover and employment.

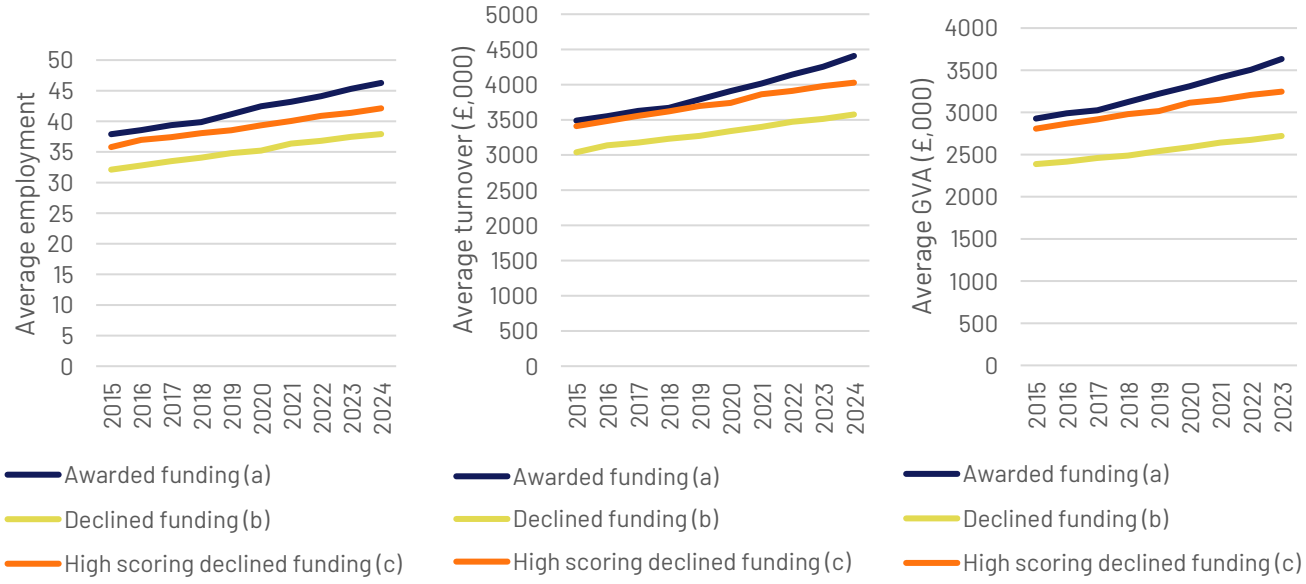
5.4.1 Employment, turnover & GVA

The econometric analysis provides the primary source of evidence of the impacts of the programme on the expansion of firms (as visible in employment, turnover and GVA). Impacts on employment, turnover and turnover per worker were all explored using the Business Structure Database (BSD), an annual snapshot of the Interdepartmental Business Register that provides yearly observations of employment and turnover of all firms registered for PAYE or VAT. GVA was explored using the Annual Business Survey (ABS). Analysis of recent trends across these variables amongst the firms receiving Smart grants and those applying but not receiving grants showed:

- Employment and turnover: Firms that were awarded grants grew on average, both in terms of employment and turnover. Employment and turnover for successful applicants both rose by 21 percent and 27 percent respectively between 2015 and 2024, whilst high scoring unsuccessful firms grew at a slower rate of 17 percent and 19 percent for employment and turnover respectively.

- GVA: A similar trend was evident for GVA with increases between 2015 and 2023 larger for successful applicants relative to unsuccessful and high scoring unsuccessful.

Figure 5.3: Employment, turnover and GVA between 2015 and 2024



Source: Business Structure Database, ONS, Ipsos analysis.[6]

The findings of the econometric analysis indicated that the programme led to substantial impacts on the growth of applicants (and as shown in the following section, led to economic benefits that exceeded the social cost of the programme):

- Employment impacts: Smart Grants were estimated to have led to an on-going expansion in the employment of applicants of 4 percent. Applying this result to the average number of workers employed by firms prior to their application for funding, and the number of grants awarded, implies that the programme may have created or safeguarded 4,889 jobs.

- Turnover: The findings also suggested that each grant led to an increase in the turnover of successful firms of around 6 percent. Turnover impacts begin to appear after two years and persisted for the next three years. This provides a strong indicator that the Smart Grants programme has been effective in supporting rapid commercialisation outcomes (and few evaluations of other Innovate UK programmes have shown turnover impacts being realised over these types of time horizon).

- GVA: The analysis suggested that each grant awarded led to an increase of around 4 percent in total firm output (GVA) – implying that the effects of the programme on commercialisation have translated into overall economic growth outcomes (i.e. firms are not simply meeting the additional demand by increasing their purchases of goods and services).

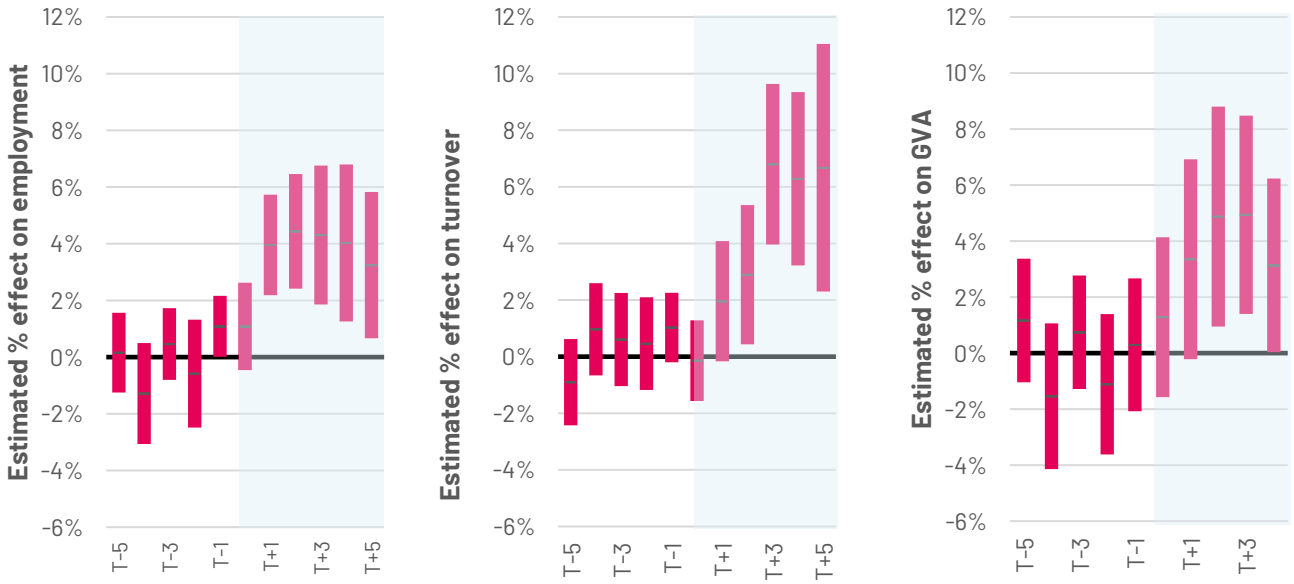
- Exports: Smart Grants also appeared to have a significant impact on export sales (not shown in the figure below). The analysis found statistically significant increases in exports with Smart grants linked to

[6] 50 percent trimmed means were used to reduce the influence of outliers. This removes the top 25 and bottom 25 percent of firms the mean calculation.

around a 3 percent increase in export revenue. Effects appeared from two years post award to three years post suggesting that grants and enabled firms to expand into export markets albeit temporarily. However, it should be noted that there is a significant degree of uncertainty with effects at the extreme end of the period of interest given the sampling structure of the ABS and the relatively fewer grants for which 4 years post data is available.

The Figure below illustrates the estimated persistence of impacts on employment, turnover and GVA described above, with the error bars indicating the 95% confidence intervals.

Figure 5.4: Estimated impact on overall employment, turnover, and GVA



Source: Business Structure Database, ONS, Ipsos analysis. Post grant effect period shaded light blue. Error bars indicate 95 percent confidence intervals.

Across the case studies, several companies highlighted export growth as being a significant source of their revenue since project completion. In four case studies, significant sales outside of the UK were reported. In a further three cases there were ongoing plans and operations to expand into other markets, but which were not fully established and there were also a further three cases where attempts had been made to generate engagement and sales overseas, but which were less successful to date.

Case study – AI based logistics startup

An AI based startup focussed on reducing inefficiency and human error involved in the risk assessment of imports and exports. The project aimed to create an intelligent triage tool to augment the capabilities of human assessors. The system was designed to automatically ingest data, assess risk, and present a simple "traffic light" signal (high concern, alert, or no problem) to the human operator, allowing them to focus their attention on the most critical packages.

The Smart Grant project was designed to develop and integrate several key technologies including refining the core AI algorithm for identifying high risk parcels, build components capable of reading and digitising information from invoice and receipts and develop an in house component similar to a Large Language Model (LLM), to manage the flow of data between the digitised information and the risk assessment engine. Initially the digitisation component would be the critical part of the innovation, however experience through the Smart project indicated that it was the AI risk assessment tool that was the most promising for potential customers.

Having successful completed the project, the company has generated sales from a range of places with the UK representing a relatively small part of their annual revenue (around 5 percent). Their primary markets are in North America (Mexico and Canada) and Europe. The development of a mature, tested, and adaptable product through the Smart Grant project gave the company the credibility and capability to pursue and secure international customers. The success of the project and the subsequent commercial success in export markets enabled the company to secure funding in the US and it was accepted into a US-based accelerator, which provided further investment following project completion.

Case study – Biotherapeutic development company

A spin-out from the University of Oxford, the firm is a producer of a technology called mass photometry. At the time of the Smart Grant application in September 2020, the company was a small enterprise of 18 employees, focused on a research-oriented market. The Smart project aimed to address challenges in the development of gene therapies, specifically relating to measurement of genetic material in the manufacturing process. The Smart Grant project was designed to adapt and refine the company's core mass photometry technology to create a new, dedicated instrument for this specific application.

The project met its technical aims and directly led to the creation of a product tailored for the global biopharma industry. This is on sale and had generated around £3m in annual revenue primarily to overseas customers. The USA was identified as the company's single biggest market, but sales were across the world including Europe and Asia.

Since project completion the company has also expanded its operations overseas and opened a site in the USA to directly support its largest market.

The company also highlighted the role of the Cell and Gene Therapy (CGT) Catapult in supporting market access by providing the company a degree of credibility with which to approach international customers.

5.5 Productivity gains

The econometric analysis also explored the impact of the programme on a range of indicators of productivity – including the wages of the workers employed by those receiving grants, turnover per worker (which approximates changes in productivity provided the firms' relative consumption of goods and services is not altered by the programme), and GVA per worker. These findings indicated:

Wage effects

The results of the analysis showed that Smart grants had a positive effect on hourly earnings for workers at successful applicants of 1.5 percent, though there were no significant effects on hours worked. This could be interpreted as a signal of productivity gains (as in competitive labour markets, a marginal increase in labour productivity should be reflected in a marginal increase in the wage). However, it may be that additional demand for workers has leaked into wage inflation (which is more difficult to interpret as a productivity effect). It is also possible that this may reflect a 'grant-sharing' effect (in which the firm rewards its employees for securing a grant) or that the programme pushed up equilibrium wage levels.

Analysis of the wage impacts over time indicated that the onset of wage effects coincided with turnover and GVA per worker impacts and persist until 3 years after grant award. This implies that any potential productivity effect brought about through funded projects may be temporary, however there remains a significant degree of uncertainty attached to these results given the relative lack of employees at SMEs sampled consistently in the ASHE across the firms of interest.

Workers in higher skill occupations tended to see stronger growth in earnings than those in lower skill occupations. Those in managerial, professional and technical and in skilled trade occupations saw their earnings rise by around 2.2 percent in response to the grant whilst no effects were identified for those in lower-level service sector roles or those in the lowest skilled elementary occupations.

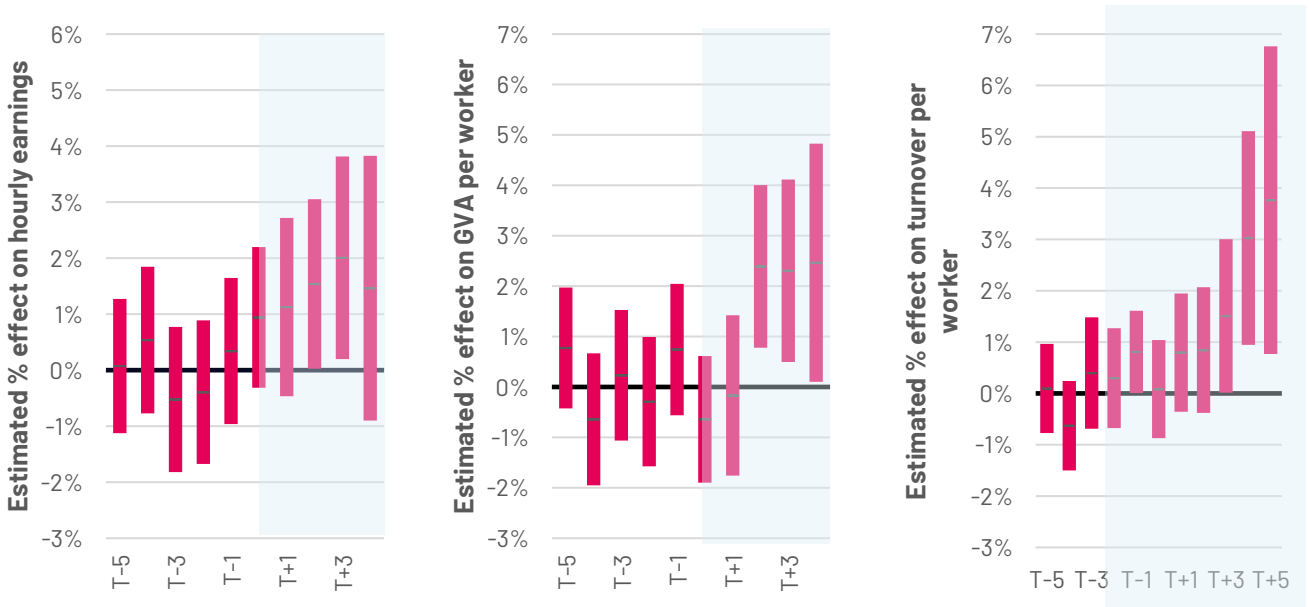
Turnover per worker

The econometric analysis found statistically significant effects on turnover per worker from 3 years after a grant award persisting until at least 5 years post award. This suggested a 2.2 percent increase in turnover per worker peaking at just under 4 percent 5 years after award.

GVA per worker

There was some evidence of an effect on GVA per worker two to four years after grant funding was awarded. This lines up with the timing of GVA impacts observed above and implies that productivity rose as innovations began to be exploited.

Figure 5.5: Estimated impact on GVA per worker



Source: Business Structure Database and Annual Business Survey, ONS, Ipsos analysis. Post grant effect period shaded light blue. Error bars indicate 95 percent confidence intervals.

5.6 Regional development impacts

Econometric analyses were completed to explore the indirect effects of Smart grants at the local level. This was achieved by refocusing the analysis on Output Areas (a small geographical unit used for the reporting of Census statistics) within a predefined distance of firms benefitting from the grants. The results of the econometric analysis suggested that:

Local economic performance

The evidence indicated that Smart grants had a positive net economic impact on local economic growth and productivity. The impacts included:

- Each grant led to a 0.4 percent increase in the number of jobs in Output Areas within 2km of the grant recipient and a 0.7 percent increase in the turnover of firms based in the same area. Impacts on turnover per worker of around 0.35 percent were present from 2 years post award and persisted for at least another two years. These area level impacts are broadly comparable to those observed amongst the firms receiving funding, suggesting that any displacement or crowding out effects at the very local level were negligible.

- Limited impacts within proximate areas: There was limited evidence of positive economic impacts at distances of 2km to 10km from those awarded funding. A small effect was identified in OAs 5km to 10km away three years post award on employment and turnover of 0.1 and 0.2 percent respectively.

Clustering

There was no evidence of Smart grants encouraging firms to locate to the areas in which grant recipients were located suggesting limited local clustering.

These findings suggest that the firm level economic impacts of Smart Grants have not come at the expense of local competitors and the lack of significant local economic spillovers is indicative of regional, national, or international supply chains.

Analysis was also undertaken to explore the effects on OAs of varying levels of productivity before the programme began. Baseline productivity (GVA per worker) was used to segment Lower Super Output Areas (LSOAs) into three equal groups, one containing the lowest third in terms of estimated GVA per worker in 2019, a second with the middle third and a third containing the most productive areas in 2019. The econometric modelling approach was then applied to explore differences in effects across employment, turnover and turnover per worker for these three types of areas. The analysis indicated negligible differences in the estimated significance and scale of effects across these areas (summarised in the table below). This suggest that Smart Grants have helped all types of areas to grow and have neither narrowed nor widened existing disparities across areas.

Table 5.5: Impacts by distance from grant recipient and baseline productivity of areas

	Employment	Turnover	Turnover per worker
By distance from successful applicant			
Within 2km	0.5%	0.8%	0.2%
2km to 5km	-	-	-
5km to 10km	-	-	-
By baseline productivity of local economy			
Low	0.5%	0.7%	0.1%
Medium	0.4%	0.7%	0.2%
High	0.7%	0.8%	0.1%

Source: Business Structure Database, ONS, Ipsos analysis.

6 Value for Money

This section presents the findings of the economic evaluation of the Smart Grants Programme. The assessment of the economic costs and benefits draw on the findings from the econometric analysis presented in sections four and five above. This explores the relationship between the net costs of the programme (in terms of R&D investment stimulated) and its economic benefits (in terms of productivity gains).

6.1 Key findings

Achieved a low level of deadweight

Monitoring data indicated that the total project costs at the end of 2024/25 were £747m, of which £403m was funded by the public sector. Over the lifetime of Smart projects, estimated total impacts on R&D spending implied that 78 percent of spending would not have occurred in the absence of the programme (implying deadweight of 22 percent).

Leveraged R&D spending beyond the lifetime of projects

The Smart Grants programme was found to have 'crowded-in' additional R&D spending beyond the lifetime of the grant with an overall impact on R&D spending of £1.58 per £1 of public spend to date (expected to rise to £2.65 per £1 of public spend by 2032/33). This gives a leverage ratio of £0.58 of private R&D spending per £1 of public spend to date which is also expected to rise to £1.65 of private R&D spending leveraged per £1 public spend by 2032/33.

Leveraged private equity investment

Econometric analysis indicated that Smart Grants leveraged between £298.1m and £358.4m in private investment between 2019 and early 2025. This gives an overall leverage ratio £1.00 to £1.20 of private investment per £1 of public spending to date and an estimated five-year leverage ratio of between £4.24 and £4.86 per £1 of public spending.

Directly boosted GVA

Smart grants awarded between 2019/20 and 2024/25 led to an estimated overall increase in GVA of £820m by the end of 2024/25. Including future impacts, it is estimated that Smart grants will lead to an overall increase in GVA of £1.8bn by the end of 2032/33. Given public funding of £403m, this equates to £2.18 in GVA per £1 of public spend by the end of 2024/25. By 2032/33 this is estimated to be £4.47 of GVA per £1 of public spending.

Led to significant productivity improvements

Smart grants were found to have led to improvements in GVA per worker directly and also productivity improvements through the reallocation of labour to higher value jobs offering higher wages:

- Short term productivity improvements: Estimated at £610m (£529m in present value) by the end of 2024/25. The lifetime value of these benefits (up to 2028/29 for currently funded projects) was estimated at £900m (£754m in present value). By 2032/33, there was an estimated £1.5bn in productivity improvements by 2032/33 (£1.2bn in present value).

- Productivity improvements from reallocation: The additional number of job years safeguarded by the programme was estimated at 13,811 by 2024/25 and 29,595 by 2033/34 (when modelled future impacts are included). Given the wage premium associated with these jobs, the total value of created/safeguarded output by the end of 2024/25 was estimated at £156m (£137m in present value) with lifetime benefit estimated at £335m (£261m in present value).

Benefit to cost ratio

The return on public sector investment was estimated to be £1.27 in net economic benefits per £1 of public sector cost by 2024/25. This was expected to rise further to £2.65 per £1 of public sector cost by 2033/34. This indicates that the Smart Grants programme that ran from between 2019/20 to 2024/25 had broken even by the end of 2024/25 and the value for money was expected to grow significantly in the future as effects from projects funded later in the programme filter through.

6.2 Cost effectiveness

Additionality and deadweight

An assessment of the 'economy' associated with public programmes relates to how far they have achieved their objectives at the lowest possible cost to the taxpayer. In the context of R&D support programmes, the principal risk is that public funds are used to support activity that would have been taken forward with private sector resources (i.e. deadweight). A quantitative assessment of the level of additionality associated with the programme can be provided by examining the relationship between its effects on the overall level of R&D spending and the public funding provided. If public funds are used solely to support private sector activity that would have happened anyway, then overall levels of R&D spending will not increase.

As set out in Section 6, the econometric analysis highlighted that the Smart Grants programme produced positive impacts on annual R&D expenditure that persisted for four years following the award of the grants. This creates some challenges for the analysis, as it there is some uncertainty around how far these impacts may persist further into the future. As such, the total effect on R&D spending was estimated over the following time horizons:

- Impacts over the duration of the grant: Based on Innovate UK, Smart Grant awards had a median duration of 17 months (assumed to be two years for the purposes of this analysis). Overall R&D spending impacts were estimated over these two years to obtain a direct measure of how far public funds were awarded to projects that would have been taken forward in the absence of public funding.

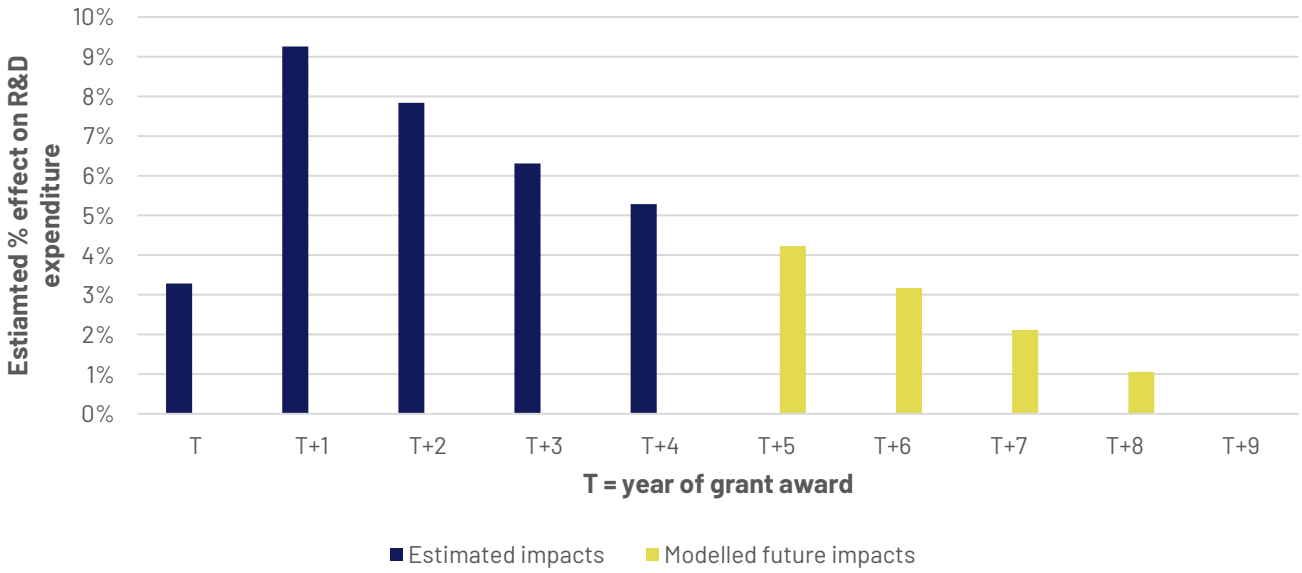
- Impacts to date: As the impacts of the programme appeared to endure beyond the lifetime of the grant, a second set of analyses were produced focusing on the impacts of the programme on R&D expenditure over the timeframe of the evaluation (i.e. 2019/20 to 2024/25). These analyses do not incorporate any possible future impacts of the programme.

- Future impacts: The final set of analysis incorporated estimates of the potential future impacts of the programme on R&D spending. This involved two sets of assumptions. Firstly, it was assumed that the future effects of more recent grants would evolve in line with older grants – implying that an assumption that the time distribution of impacts estimated using the econometric analysis could be generalised applied to all grants in the portfolio (noting that the estimated effects of the programme on R&D

spending four years post-award were largely based on the earliest cohorts of firms). Additionally, it was assumed that effects on R&D spending would continue to persist for a further five years, decaying at a rate of 20 percentage points per annum.

The following chart shows the estimated annual per grant effect on R&D spending over the period considered. These effects were applied to average annual R&D the average annual R&D spending of firms receiving Smart grants at the time of grant award[7] (£949,331) and the number of grants awarded in each year to develop estimates of the total impact on R&D expenditure over each period.

Figure 6.1: Estimated annual effects on R&D expenditure and modelled future effects



Source: Business Expenditure on R&D, ONS, Ipsos analysis.

The results of the analysis are set out in the tables below:

- Additionality and deadweight: It was estimated that the programme led to £315m in additional R&D expenditure over the period of the grant. This can be compared to £403m in public funding spent – indicating that 70 percent of the R&D activity supported by the programme would not have occurred in the absence of the programme. This implies a high rate of additionality of around 78 percent (or deadweight of approximately 22 percent).

- Impacts to date: The programme was estimated to have led to an increase in R&D spending £567m by the end of 2024/25 as the grants crowded in additional private investment following the completion of the grant. This implies that the programme leveraged £187m in additional private R&D investment by the end of 2024/25 – equivalent to a leverage ratio of £0.58 of additional private R&D per £1 of public spending.

[7] 50 percent trimmed means were used to reduce the influence of outliers. This removes the top 25 and bottom 25 percent of R&D performers from the mean calculation.

- Future impacts: Under the assumptions set out above, it was estimated that the programme would lead to a total lifetime increase in R&D spending of £1.1bn. This would imply £620m of additional private R&D spending and a leverage ratio of £1.65 of additional private R&D spending per £1 public spending. While there is uncertainty around the future impacts of the programme, this indicates that the programme is likely to prove a highly efficient mechanism for supporting R&D investment in the UK economy.

Table 6.1: Total R&D spending impacts

Effects on R&D spending during the grant lifetime (£m)	Effects on R&D spending between 2019/20 and 2024/25 (£m)	Effects on R&D spending between 2019/20 and 2032/33 (£m)
315	567	897

Source: Business Expenditure on R&D, ONS, Ipsos analysis.

Table 6.2: Leverage ratios - £1s of additional private R&D spend per £1 of public spending

Period	Total R&D spending impact (£m)	Public spend(£m)	Implied increase in private R&D spend (£m)	Leverage ratio
2019/20 to 2024/25	636	403	233	0.58
2019/20 to 2032/33	1,069	403	666	1.65

Source: Business Expenditure on R&D, ONS, Ipsos analysis.

Equity investment leverage ratios

These econometric findings were also used to estimate the total amount of private investment leveraged by the Smart Grants programme (i.e. investments placed in firms awarded funding that would not have occurred anyway) – based on the calculations set out in Table 6.3:

- Overall, it was estimated that Smart leveraged £298.1m and £358.4m in private investment between 2019 and the end of 2024. Based on public spending placed with lead applicants[8] of £297.5m, this gives an overall leverage ratio £1.00 to £1.20 of private investment per £1 of public spending.

- Given the pattern described above where the effects of the programme increase with time (and the fact that this analysis only captures the short-term effect of grant funding on more recent cohorts of firms awarded funding), this is likely to significantly understate the likely longer-term efficiency of the programme in leveraging private funding.

- To provide a view on the likely long-term returns of the programme, the analysis was reproduced to focus on the cohort of 315 lead firms awarded funding in 2019/20. For this group, it was estimated that

[8] Note that the analysis only covered lead applicants, so spending placed with subcontractors has been excluded.

Smart leveraged additional private investment of £272.2m and £312.1m, relative to public spending of £64.2m. This gives a five-year leverage ratio of £4.24 to £4.86.

- These early findings are also consistent with a view that Smart Grants programme that offers strong value for money in stimulating private investment, and benchmarks well against Innovate UK's most effective programmes. This includes the Biomedical Catalyst programme that was estimated to have leveraged £4.99 to £6.36 per £1 of public spending over the eight-year period between 2012 and 2018 (using similar methods and data sources).

Table 6.3: Estimated short-term and five-year leverage ratios (£s of private investment per £1 of public spending)

Scope	Range	Average amount raised after grant award (£m)	Estimated % effect of Smart on funding raised	Estimated average effect on funds raised (£m)	Number of firms awarded funding	Total effect on private investment (£m)	Total public spending (lead applicants only)	Leverage ratio (£s of private investment leveraged per £1 of public spending)
All Smart grants	Low	2.7	8.32	0.26	1325	298.1	297.5	1.00
	High	2.7	10	0.27	1325	358.4	297.5	1.20
Smart grants awarded in 2019/20	Low	5.8	15	0.86	315	272.2	64.2	4.24
	High	5.8	17.2	0.99	315	312.1	64.2	4.86

Source: Ipsos analysis.

Additional GVA per £1 of expenditure

A similar modelling approach to that used for R&D spending was adopted to explore cost-effectiveness in terms of the additional economic output (GVA) arising from the Smart Grants programme. The econometric analyses found that Smart Grants produced positive effects on GVA from two years post award that persisted for at least another two years. From this point, the GVA impact was assumed to decay to zero linearly for a period of five years to provide projections of the potential future impacts of the programme. GVA estimates were developed by applying the estimated annual percentage effect derived from the econometric results to the number of grant awards, and the average annual GVA of firms receiving Smart Grants prior to award[9] (£3,459,402). These results indicated that:

- Impacts to date: The programme was estimated to have to led to a cumulative direct effect on GVA of £820m between 2019/20 and 2024/25. This equates to £2.18 in additional GVA per £1 of public spending.

- Future impacts: Allowing for the future effects of projects funded, the estimated effect was projected to rise to £1.8bn by the end of 2032/33. This would equate to £4.47 of GVA per £1 of public spending.

[9] 50 percent trimmed means were used to reduce the influence of outliers. This removes the top 25 and bottom 25 percent of firms the mean calculation.

Again, while there are uncertainties around future outcomes, this would indicate that the programme is also highly cost-effective.

It should be noted that these GVA based metrics should not be taken as a measure of economic 'benefit' as they do not account for possible offsetting effects (such as the displacement of domestic competitors) or the investment costs incurred by the private sector in bringing these growth outcomes about.

Table 6.4: Total GVA impacts

Effects on GVA between 2019/20 and 2024/25 (£m)	Effects on GVA 2019/20 and 2032/33 (£m)
820	1,759

Source: Business Expenditure on R&D, ONS, Ipsos analysis.

6.3 Cost-benefit analysis

A cost benefit analysis (CBA) of the Smart Grants programme was completed in line with the guidance set out in the HM Treasury Green Book. This considers the value of the social and economic costs and benefits of Smart Grant funding.

6.3.1 Approach to the CBA

The cost-benefit analysis aims to relate the lifetime economic benefits of the Smart Programme to its economic and social costs. The CBA was prepared based on the following principles:

Economic benefits

In line with the guidance set out in the HM Treasury Green Book, only increases in the productive capacity of the economy should understood as an 'economic benefit'. Demand side impacts – such as the direct expansion in GVA estimated above – are likely to subject to offsetting effects elsewhere in the economy. Firstly, as firms expand, they are likely to displace sales – at least partially – from domestic competitors (causing them to reduce their overall levels of output and employment). Even where firms do not expand at the expense of domestic competitors, additional demand for labour and other inputs will place upward pressure on wages and prices – causing other firms to reduce their consumption of those inputs in response. As such, only improvements in economic efficiency should be incorporated. This analysis has been prepared on the basis that the programme will have two types of productivity effect:

- Direct effects on GVA per worker: The econometric evidence indicated that the programme led to an increase in labour productivity (GVA per worker). The value of these productivity gains has been estimated by applying the estimated effects of the programme on GVA per worker to the number of workers employed by firms and their average productivity levels prior to the grant award.
- Reallocation effects: The programme has also created highly skilled jobs, offering opportunities for workers to be redeployed into more productive roles. The movement of workers from less to more productive roles will also raise aggregate productivity, and the value of this effect has been estimated based on the 'wage premium' associated with jobs created by firms awarded funding (the difference between the average wage of workers employed by firms and average wages in the same industry).

R&D expenditure

The additional R&D expenditure induced by the programme represents a social cost – i.e. resources that have been deployed and would have otherwise been available for other purposes. Additional private investment in R&D has been subtracted from the estimated value of productivity gains for the purposes of calculating benefit to cost ratios.

Another direct cost of the programme would include the administrative costs incurred by Innovate UK in the management of the programme. This includes internal costs associated with the time spent by Innovate UK staff in bringing forward the competition rounds and overseeing the delivery of the project portfolio, and external costs (e.g. monitoring officers). These were not available to the evaluation.

6.3.2 Net benefits

Productivity gains

The principal benefits of the programme related to the productivity gains associated with the grants:

- Direct productivity gains: The econometric findings indicated that Smart grants have a statistically significant and temporary effect on GVA per worker of around 2.4 percent from two to four years post award. Assuming the estimated effects on GVA per worker continue to persist but decay linearly to zero over five years beyond this point, the value of aggregate direct productivity gains was estimated at:
  - Impacts to date: By the end of 2024/25, the cumulative GVA arising from direct productivity gains was estimated at £610m (£529m in present value terms, applying the HM Treasury recommended rate of social time preference of 3.5 percent).
  - Future impacts: By 2032/33, the programme is projected to result in an estimated £1.5bn in direct productivity gains (£1.2bn in present value terms).

Table 6.5: Total direct productivity gains

Effects on productivity between 2019/20 and 2024/25 (£m)		Effects on productivity between 2019/20 and 2032/33 (£m)	
Value (£m)	**PV (£m)**	**Value (£m)**	**PV (£m)**
610	529	1519	1221

Source: Business Expenditure on R&D, ONS, Ipsos analysis.

- Reallocation effects: The programme has also been effective in creating/safeguarding employment in more productive firms, offering higher wages than average for the sector:
  - Average impact per grant: The number of additional employment years created or safeguarded as a result of the programme was estimated using a similar approach to those adopted for estimating lifetime effects on R&D spending and GVA (with impacts beyond the lifetime of the available evidence assumed to decay over a period of five years). The modelling indicated that the programme created or

safeguarded a total of 13,800 employment years between 2019/20 and 2024/25 and was projected to result in 29,600 additional employment years created or safeguarded between 2019/20 and 2033/34.

Table 6.6: Total employment impacts

Effects on job years between 2019/20 and 2024/25	Effects on R&D spending between 2019/20 and 2033/34 (£m)
13,811	29,595

Source: Business Structure Database, ONS, Ipsos analysis.

- Average wage premium: A weighted average hourly wage was then calculated for firms that received grants calculating the average difference between the average hourly wages of workers employed by firms awarded grants and the average wage across the sector overall (using data from the Annual Survey of Hours and Earning). This is illustrated in the table below and resulted an estimated average wage premium of £6.21. A 35-hour work week for 52 weeks was then assumed to give an estimated wage premium of £11,308 per job year for each grant awarded.

Table 6.7: Estimated wage premium

	A	B	C	D=B -C
Industrial sector	% of firms awarded grants	Average hourly earnings of workers employment by firms awarded grants	Average hourly wages – overall sector (ASHE, 2019)	Estimated wage premium
C: Manufacturing	28%	22.18	16.82	5.36
D: Electricity, Gas, Steam and Air Conditioning Supply	3%	27.17	21.98	5.19
E: Water Supply; Sewerage, Waste Management	6%	22.40	16.69	5.71
F: Construction	2%	21.96	17.6	4.36
G: Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	1%	17.48	14.14	3.34
H: Transportation and Storage	5%	20.95	16.18	4.77
I: Accommodation and Food Service Activities	2%	12.44	10.78	1.66
J: Information and Communication	20%	30.85	22.99	7.86
K: Finance and Insurance Activities	17%	36.54	28.47	8.07
M: Professional, Scientific and Technical Activities	9%	29.66	22.3	7.36
N: Administrative and Support Service Activities	1%	19.70	14.43	5.27
P: Education	2%	21.83	18.36	3.47
Q: Human Health and Social Work Activities	4%	18.73	16.4	2.33

Source: ASHE, ONS, Ipsos analysis.

- Total value of productivity gains from reallocation: The total value of the productivity benefit from the creation/safeguarding of more productive jobs was then calculated by multiplying the number of jobs years created/safeguarded by the estimated uplift (£11,308) and the discount factor. Using this method, the total value of created/safeguarded output by the end of 2024/25 was estimated at £156m (£137m in present value) with lifetime benefit estimated at £335m (£261m in present value).

Table 6.8: Total productivity gains

	Total effects between 2019/20 and 2024/25 (£m)		Total effects between 2019/20 and 2033/34 (£m)	
	Value (£m)	PV (£m)	Value (£m)	PV (£m)
Short-term productivity	562	489	1,519	1,221
Created / safeguarded output	156	137	335	261
Total	718	626	1,854	1,482

Source: Ipsos analysis. Base year = 2019. 3.5% discount rate.

R&D expenditure

The net social/resource cost of the programme largely relates to the net increases in investment induced in terms of research and development expenditures. These costs were estimated in the preceding section based on the econometric findings to provide an estimate of the lifetime social cost of the programme between 2019/20 and 2028/29. The table below summarises these costs.

Table 6.9: Total R&D spending costs

Effects on R&D spending between 2019/20 and 2024/25 (£m)		Effects on R&D spending between 2019/20 and 2032/33 (£m)	
Value (£m)	PV (£m)	Value (£m)	PV (£m)
636	567	1,069	897

Source: Business Expenditure on R&D, ONS, Ipsos analysis.

6.3.3 Benefit to cost ratio

The table below presents the estimated benefit-cost ratios with the social costs and productivity impacts included. The return on public sector investment was estimated by relating the net private benefits of Smart grant funding between 2019/20 and 2024/25 (the total value of productivity gains net of additional private investments in R&D) to total costs of grant funding to the public sector. This provides a measure of the overall efficiency associated with the use of public sector funds.

The table below sets out these results. Grant funding was estimated to have led to approximately £1.27 in net economic benefits per £1 of public sector cost by 2024/25 but this was expected to rise to £2.65 per £1 of public sector cost by 2033/34. This indicates that the Smart Grants programme that ran from between 2019/20 to 2024/25 had broken even by the end of 2024/25 and the value for money was expected to grow significantly in the future as effects from projects funded later in the programme filter through.

Table 6.10: Cost-benefit analysis – Smart Grants

Period	Innovate UK spending (£m)	Additional GVA from direct productivity gains (£m)	Additional GVA from reallocation (£m)	Private investment in R&D leveraged (£m)	Net economic benefits (£m)	Benefit to Cost Ratio (£s)
	A	B	C	D	E = B+C-D	F = E / A
2019/20 to 2024/25	361	529	137	206	460	1.27
2019/20 to 2033/34	361	1,221	272	536	957	2.65

Source: Ipsos analysis. Base year = 2019. 3.5% discount rate

7 Conclusions

This section sets out the overall conclusions of the evaluation.

7.1 Overall assessment of performance against objectives

The Smart Grants programme has delivered against its stated objectives over the 2019/20 to 2024/25 period and stands apart in the Innovate UK portfolio for the speed with which impacts on commercialisation and firm growth have been realised. The programme's response-mode design, predictable cadence and emphasis on rapid commercialisation have helped early-stage R&D businesses achieve measurable economic growth outcomes within two to three years. A substantial share of firms supported (20 to 30 percent) have achieved significant 'scale-up' outcomes, episodes of high growth, and entry to export markets:

Generating a positive return for the UK economy

The econometric evidence shows Smart Grants increased annual R&D spending by 7 percent and R&D employment by 5 percent, with effects persisting for at least four years and being wholly UK-based. These inputs translated into growth in turnover, GVA, and employment. The programme also directly boosted GVA by an estimated £820m to date (projected to rise to £1.8bn by 2032/33) and improved productivity (GVA per worker), with estimated direct productivity gains of £610m to date (£1.4bn by 2032/33).

Leverage of private investment

The programme met or exceeded objectives related to firm growth and private investment. By supporting technical de-risking and enabling early commercial traction, Smart has crowded in substantial volumes of private capital - firms awarded grants raised £3.6bn of equity post-award. The programme has also comfortably exceeded the Business Case target that 20 percent of funded companies secure private investment within five years of completion, with 37 percent of firms in scope doing so by end of 2024. As well as activities supported directly by the grant, the evidence indicated that being awarded a Smart Grant provides a quality signal that demonstrates the credibility of the innovation and team to external parties – linked in part to the highly competitive nature of the programme and how challenging it is to secure funding.

International expansion

The programme has supported international growth and market access. A quarter of funded projects reported commercialisation, rising to 62 percent of completed projects. Among those generating revenues, around 65 percent of sales were international, and 24 percent of funded firms entered export markets for the first time post-award.

Inclusive innovation

There is evidence of inclusive and strategically relevant innovation. The portfolio is strongly aligned with the 2025 Industrial Strategy sectors (around 90 percent of projects originated in or targeted the IS-8) and the 2022 Innovation Strategy's priority technology families (around 90 percent, with artificial intelligence particularly prevalent). Geographically, funding was broadly neutral by deprivation decile (England), suggesting Smart has neither widened nor narrowed disparities in aggregate. Case studies also point to social and environmental benefits - e.g. lower-footprint critical mineral extraction, biodegradable packaging resins, and NHS productivity tools - consistent with the programme aim to produce wider social and environmental benefits.

Finally, part of the Smart Programme's added value lies in its distinctive operating model. The award sizes algin with SME's typical cash constraints, competitions run on a predictable rhythm with relatively rapid decisions, and its response-mode design allows firms to propose work that is directly aligned with commercial milestones. Together these features address acute timing and financing frictions for R&D-intensive SMEs and help explain why rapid commercial and economic outcomes are visible.

7.2 Conclusions by evaluation theme

Support and business development

Barriers to accessing and benefiting from the programme

Applicants faced financing barriers typical of early-stage, R&D-intensive SMEs. These include high levels of technical and market uncertainty, information asymmetries with investors. Many firms were pre-revenue (35 percent), at low TRLs (61 percent at or below TRL3), and reliant on bootstrapping or small angel rounds, with investors often steering management toward lower-risk, revenue-generating activity. Against this backdrop, Smart's grant finance and speed of decision were critical in enabling applicants to proceed at pace.

Application process and feedback

Firms consistently valued the programme's response-mode format, grant sizes aligned to match-funding capacity, and predictable cycles. Several case studies highlighted that the discipline required by the programme and engagement with Monitoring Officers improved R&D planning, project governance and investor readiness.

Maturity of organisations

The programme successfully reached early-stage innovators. 71 percent of firms awarded grants were micro-businesses, and 35 percent were pre-revenue, with most projects at TRL3 or 4 at the point of application to the programme. This profile aligns with the programme's rationale to address early-stage funding gaps and de-risk technologies to investable points.

Most valued support and gaps

Beneficiaries most valued the grant finance to fund the R&D steps that equity investors required to secure their backing, the pace and predictability of competition rounds, the programme's signalling effect (which helped with both engagement of partners and collaborators), and – in some cases - the ability to fund collaboration costs. The programme was less effective in more capital-intensive and regulated sectors where there was a need for later-stage demonstrators to secure private investment. Firms in the most deprived areas also appear under-represented (mirroring Innovate UK's wider portfolio), suggesting scope for targeted outreach and support to application readiness.

Collaboration and effects of the wider research base

Collaboration featured in 35 percent of Smart projects. Firms most often sought capabilities they lacked in-house, access to specialised facilities, validation datasets/users, and the ability to accelerate projects by delivering workstreams in parallel. Grants covered costs and conferred credibility that made partners more willing to engage. Beneficiaries who collaborated reported more new relationships and knowledge outputs

than non-awardees, and case studies show collaborations were pivotal in shortening timescales for the delivery of demonstration data. The wider research base – including universities, RTOs and Catapults - provided essential infrastructure, know-how and market access.

Economic impact

- **New products, services or processes and commercialisation:** The programme accelerated technical progress. Amongst firms awarded funding, the share of innovations at between TRL7 and TRL9 rose from four percent at application to 44 percent, with the share at TRL9 rising from one percent at application to 25 percent following project completion. One in four funded projects had commercialised by the time of the survey (62 percent among completed projects), most commonly through direct sales - though some pursued licensing where capital intensity made in-house manufacturing less viable.

- **Effects on economic performance:** Econometric analysis indicates that the programme delivered significant economic growth outcomes – including increasing employment by 4 percent, turnover by 6 percent increase in turnover, and GVA by 4 percent. Economic growth outcomes emerged within two years and continued to persist for at least four years post-award. The programme also delivered significant scale up outcomes: a fifth of firms awarded scaled from SME to large firm post-award and 19 percent experienced an episode of high-growth (20% YOY growth for three consecutive years). Impacts were achieved despite high levels of risk - around 35 percent of firms awarded grants had ceased trading by the end of 2024/25, illustrating the programme's high-risk/high-return profile.

- **Investment catalysed:** Smart Grants enabled firms awarded funding to attract follow-on funding in large volumes. Firms awarded grants raised £3.6bn post-award, predominantly in the form of investments placed by venture capital funds. Smart Grants were estimated to increase the level of investment in companies by 8 to 10 percent in the short term, increasing to 15 to 17 over a five-year period. R&D activity was crowded-in beyond the lifetime of grants, with an estimated £0.42 of additional private R&D per £1 public spending to date, rising to a projected £1.38 per £1 by 2032/33.

- **Effects on jobs and productivity:** The Smart Grants programme both created or safeguarded high-quality jobs: hourly earnings at awardees rose by around 1.5 percent, with larger effects for higher-skill occupations, and GVA per worker increased by around 2.3 percent two to four years post-award. Estimated direct productivity gains total £610m to date, rising to £1.5bn by 2032/33; productivity gains from reallocating labour to more productive firms add an estimated £156m to date (and £335m by 2032/33).

- **Geographical spread and spillovers:** Funding was broadly neutral by deprivation decile in England, and there was no evidence that Smart widened or narrowed regional disparities (with regional economic impacts broadly similar across areas of differing levels of productivity).

Value for money

- **Additionality.** The programme achieved a high level of additionality. It was estimated that 70 percent of the R&D activity supported by the programme would not have been taken forward without the programme, and the programme continued to crowd in private investment into businesses beyond the lifetime of projects. It was estimated that the programme leveraged £0.42 In private R&D spending by 2024/25 and was projected to leverage £1.38 of additional private R&D spending per £1 public spending by 2032/33. While there is uncertainty around future impacts, this indicates that the programme is likely to prove a highly efficient mechanism for supporting R&D investment in the UK economy.

- **Benefit to Cost Ratio:** The estimated benefit to cost ratio – based on the projected value of productivity gains arising from the programme - is estimated at £1.34 per £1 of public cost to date and projected to

rise to £3.13 by 2033/34 on some conservative assumptions around the future persistence of impacts to date. This would substantially exceed the typical hurdle rates of return applied in the appraisal of public sector programmes and would imply the programme offers 'very good' value for money (based on classifications of BCR ranges developed by the Department for Business Trade).

- **Duration and sustainability of outcomes:** The estimated effects on R&D activity, productivity and growth outcomes persist beyond the funding period (and a longer-term study would be needed to fully quantify the sustainability of outcomes). The risks associated with the programme are visible in the failure rates of firms awarded grants, though returns across the portfolio imply that the benefits of successful projects more than offset losses among higher-risk cases.

Strategic relevance and added value

The programme remains strategically relevant and complementary to the UK's current policy landscape. Although response-mode by design, the Smart Grants programme has financed innovations that map closely to the 2025 Industrial Strategy's sector focus and the 2022 Innovation Strategy's priority technology areas. The programme has also done so in a way that is distinctive within the Innovate UK portfolio – particularly in its ability to rapidly convert R&D into commercial revenues, exports, firm growth and productivity gains. Its cadence, speed and flexibility are well-suited to closing financing gaps at the point where timing is critical for founders, and its signalling effect helps unlock private and corporate partnerships.

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By being an MRS Company Partner, Ipsos UK endorse and support the core MRS brand values of professionalism, research excellence and business effectiveness, and commit to comply with the MRS Code of Conduct throughout the organisation & we were the first company to sign our organisation up to the requirements & self-regulation of the MRS Code; more than 350 companies have followed our lead.

ISO 9001

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