

Assessing the impact of Covid-19 on Innovate UK award holders

Survey and case-study evidence Wave 2 – October/November 2020

Insights Paper (December 2020) prepared by:

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About the Enterprise Research Centre

The Enterprise Research Centre is an independent research centre which focusses on SME growth and productivity. ERC is a partnership between Warwick Business School, Aston Business School, Queen's University School of Management, Leeds University Business School and University College Cork. The Centre is funded by the Economic and Social Research Council (ESRC); Department for Business, Energy & Industrial Strategy (BEIS); Innovate UK, the British Business Bank and the Intellectual Property Office. The support of the funders is acknowledged. The views expressed in this report are those of the authors and do not necessarily represent those of Innovate UK or the other funders.

About the Innovation Caucus

The Innovation Caucus supports sustainable innovation-led growth by promoting engagement between the social sciences and the innovation ecosystem. Our members are leading academics from across the social science community, who are engaged in different aspects of innovation research. We connect the social sciences, Innovate UK and the Economic and Social Research Council (ESRC), by providing research insights to inform policy and practice. Professor Tim Vorley is the Academic Lead. The initiative is funded and co-developed by the ESRC and Innovate UK, part of UK Research and Innovation (UKRI). The support of the funders is acknowledged. The views expressed in this piece are those of the authors and do not necessarily represent those of the funders.

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EXECUTIVE SUMMARY

This is the second in a series of benchmark reports on the impact of Covid-19 crisis on the status of Innovate UK award holders. Analysis is based on an on-line survey of 242 Innovate UK award holders conducted between 28th September and 16th October 2020 and 23 in-depth interviews undertaken between the 16th and 30th of November 2020. We compare results from the second survey to the first on-line survey undertaken in June/July 2020, around the end of the first wave of COVID-19.

The report provides a snapshot of firms' views at the time of the fieldwork in October/November 2020. We also compare results from the second survey to the first on-line survey undertaken in June/July 2020, around the end of the first wave of COVID-19. While the findings of the report have been superseded by the tightening of restrictions in December 2020 and subsequent Tier 4 lockdown, they provide a record of how firms 'bounced-back' or rather 'bounced forwards' between the initial waves of the survey.

One aspect of the October survey which may prove particularly important given recent events was a question relating to the preparedness of firms for the current and future national and local lock-downs. 35 per cent of firms indicated that they had fully developed plans in place with a further 42.5 per cent suggesting they were working on lock-down plans at the time. While this is not an indication of future resilience and recovery, it provides the most recent insight on the outlook and experiences of Innovate UK funded businesses.

Having completed 2 waves of the benchmark reports on the impact of the Covid-19 crisis on the status of Innovate UK award holders, the 3rd wave of the study will be brought forward to January to explore the impacts of the Tier 4 lockdown announced in January 2021. Bringing forward the 3rd wave of the study will enable the impact on and outlook of Innovate UK award holders to be better understood and provide insight to inform future strategy and decision-making to support Innovate UK funded businesses.

HEADLINE SUMMARY

Trend and outlooks in October/November 2020

- **R&D and innovation activities remained critical to many firms** - Particularly to small and micro firms who reported increased significance of R&D activities at greater numbers than the previous period. A fifth of all firms planned to increase R&D and innovation investment by at least 10 per cent over the next three months (up from 1:13 in the Wave 1 survey). Overall, R&D is seen as “crucial to survival” (in the words of one respondent) but firms vary in projected timelines to increase investment in this area.
- **Disruptions to R&D were decreasing** – although firms still reported significant disruptions due to cash flow, networking, and business development. In this survey period (October), 31% fewer firms cited R&D disruptions, while 50% fewer firms reported that they had stopped all R&D activity, and 42% fewer firms reported that they were re-tasking R&D personnel to essential functions.
- **Business revenues were rebounding slightly** - The proportion of businesses reporting a reduction in revenues over the last 3 months in October was 58.1% down from 69.7% in the preceding period. A small number, 9.1% (1:11), of firms increased their revenues, a threefold increase compared to June 2020 (3% or 1:33). However, about the same number of firms (1:3) had their revenues halved or reduced to zero, with a slight decrease from 36% to 30%.
- **Cash flow concerns were decreasing for some firms** - 11% (1:9) firms experienced positive cashflow in October 2020, a 250% increase from June 2020 (4%) and fewer firms (1:6) described their liquidity as ‘critical’ compared to the previous period (1:5), with 2:3 firms reducing costs to manage liquidity challenges.
- **Business rates relief has yielded some benefits** - 1:4 firms benefited from business rates relief, four times more than in June 2020 (6% or 1:17), which was the most commonly utilised measure to mitigate the impact of Covid-19.
- **Collaboration rates are beginning to increase overall** - Levels of collaboration with suppliers, clients/customers from the private sector, clients/customers from the public sector, and government or public research institutes had increased compared to the previous period. However, there are some worrying trends in R&D collaboration with universities and R&D institutes.
- **More businesses plan to use grants** - 1:8 firms planned to utilise the Small Business Grants Fund (SBGF) to mitigate the impact of Covid-19 over the next three months (almost double from the 1:15 in the Wave 1 survey).

Areas of current and future concern in October/November 2020

- **Supply chain and demand volatility is increasing** - 2:3 firms experienced changes in customer orders in October 2020, a 19% increase compared to June 2020; the majority reduced or delayed orders but more (1:4) cancelled compared to June 2020 (1:5). There was an increase in those cancelling as opposed to reducing or delaying orders.
- **A small number of firms continue to reduce R&D spending** - Around 1:8 firms planned to reduce R&D and innovation investment by more than 50 per cent over the next three months (down from 1:4 in the Wave 1 survey).
- **Cashflow remains a problem for many firms** - Although fewer firms described their financial status in precarious terms, 2:3 firms reported their cash flow as “under pressure”. Firms expected this to be a persistent problem over the short term. About a quarter of firms projected a fall in revenues of over 50 per cent over the next three months (down from 1:3 in the Wave 1 survey). Only a fraction of that (1:8) project an increase in revenues (up from 1:21 in the Wave 1 survey).

- **Collaboration with R&D intensive institutions decreased** - More firms reported that collaboration with other businesses within their own enterprise group (1:4) and consultants, commercial labs or private R&D institutes (1:3) has fallen compared to June 2020. While 1:3 have reduced their collaboration with universities, 1:4 have increased their collaboration, an increase from 1:7 in June 2020.
- **Collaboration with universities has decreased substantially** - Around 2:3 firms were collaborating with universities prior to the pandemic. 1:5 of these firms had reduced spend on collaboration by more than 25 per cent. 1:7 reduced their spending with universities by more than 50 per cent, a 38% increase from June 2020.

Preparation for future national lockdown

- Asked in October and November 2020 around a third of firms said they had fully-developed plans in place for future lock-downs with a further 43 per cent of firms indicating that they were developing plans (see below). Micro businesses were most likely not to have plans in place or in development. By sector, hospitality businesses were most likely to have fully developed future lock-down plans.

Have you developed specific plans to cope with any future national lockdowns? (% firms)

| | Micro | Small | Medium | Large | All firms |
|---------------------------|-------|-------|--------|-------|-----------|
| Plans fully developed | 32.47 | 43.28 | 33.33 | 33.33 | 35.56 |
| Plans are being developed | 40.91 | 40.3 | 66.67 | 66.67 | 42.68 |
| No plans in place | 26.62 | 16.42 | 0 | 0 | 21.76 |
| Total | 100 | 100 | 100 | 100 | |

Update on IUK projects as of October/November 2020

- **More projects are on-time** - More projects are now on-time (45%; up from 30% in the Wave 1 survey) or ahead of the planned schedule (5.6%, up from 0.4% in the Wave 1 survey) compared to June 2020. Fewer projects are paused due to lockdown (2.8%; down 10.1% in the Wave 1 survey) or behind the planned schedule (44%; down from 60% in the Wave 1 survey). While 4:5 firms see additional financial support as helpful (up from 3:4 in the Wave 1 survey), with costed project grant extension seen as most beneficial (2:3 firms).
- **Project plans are still in flux for some** - Project plans are changing in half of IUK projects (down from two-thirds in the Wave 1 survey). Three quarters of projects are expected to progress as planned over the next three months (up from 2:3 in the Wave 1 survey); but 1:7 will be cut back or slowed down (down from 1:3). Almost two-thirds (60%) of projects involving working with partners are now progressing as usual (up from 28%)
- **Soft support is seen as potentially beneficial** - 1:5 firms sought soft support, with more than half expecting a significant benefit from additional support with finding new customers and markets (help with scenario planning deemed most helpful in the Wave 1 survey).

I. INTRODUCTION

This is the second in a series of benchmark reports on the impact of Covid-19 crisis on the status of Innovate UK award holders. The analysis focuses on the impact of the crisis over the last three months and firms' plans for the next three-months and beyond. Both firm level and project-level effects are considered. Data was derived from extensive survey work with IUK award holders and, where survey respondents agreed, more detailed interview follow-up. While the study was completed prior to the tightening of restrictions in December 2020 and subsequent Tier 4 lockdown in January 2021 it provides the up to date recent insights on the outlook and experiences of Innovate UK funded businesses.

The dynamic nature of the Covid-19 crisis means that it is important to take into account the timing of the survey. Analysis is based on an on-line survey of 242 Innovate UK award holders conducted between 28th September and 16th October 2020 and 23 in-depth interviews undertaken between the 16th and 30th of November 2020. The on-line survey was distributed by Innovate UK but individual respondents' information has been treated as confidential to the research team. We compare results from the second survey in October 2020 to the first on-line survey undertaken in June/July 2020, around the end of the first wave of COVID-19.

In the data presented in this report we distinguish between firms in terms of sizeband (micro (1-9 employees), small (20-50 employee), medium (50-249 employees) and large (250+ employees)) and three broadly defined sectors 'Manufacturing' which includes the primary and energy sectors (SIC 1-43), 'Hospitality' which includes hospitality, transport, and finance (SIC 45-68), and 'Business services' which includes most knowledge intensive service activities including R&D services (SIC 69-99).

In October 2020 firms were marginally more optimistic about the outlook than in June 2020, although subsequent events are likely to have again changed this picture. From June to October 2020 we observed marginal improvements on most indicators and evidence that the outlook for many firms appeared to be brightening. However, the results also indicated that firms were still experiencing significant challenges constraining their abilities to engage in innovation and complete projects on time, potentially with longer term implications for the innovative capacity of the economy. We conclude that it is vital to continue monitoring these trends and to use this data to reactively, and proactively, help firms adapt to persistent economic uncertainty.

Having complete 2 waves of the benchmark reports on the impact of the Covid-19 crisis on Innovate UK award holders, the 3rd wave of the study will be brought forward to January to explore the impacts of the current Tier 4 lockdown announced in January 2021. Bringing forward the 3rd wave of the study will enable the impact on and outlook of Innovate UK award holders to be better understood and provide insight to inform future strategy and decision-making to support Innovate UK funded businesses. In this wave the survey will be accompanied with interviews in parallel so as to expedite reporting and insights on the response and outlook of Innovate UK funded businesses.

The remainder of this report is divided into the following sections:

- Section 2 FINANCE AND OPERATIONS
- Section 3 R&D AND INNOVATION ACTIVITY
- Section 3: OUTLOOK & FUTURE CHALLENGES
- Section 5 LONGITUDINAL PERSPECTIVE
- Section 6 NEXT STEPS.

2. FINANCE AND OPERATIONS

Covid-19 has caused disruption to many firms over the last three months both directly and indirectly through the impact on customers and suppliers. In the survey IUK award holders were asked how the pandemic had impacted their business (Table 2.1). Firms experienced continued disruption particularly to cash flow and the ability to network with other companies. Only around 1:8 firms reported the situation improving. 1:5 saw an increase in product or service demand.

Table 2.1: Effects of Covid-19 on IUK grant holders, % firms

| | Improved | Unaffected | Disrupted | Total |
|-------------------------------------|----------|------------|-----------|-------|
| Staffing availability | 6.76 | 45.05 | 48.2 | 100.0 |
| Cash flow | 8.44 | 18.14 | 73.42 | 100.0 |
| Production capacity | 6.28 | 38.74 | 54.97 | 100.0 |
| R&D capacity | 13.87 | 32.77 | 53.36 | 100.0 |
| Supply chains | 2.01 | 39.2 | 58.79 | 100.0 |
| Availability of loan/equity finance | 20.36 | 23.95 | 55.69 | 100.0 |
| Demand for products and/or services | 21.17 | 15.77 | 63.06 | 100.0 |
| Business Development | 7.79 | 22.08 | 70.13 | 100.0 |
| Ability to network with other firms | 6.67 | 6.67 | 86.67 | 100.0 |

The extent of disruption meant that 85 per cent of respondents indicated that they had changed the way that their business operated over the last three months. In the October 2020 survey firms were asked whether these changes were likely to be temporary or permanent (Table 2.2). Perhaps not surprisingly the most common changes in work practices relate to working from home and adjustments to the operations of the firm to maintain social distance and customer and employee health. Interestingly, around a third of firms saw changes to virtual meetings as permanent rather than a temporary response to the pandemic.

Table 2.2: Changes to business practices over the last three months, % firms

| | Temporary | Permanent |
|---|-----------|-----------|
| Moved on-line for sales to customers | 30.8 | 18.4 |
| Staff now working from home | 61.7 | 32.8 |
| Access to premises restricted to key staff | 49.8 | 10.9 |
| Meetings all or mostly virtual | 65.2 | 33.8 |
| Using different laboratories as universities are inaccessible | 24.9 | 6.0 |
| Changed work practices to protect staff and customers | 52.2 | 31.8 |

Cash flow remained critical for about 1:6 companies in October 2020. Most firms were aiming to reduce costs in order to cope (Table 2.3). 1:4 firms were extending their borrowing. Business rate

relief remained the most common government relief scheme used over the July to September period (Table 2.4). Use is concentrated among smaller firms.

Table 2.3: Managing liquidity of the business, % firms

| | Micro | Small | Medium | Large | All firms | Manuf etc. | Hospitality | Business | All firms |
|-------------------|-----------|-------|--------|-------|-----------|------------|-------------|----------|-----------|
| | N=15 6 | N=67 | N=15 | N=4 | N=24 2 | N=55 | N=73 | N=116 | N=242 |
| Reduced costs | 58.3 | 70.1 | 53.3 | 75.0 | 61.6 | 58.2 | 64.4 | 60.3 | 61.6 |
| Maximised revenue | 15.4 | 23.9 | 53.3 | 0.0 | 19.8 | 43.6 | 21.9 | 6.9 | 19.8 |
| Raised investment | 24.4 | 16.4 | 13.3 | 0.0 | 21.1 | 16.4 | 26.0 | 19.8 | 21.1 |
| Extend borrowing | 25.6 | 32.8 | 20.0 | 0.0 | 27.3 | 30.9 | 26.0 | 25.9 | 27.3 |
| | | | | | | | | | |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

Table 2.4: Take up Government measures to mitigate the impact of Covid-19 (% firms)

| | Micro | Small | Medium | Large | All firms | Manuf etc. | Hospitality | Business | All firms |
|--|-----------|-------|--------|-------|-----------|------------|-------------|----------|-----------|
| | N=15 6 | N=67 | N=15 | N=4 | N=24 2 | N=55 | N=73 | N=116 | N=242 |
| Coronavirus Job Retention Scheme (Furloughing employees) | 0.0 | 0.0 | 6.7 | 0.0 | 0.4 | 0.0 | 1.4 | 0.0 | 0.4 |
| Coronavirus Large Business Interruption Loan Scheme | 0.6 | 4.5 | 6.7 | 0.0 | 2.1 | 3.6 | 1.4 | 1.7 | 2.1 |
| Coronavirus Future Fund | 9.6 | 9.0 | 0.0 | 0.0 | 8.7 | 9.1 | 9.6 | 7.8 | 8.7 |
| COVID-19 Corporate Financing Facility | 10.9 | 9.0 | 26.7 | 0.0 | 11.2 | 7.3 | 9.6 | 13.8 | 11.2 |
| Small Business Grants Fund (SBGF) | 1.9 | 1.5 | 13.3 | 0.0 | 2.5 | 3.6 | 0.0 | 3.4 | 2.5 |
| Deferral of VAT payments | 2.6 | 9.0 | 6.7 | 0.0 | 4.5 | 3.6 | 5.5 | 4.3 | 4.5 |

| | | | | | | | | | |
|--|------|------|-----|-----|------|------|------|------|------|
| Business rates relief | 30.1 | 13.4 | 0.0 | 0.0 | 23.1 | 29.1 | 27.4 | 17.2 | 23.1 |
| Coronavirus Business Interruption Loan | 2.5 | 8.9 | 6.6 | 0.0 | 4.5 | 3.6 | 5.5 | 4.3 | 4.5 |
| Small Bounce Back Loan | 30.1 | 13.4 | 0.0 | 0.0 | 10.3 | 29.0 | 27.4 | 17.2 | 10.3 |

Disruption to cash flow was in most cases due to the impact on revenues. 58.1 per cent of businesses reported a reduction in revenues over the last 3 months down from 69.7% in the preceding period. About the same number of firms (1:3) had their revenues halved or reduced to zero, with a slight decrease from 36% to 30% (Table 2.5). These impacts appear more significant in micro and small businesses and those in the services sector.

Table 2.5: Impact of Covid-19 on turnover over the last three months

| | Micro | Small | Medium | Large | All firms | Manuf etc. | Hospitality | Business | All firms |
|----------------------------|-----------|-------|--------|-------|-----------|------------|-------------|-----------|-----------|
| | N=15 6 | N=67 | N=15 | N=4 | N=24 2 | N=55 | N=73 | N=11 6 | N=24 2 |
| Revenue reduced to zero | 10.9 | 4.5 | 6.7 | 0.0 | 8.7 | 5.5 | 8.2 | 10.4 | 8.6 |
| Reduced by more than 50% | 23.1 | 20.9 | 6.7 | 0.0 | 21.1 | 21.8 | 19.2 | 21.7 | 21.0 |
| Reduced by up to 50% | 9.6 | 11.9 | 20.0 | 25.0 | 11.2 | 20.0 | 8.2 | 8.7 | 11.1 |
| Reduced by up to 25% | 6.4 | 16.4 | 20.0 | 0.0 | 9.9 | 9.1 | 12.3 | 8.7 | 9.9 |
| Reduced by up to 10% | 5.1 | 11.9 | 0.0 | 25.0 | 7.0 | 9.1 | 6.9 | 7.0 | 7.4 |
| No change | 19.2 | 16.4 | 20.0 | 50.0 | 19.0 | 16.4 | 20.6 | 19.1 | 18.9 |
| Increased by up to 10% | 1.3 | 3.0 | 13.3 | 0.0 | 2.5 | 1.8 | 1.4 | 3.5 | 2.5 |
| Increased by up to 25% | 3.9 | 3.0 | 6.7 | 0.0 | 3.7 | 1.8 | 4.1 | 4.4 | 3.7 |
| Increased by up to 50% | 2.6 | 0.0 | 0.0 | 0.0 | 1.7 | 0.0 | 2.7 | 1.7 | 1.7 |
| Increased by more than 50% | 1.3 | 0.0 | 6.7 | 0.0 | 1.2 | 1.8 | 1.4 | 0.9 | 1.2 |
| Pre-revenue company | 16.7 | 11.9 | 0.0 | 0.0 | 14.1 | 12.7 | 15.1 | 13.9 | 14.0 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

3. R&D AND INNOVATION ACTIVITY

The pandemic has created disadvantages for many firms in terms of R&D and innovation activity, but also opportunities for some. Those that have had to suspend or curtail innovation activity did so due to factors such as limited or no access to lab facilities and difficulties in conducting research in social distanced environments, problems with accessing materials, and slowdowns related to the implementation of Covid-19 procedures in production processes. Some firms also reported challenges related to decision-making in the absence of face to face interactions and slower or unresponsive links in the decision chain or from project partners.

The financial pressures of the Covid-19 crisis and operational issues related to social distancing and the lock-down have forced firms to revise plans for R&D and innovation. Around a third of firms had increased their R&D activity over the July to October period (Table 3.1). Around the same proportion had ceased or reduced their R&D activities. The number of firms which had stopped all R&D activity had fallen sharply from 1:9 to 1:18 with a smaller of firms also re-prioritising R&D activities (1:3 from 1:2 in June/July).

That said, anxiety related to the financial sustainability of R&D projects is still palpable. Firms report being reluctant to spend as much money as they would as they work to maintain what they view as essential activities. There is also a general feeling of hesitancy among investors, which as a class have also pulled back to focus on their core areas of strength and there is no sense that this has improved over the course of the pandemic. Note that (perceptions of) investment flows vary by sector, with more positive outlooks in areas such as healthcare, life sciences, and renewable energy that have received additional attention and support due to their role in crisis management and recovery.

For the firms that reported increased R&D activity in October 2020, or at least a perception that these activities might improve, these were usually linked to the emergence of new opportunities as a result of the pandemic. These include developing and implementing new innovations necessary to facilitate business or market adaptation to the pandemic. Importantly, the types of innovations that might be the outcome of pandemic adaptation might not be as radical or groundbreaking. As one firm put it: “there's been an opportunity probably in this period to think about how we might do things differently. Yeah, that might not all be sort of totally innovative, but it might be innovative for us”.

In other contexts, slowdowns on the production side have been met by temporarily re-tasking workers to R&D activities. In both cases, uncertainty about how durable those changes will be prevails, as firms lack clear insight to when or how things will return to ‘normal’. Overall, findings indicate that firms are now shifting into different R&D profiles in reaction to their perceptions of mid to long-term conditions. However, these findings should be interpreted with caution and vary by sector and by firm size.

Table 3.1: Impacts of Covid-19 on R&D and innovation over last three months

| | Micro | Small | Medium | Large | All firms | Manuf etc. | Hospitality | Business | All firms |
|--|-----------|----------|----------|-------|-----------|------------|-------------|-----------|-----------|
| | N=1 56 | N=6 7 | N=1 5 | N=4 | N=2 42 | N=5 5 | N=7 3 | N=1 16 | N=24 2 |
| Stopped all R&D activities | 5.1 | 4.3 | 12.5 | 0.0 | 5.6 | 6.8 | 4.1 | 5.9 | 5.6 |
| Stopped all non-critical/core R&D activities | 7.0 | 5.8 | 0.0 | 40.0 | 6.8 | 11.9 | 8.1 | 3.4 | 6.8 |
| Reduced & reprioritised some R&D activities | 26.6 | 29.0 | 50.0 | 40.0 | 29.1 | 18.6 | 24.3 | 37.3 | 29.1 |
| No change | 21.5 | 30.4 | 25.0 | 20.0 | 24.3 | 23.7 | 23.0 | 25.4 | 24.3 |
| Increased R&D activities | 39.9 | 30.4 | 12.5 | 0.0 | 34.3 | 39.0 | 40.5 | 28.0 | 34.3 |
| Total | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

As part of the survey in October 2020 firms were also asked about their plans for investing in R&D and innovation over the next three months (Table 3.2). 1:6 firms planned a reduction in R&D spend by more than 50 per cent over the next three months (down from 1:4 in June/July). These effects are most significant in smaller and micro firms. Around 4:10 firms saw R&D investment remaining stable. 1:5 firms plan to increase R&D and innovation investment by at least 10 per cent over the next three months (up from 1:13 in June/July).

Decisions to reduce R&D investment in the short term were primarily driven by uncertainty. Some reported that markets are adjusting slowly and that customers and investors have been slower to commit to new business or resume typical relationships. Where R&D is not the sole focus of the business, these activities are still viewed as discretionary and firms are prioritising profit-making activities. R&D funding is also seen as constrained and firms note that volume of work is dependent on that funding pipeline. Subsequent moves into national lock-down are likely to have increased uncertainty and further dampened future R&D and innovation investment decisions.

Table 3.2: Plans for R&D and innovation investment in the next three months

| | Micro | Small | Medium | Large | All firms | Manuf etc. | Hospitality | Business | All firms |
|----------------------------|-----------|-------|--------|-------|-----------|------------|-------------|-----------|-----------|
| | N=15 6 | N=67 | N=15 | N=4 | N=24 2 | N=55 | N=73 | N=11 6 | N=24 2 |
| Revenue reduced to zero | 2.65 | 3.03 | 0 | 0 | 2.53 | 5.45 | 1.39 | 1.82 | 2.53 |
| Reduced by more than 50% | 13.25 | 6.06 | 0 | 25 | 10.55 | 9.09 | 11.11 | 10.91 | 10.55 |
| Reduced by up to 50% | 6.62 | 3.03 | 6.67 | 0 | 5.49 | 7.27 | 5.56 | 4.55 | 5.49 |
| Reduced by up to 25% | 5.96 | 9.09 | 20 | 0 | 7.59 | 7.27 | 11.11 | 5.45 | 7.59 |
| Reduced by up to 10% | 2.65 | 6.06 | 26.67 | 0 | 5.06 | 3.64 | 5.56 | 5.45 | 5.06 |
| No change | 37.75 | 51.52 | 46.67 | 50 | 42.62 | 40 | 38.89 | 46.36 | 42.62 |
| Increased by up to 10% | 6.62 | 10.61 | 0 | 25 | 7.59 | 9.09 | 4.17 | 9.09 | 7.59 |
| Increased by up to 25% | 15.23 | 3.03 | 0 | 0 | 10.55 | 10.91 | 12.5 | 9.09 | 10.55 |
| Increased by up to 50% | 4.64 | 4.55 | 0 | 0 | 4.22 | 5.45 | 2.78 | 4.55 | 4.22 |
| Increased by more than 50% | 4.64 | 3.03 | 0 | 0 | 3.8 | 1.82 | 6.94 | 2.73 | 3.8 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100.0 |

Collaboration is often a key element of an R&D and innovation project. As part of the survey firms were asked in October 2020 whether as a result of the Covid-19 crisis they had collaborated more or less with a range of different partners (Table 3.3). Cooperation with other groups has remained broadly stable over the last three months. 1:10 firms had collaborated less with universities. 1:5 firms had reduced spend on collaboration by more than 25 per cent. 1:7 reduced their spending with universities by more than 50 per cent, an increase from June/July 2020. Uncertainty around partner behaviour has been a big challenge for firms, Because their partners face their own uncertainty-related constraints it has been difficult to secure commitments or information necessary to move projects forward. Respondents also noted that their ability to participate as partners themselves was constrained. One firm that has maintained R&D levels noted that they had to be picky about projects and couldn't afford to continue some even as others ramped up. In this case, it meant discontinuing a lengthy partnership with a university. This example suggests that exploratory and blue sky research with academic partners might be being sacrificed to projects with shorter term prospects for profitability (in this case, within 24 months).

Table 3.3: Collaboration with universities and other partners over the last three months, % firms

| | More | Less | Same | Total |
|--|-------|-------|-------|-------|
| Other businesses within your enterprise group | 17.14 | 26.86 | 56 | 100.0 |
| Suppliers of equipment, materials, services | 19.62 | 26.32 | 54.07 | 100.0 |
| Suppliers of software | 25.51 | 16.33 | 58.16 | 100.0 |
| Clients or customers from the private sector | 22.82 | 34.47 | 42.72 | 100.0 |
| Clients or customers from the public sector (e.g. local authorities, schools, hospitals) | 23.84 | 35.47 | 40.7 | 100.0 |
| Competitors or other businesses in your industry | 15.51 | 34.76 | 49.73 | 100.0 |
| Consultants, commercial labs or private R&D institutes | 23.46 | 31.28 | 45.25 | 100.0 |
| Universities or other higher education institutions | 26.63 | 36.18 | 37.19 | 100.0 |
| Government or public research institutes | 25.6 | 33.93 | 40.48 | 100.0 |

Firms were also asked as part of the survey whether they were collaborating with any universities prior to the Covid-19 pandemic? Overall, around 58.6 per cent of firms were collaborating with universities (Table 3.4). Of these around 1: 3 firms were anticipating a reduction in spending on university collaboration of more than 25 per cent over the next three months.

Table 3.4: Changes in planned spend with universities over the last three months, % firms

| | Micro | Small | Medium | Large | All firms | Manuf etc. | Hospitality | Business | All firms |
|----------------------------|-------|-------|--------|-------|-----------|------------|-------------|----------|-----------|
| | N=156 | N=67 | N=15 | N=4 | N=242 | N=55 | N=73 | N=116 | N=242 |
| Yes | 55.77 | 62.12 | 73.33 | 50 | 58.68 | 70.91 | 40.28 | 64.35 | 58.68 |
| No | 44.23 | 37.88 | 26.67 | 50 | 41.32 | 29.09 | 59.72 | 35.65 | 41.32 |
| Reduced by more than 50% | 14.46 | 18.42 | 0 | 50 | 14.81 | 28.21 | 7.69 | 10 | 14.81 |
| Reduced by up to 50% | 7.23 | 2.63 | 9.09 | 0 | 5.93 | 7.69 | 3.85 | 5.71 | 5.93 |
| Reduced by up to 25% | 8.43 | 10.53 | 0 | 0 | 8.89 | 7.69 | 7.69 | 10 | 8.89 |
| Reduced by up to 10% | 0 | 0 | 9.09 | 0 | 0.74 | 0 | 3.85 | 0 | 0.74 |
| No change | 44.58 | 63.16 | 72.73 | 0 | 51.11 | 35.9 | 57.69 | 57.14 | 51.11 |
| Increased by up to 10% | 3.61 | 0 | 0 | 0 | 2.22 | 2.56 | 0 | 2.86 | 2.22 |
| Increased by up to 25% | 4.82 | 0 | 0 | 0 | 2.96 | 2.56 | 0 | 4.29 | 2.96 |
| Increased by more than 50% | 2.41 | 2.63 | 0 | 0 | 2.22 | 2.56 | 3.85 | 1.43 | 2.22 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Firms were also asked as part of the survey about their longer-term investment plans for R&D etc. over the next year (Table 3.5). This suggested a more optimistic picture with 43.7 per cent of firms anticipating an increase in R&D spend in October relative to pre-Covid levels. It is very likely that the uncertainty caused by the move into a national lockdown in January 2021 will counteract this optimism.

It is worth pointing out that many of the ‘innovation-focused’ businesses never stopped activities and have attempted to continue research within the constraints of physical restrictions (e.g. closed facilities or distancing protocols) that have slowed progress. Many of these viewed continuing these activities as vital to business survival. Other firms that had initially re-prioritised other investments and operations were now beginning to get a firmer sense of their prospects and were returning to R&D activities. However, uncertainty still dominated and these longer-term decisions are being strongly influenced by the shorter term outlook. For some firms, future investment in innovation will require further funding from IUK, and a number of firms consulting reported that they were currently in the application stage.

Table 3.5: Investment plans for the next 12 months relative to pre-Covid levels? (% firms)

| | Increase | Same | Reduce | Total |
|--|----------|------|--------|-------|
| Investment on R&D and innovation | 43.7 | 41.2 | 15.1 | 100.0 |
| Spending on innovation with universities | 23.5 | 47.6 | 28.9 | 100.0 |
| Spending on innovation with other partners | 30.7 | 50.2 | 19.0 | 100.0 |
| Investment in marketing and advertising | 41.4 | 30.6 | 27.9 | 100.0 |
| Spending on staff or management training | 25.9 | 47.8 | 26.3 | 100.0 |
| Investment in machinery or equipment | 29.9 | 40.7 | 29.3 | 100.0 |

Asked more specifically about their Innovate UK supported projects, in October 2020 most IUK projects were either progressing but delayed or progressing on time (Table 3.6). More projects were now on-time (45%; up from 30% in June/July) or ahead of the planned schedule (5.6%, up from 0.4% in June/July). Fewer projects were paused due to lockdown (2.8%; down 10.1% in June/July) or behind the planned schedule (44%; down from 60% in June/July).

Firms were generally very positive about IUK and how they have reacted to the crisis – for some the support they had received from IUK during the crisis kept their business afloat. Some businesses requested some flexibility (typically 3-6 months) around the spending of the continuity grant as project end dates have shifted due to the crisis. Firms were also somewhat critical about the overall IUK process, noting that while it is quite useful for getting projects to proof of concept but not for moving past this to commercialisation. This critique, and the suggestion that additional resources be made available for those projects ready to advance, has emerged in other research on IUK funding and does not apply exclusively to pandemic conditions.

Table 3.6: Project status in the light of Covid-19

| | Micro | Small | Medium | Large | All firms | Manuf etc. | Hospitality | Business | All firms |
|-------------------------------|-----------|-------|--------|-------|-----------|------------|-------------|-----------|-----------|
| | N=15 6 | N=67 | N=15 | N=4 | N=24 2 | N=55 | N=73 | N=11 6 | N=24 2 |
| Stopped permanently | 1.44 | 3.39 | 0 | 0 | 1.87 | 3.92 | 1.64 | 1.94 | 2.33 |
| Paused due to the lock-down | 2.88 | 1.69 | 7.14 | 0 | 2.8 | 1.96 | 1.64 | 3.88 | 2.79 |
| Progressing but behind | 41.01 | 49.15 | 50 | 100 | 44.39 | 50.98 | 29.51 | 49.51 | 44.19 |
| On-time | 48.2 | 40.68 | 42.86 | 0 | 45.33 | 35.29 | 60.66 | 40.78 | 45.12 |
| Ahead of the planned schedule | 6.47 | 5.08 | 0 | 0 | 5.61 | 7.84 | 6.56 | 3.88 | 5.58 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

Firms were also asked as part of the survey whether their future plans for their R&D and innovation projects had been impacted by Covid-19. Around three quarters of firms said plans remained unchanged (up from around two-thirds of firms in June/July). Only a small proportion of firms (2 per cent) saw their project either stopping or being cancelled (Table 3.7).

Table 3.7: Project development over the next three months: % firms

| | Micro | Small | Medium | Large | All firms | Manuf etc. | Hospitality | Business | All firms |
|-------------------------------|-----------|-------|--------|-------|-----------|------------|-------------|-----------|-----------|
| | N=15 6 | N=67 | N=15 | N=4 | N=24 2 | N=55 | N=73 | N=11 6 | N=24 2 |
| Stopping or being can | 1.45 | 3.45 | 8.33 | 0 | 2.37 | 6 | 1.67 | 0.99 | 2.37 |
| Slowing down or cutting back | 14.49 | 12.07 | 25 | 66.67 | 15.17 | 22 | 13.33 | 12.87 | 15.17 |
| Progressing as per the plan | 75.36 | 79.31 | 66.67 | 33.33 | 75.36 | 62 | 76.67 | 81.19 | 75.36 |
| Progressing ahead of schedule | 8.7 | 5.17 | 0 | 0 | 7.11 | 10 | 8.33 | 4.95 | 7.11 |
| Total | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

4. OUTLOOK & FUTURE CHALLENGES

At the point of the survey and interviews completed in October and November 2020, firms were asked how they saw the Covid-19 pandemic influencing their operations over the next three months. Clearly the subsequent tightening of arrangements in December and Tier 4 lockdown announced in January will further adversely impact a number of businesses in relation to the issues and concerns raised. For example cash flow and the availability of finance were seen as the most common challenges with 39 per cent of firms also highlighting weak demand for products as a significant barrier. This is likely to become more acute, with a number of businesses already in a precarious position due to cash flow volatility and with real concerns about long term sustainability.

Supply chain issues appeared to be worsening for certain firms, which has contributed to increasing backlogs that they have either been unable to complete or have been addressing more slowly than usual. In some cases, these were related to Covid-19 restrictions that have constrained internal productivity but delays in supply chains and difficulty accessing required materials have also delayed production schedules and R&D projects. It is unclear how long volatile demand and periodic or sustained supply issues might persist and some industries predict that they will struggle with production capacity issues over the longer term as and when markets normalise.

For firms that have taken the opportunity, or have been forced, to divert resources to other areas of their business, staffing has also been a constraint. While for some firms online recruitment processes have been more efficient others reported issues in recruiting and onboarding junior staff. A few firms have had difficulty filling key posts. The lack of, or limitations on, face to face training has also meant that it has taken longer to put new resources to work. There is some anxiety that undersupply in certain segments of the workforce might be exacerbated by Brexit or future lockdowns will constrain firms from using new hires onsite.

For firms that have been able to resume onsite activities workplace safety remains a concern. Preventing and mitigating outbreaks is resource-intensive and has affected processes in difficult to predict ways. Maintaining worker confidence in the safety of the premises will likely endure beyond the peak of the crisis. Again these issues are likely to become more prominent in the wake of the current Tier 4 lockdown, and these issues will be further explored in wave 3 of the survey and through the accompanying interviews.

Table 4.1: How will Covid-19 influence your firm over the next three months, % firms

| | Improving | Same | Worse | Total |
|--------------------------------------|-----------|-------|-------|-------|
| Staff availability | 18.64 | 62.73 | 18.64 | 100.0 |
| Cash flow | 15.86 | 37.44 | 46.7 | 100.0 |
| Production capacity | 21.35 | 54.69 | 23.96 | 100.0 |
| R&D capacity | 25.97 | 54.98 | 19.05 | 100.0 |
| Supply chains | 11.17 | 60.11 | 28.72 | 100.0 |
| Availability of loan/equity finance | 13.41 | 35.98 | 50.61 | 100.0 |
| Demand for products and/ or services | 38.79 | 31.31 | 29.91 | 100.0 |
| Business development | 19.00 | 45.7 | 35.29 | 100.0 |
| Ability to network with other firms | 40.00 | 40.00 | 20.00 | 100.0 |

Perhaps unsurprisingly given uncertainty around demand and cashflow, 80 per cent of respondents had sought additional financial support from IUK (Table 4.2). Costed project extensions and other

financial support was viewed most positively. Only 1: 5 firms had sought additional soft support from Innovate UK. Support with finding customers and markets was seen as having the most significant benefits (Table 4.3). As mentioned above, firms were also interested in funding or support to move beyond the proof to the product commercialisation phase. They viewed this support as fundamental to bridging the gap between the R&D process and extracting value from their work that was not always easy to access in the market. This might link up with extended soft support schemes related to scenario planning and business development.

Table 4.2: What type of additional financial support from Innovate UK would be most beneficial? % firms

| | Not required | Little benefit | Some benefit | Significant benefit | Not Interested | Total |
|------------------------------------|--------------|----------------|--------------|---------------------|----------------|-------|
| Costed project grant extension | 12.12 | 2.27 | 18.18 | 63.64 | 3.79 | 100.0 |
| Continuity loan | 14.17 | 6.67 | 18.33 | 40 | 20.83 | 100.0 |
| Other government financial support | 4.07 | 0.81 | 23.58 | 69.92 | 1.63 | 100.0 |

Respondents came up with a variety of different suggestions for adaptations to existing schemes or additional soft support. Most noted that these amendments might also be useful even under non-crisis conditions. For instance, more time to set up consortium and build partnerships was thought to be useful to establish resilient relationships. Firms also requested additional IUK support in connecting with investors. One firm suggested that being the recipient of an IUK grant represents a degree of ‘vetting’ by Government and that this could be leveraged to broker relationships and increase trust between partners. Aside from this, other services like assistance in planning and foresight and business development advice were commonly cited.

Table 4.3: Of firms seeing soft support from Innovate UK how would different forms of additional soft support from Innovate UK help with the project?

| | Not required | Little benefit | Some benefit | Significant benefit | Total |
|--|--------------|----------------|--------------|---------------------|-------|
| Support with finding new customers and markets | 14.63 | 9.76 | 24.39 | 51.22 | 100.0 |
| Help planning the firm’s recovery and investment | 18.92 | 5.41 | 32.43 | 43.24 | 100.0 |
| Help identifying new or alternative project partners | 27.03 | 13.51 | 29.73 | 29.73 | 100.0 |
| Business planning and development advice | 10.26 | 5.13 | 41.03 | 43.59 | 100.0 |
| Scenario planning for the future | 18.92 | 13.51 | 35.14 | 32.43 | 100.0 |

5. LONGITUDINAL PERSPECTIVE (JUNE TO DECEMBER)

This section reflects on how the outlook for firms has changed since the last survey in June 2020 and some emerging themes that could shape strategic thinking about how to best support recovery across firms and a resumption of R&D and innovation activities. This survey suggested some positive trends through to October incremental improvements across a variety of indicators for June to December. Subsequent deterioration in health conditions and the Tier 4 lockdown in January 2021 are likely to have dampened any positive trends, however.

For instance, while cash flow concerns were generally decreasing two-thirds of firms reported continuing pressures. Revenues were rebounding for some firms in October, but the same number still stated that their revenues remain significantly decreased. More firms seem to be gradually increasing their R&D and innovation activities and were viewing these activities as key to recovery. But firms have also noted increased supply chain and demand volatility, persistent difficulty attracting investment, strained cash flows, and lower capacity to collaborate with R&D intensive partners.

This uncertainty was not only constraining some firms from returning to pre-pandemic levels of R&D but may have longer term impacts on innovation output. For instance, the reduction in exploratory and longer-term research projects that are not likely to yield returns within a 24-month window that these trends appear to indicate might cause lags far into the future. It might be useful for future research to explore what types of projects have been canceled or delayed because they don't fit this criteria and to track whether revenue concerns continue to cause firms to prioritise shorter-term profitability in future R&D investments.

Some positive trends were evident in October

- **R&D and innovation activities remained critical to many firms** - Particularly to small and micro firms who reported increased significance of R&D activities at greater numbers than the previous period. A fifth of all firms planned to increase R&D and innovation investment by at least 10 per cent over the next three months (up from 1:13 in the Wave 1 survey). Overall, R&D is seen as “crucial to survival” (in the words of one respondent) but firms vary in projected timelines to increase investment in this area.
- **Disruptions to R&D were decreasing** - While firms still reported significant disruptions due to cash flow, networking, and business development. In this survey period, 31% fewer firms cited R&D disruptions, while 50% fewer firms reported that they had stopped all R&D activity, and 42% fewer firms reported that they were re-tasking R&D personnel to essential functions.
- **Business revenues were rebounding slightly** - The proportion of businesses reporting a reduction in revenues over the last 3 months was 58.1% down from 69.7% in the preceding period. A small number, 9.1% (1:11), of firms increased their revenues, a threefold increase compared to June 2020 (3% or 1:33). However, about the same number of firms (1:3) had their revenues halved or reduced to zero, with a slight decrease from 36% to 30%.
- **Cash flow concerns were decreasing for some firms** - 11% (1:9) firms experienced positive cashflow, a 250% increase from June 2020 (4%) and fewer firms (1:6) described their liquidity as ‘critical’ compared to the previous period (1:5), with 2:3 firms reducing costs to manage liquidity challenges.
- **Business rates relief has yielded some benefits** - 1:4 firms benefited from business rates relief, four times more than in June 2020 (6% or 1:17), which is the most commonly utilised measure to mitigate the impact of Covid-19.
- **Collaboration rates are beginning to increase overall** - Levels of collaboration with suppliers, clients/customers from the private sector, clients/customers from the public sector, and government or public research institutes had increased compared to the previous period. However, there were some worrying trends in R&D collaboration with universities and R&D institutes.

- **More businesses plan to use grants** - 1:8 firms planned to utilise the Small Business Grants Fund (SBGF) to mitigate the impact of Covid-19 over the next three months (almost double from the 1:15 in the Wave 1 survey).

Areas of current and future concern

- **Supply chain and demand volatility is increasing** - 2:3 firms experienced changes in customer orders, a 19% increase compared to June 2020; the majority reduced or delayed orders but more (1:4) cancelled compared to June 2020 (1:5). There had been an increase in those cancelling as opposed to reducing or delaying orders.
- **A small number of firms continue to reduce R&D spending** - Around 1:8 firms planned to reduce R&D and innovation investment by more than 50 per cent over the next three months (down from 1:4 in the Wave 1 survey).
- **Cashflow remains a problem for many firms** - Although fewer firms described their financial status in precarious terms in October 2020, 2:3 firms reported their cash flow as “under pressure”. Firms expect this to be a persistent problem over the short term. About a quarter of firms project a fall in revenues of over 50 per cent over the next three months (down from 1:3 in the Wave 1 survey). Only a fraction of that (1:8) project an increase in revenues (up from 1:21 in the Wave 1 survey).
- **Collaboration with R&D intensive institutions decreased** - More firms reported that collaboration with other businesses within their own enterprise group (1:4) and consultants, commercial labs or private R&D institutes (1:3) has fallen compared to June 2020. While 1:3 have reduced their collaboration with universities, 1:4 have increased their collaboration, an increase from 1:7 in June 2020.
- **Collaboration with universities has decreased substantially** - Around 2:3 firms were collaborating with universities prior to the pandemic. 1:5 of these firms had reduced spend on collaboration by more than 25 per cent. 1:7 reduced their spending with universities by more than 50 per cent, a 38% increase from June 2020.

Update on IUK projects as of October 2020

- **More projects are on-time** - More projects were on-time (45%; up from 30% in the Wave 1 survey) or ahead of the planned schedule (5.6%, up from 0.4% in the Wave 1 survey). Fewer projects were paused due to lockdown (2.8%; down 10.1% in the Wave 1 survey) or behind the planned schedule (44%; down from 60% in the Wave 1 survey). While 4:5 firms see additional financial support as helpful (up from 3:4 in the Wave 1 survey), with costed project grant extension seen as most beneficial (2:3 firms).
- **Project plans are still in flux for some** - Project plans are changing in half of IUK projects (down from two-thirds in the Wave 1 survey). Three quarters of projects are expected to progress as planned over the next three months (up from 2:3 in the Wave 1 survey); but 1:7 will be cut back or slowed down (down from 1:3). Almost two-thirds (60%) of projects involving working with partners are now progressing as usual (up from 28%).
- **Soft support is seen as potentially beneficial** - 1:5 firms sought soft support, with more than half expecting a significant benefit from additional support with finding new customers and markets (help with scenario planning deemed most helpful in the Wave 1 survey).

6. NEXT STEPS

The intention was that the wave 2 survey and follow up interviews will be repeated for a third time towards the end of Q1 2021, to understand how firms continue to react and respond to the Covid-19 crisis. However, given the tightening of restrictions in December and subsequent Tier 4 lockdown announced in January, wave 3 of the survey will be completed by the beginning of February 2021. The research team and steering group considered that the latest measures imposed were likely to

adversely impact on Innovate UK funded businesses and should be regarded as a new baseline for further research.

As noted in the introduction, bringing forward the wave 3 of the study will enable the impact on and outlook of Innovate UK award holders to be better understood and provide insight to inform future strategy and decision-making to support Innovate UK funded businesses. In this wave the survey will be accompanied with interviews in parallel so as to expedite reporting and insights on the response and outlook of Innovate UK funded businesses.

As per wave 1 and 2 of the study, wave 3 will survey and interview the same firms cohort of firm, with repeat interviews conducted with a select number of firms where possible. The intention is again to stratify the sample of interviewees where this is possible to ensure a spread of firm sizes and sectors. The aim will be to provide further reflection on what has happened since the survey and interviews conducted in October and November 2020, as well as looking to understand and explore planning over the next 3 month period.

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