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Commercial outcomes of SME-Research collaboration

Citation

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Acknowledgements

CSIRO acknowledges the Traditional Owners of the lands on which we live and work across Australia, and we pay our respects to Elders past and present. We recognise the enduring contributions of Aboriginal and Torres Strait Islander peoples to Australia's culture, economy, and scientific knowledge.

We thank the University of Queensland for leading this research as well as the Queensland University of Technology for their valued contribution. We also acknowledge IPSOS for conducting interviews in a professional and collaborative manner.

Our sincere thanks go to the 200+ businesses who generously shared their time, perspectives, and insights – their input has been central to shaping the findings of this report.

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Glossary

ABBREVIATION	DEFINITION
ARC	Australia Research Council
CRCs	Cooperative Research Centres
IGC	Industry Growth Centres
IP	Intellectual Property
iPhD	Industry PhD
R&D	Research and Development
SMEs	Small and medium enterprises
URIs	Universities or research institutions

CSIRO Executive foreword

Australian industry is navigating increasingly complex geopolitical and economic landscapes. And for small and medium-sized enterprises (SMEs), business success can depend on fostering enabling partnerships and knowing when and how to invest in innovation.

This report offers a comprehensive analysis of the commercial outcomes achieved by SMEs that have engaged in research with universities and research institutions (URIs). At a macro level, such university and SME collaborations are known to build innovation capability, drive product development and help to create pathways for new markets.

This study delivers deeper insights into the real-world impacts on Australian business. A broader understanding of these benefits will ensure that investment of time and resources delivers impact for SMEs and URIs.

The findings highlight the significant value of innovation programs designed to foster industry-research collaboration. Facilitated, dollar-matched programs – such as CSIRO Kick-Start – play a critical role in supporting early-stage innovation. They help SMEs de-risk R&D, develop prototypes, and build the credibility needed to scale.

We are proud to demonstrate that targeted, accessible support initiatives, like those delivered by CSIRO, remain a vital pillar of Australia's innovation ecosystem. We also note that there is demand for expansion of such programs to better enable SMEs to tap into the vast and exciting capabilities of our universities.

For regional SMEs, the benefits of research collaborations are particularly prominent. Despite facing greater resource constraints and logistical challenges, regional businesses reported higher rates of product development, independent validation, and market expansion than their metropolitan counterparts. These findings reinforce the need for tailored strategies to ensure businesses, no matter their location, can fully leverage research partnerships and unlock new opportunities.

By aligning support mechanisms with the evolving needs of businesses and leaning into research collaborations we all can strengthen Australia's economic resilience and global competitiveness.

Dr Jen Taylor
Executive Director,
Future Industries
CSIRO

UQ foreword

Australia's future prosperity hinges on our ability to diversify the economy through innovation and collaboration, importantly also with universities. Small and medium enterprises (SMEs) and university partnerships are crucial for accelerating firm growth, solving business challenges, and bringing novel ideas to market. These partnerships not only help researchers ask better questions but also enable SMEs to innovate and overcome their internal R&D limitations. Despite the resource constraints that SMEs frequently encounter, such as limited time and financial resources, collaborations can provide access to cutting-edge techniques and knowledge, and enhance the absorptive capacity necessary to benefit from these partnerships.

Recent data underscores the substantial contributions of SMEs to Australia's innovation ecosystem. For the fiscal year 2021–22, SMEs accounted for 55 percent of the country's total R&D spending by businesses, surpassing larger corporations for the first time. This trend emphasises the importance of supporting SMEs in their innovation efforts and ensuring they have the resources and opportunities to collaborate effectively with universities.

Over time, governments and other funding bodies have invested in programs designed to encourage collaboration between businesses, universities, and research institutes. These initiatives aim to generate new knowledge, ideas, and innovations that drive economic, societal, and environmental benefits. However, there is a growing recognition of the necessity to improve the accessibility, design, and implementation of these programs to maximise their impact.

This report delves into the critical role that support programs play in fostering university-industry collaborations, particularly for SMEs. It systematically reviews the outcomes of various support programs for SMEs, provided by federal, state, territory, and local governments, as well as other key players in the innovation ecosystem, such as CSIRO and universities. By evaluating the efficacy of these programs and identifying areas for improvement, the report provides valuable insights into how these initiatives impact SME growth and innovation. It offers a comprehensive analysis of the outcomes for SMEs participating in support programs and examines the characteristics of SMEs that derive the most from these programs.

The findings point to the need for tailored programs for SMEs of different sizes, ages, industries, regions, and capability profiles. Of particular interest is the innovation benefits for regional businesses, reputational benefits for metro businesses, and the differences between outcomes achieved through facilitated versus non-facilitated programs.

This report provides a clear understanding of the challenges and opportunities faced by SMEs in Australia and offers valuable recommendations for enhancing the design and implementation of these programs to better support our nation's economic growth and diversification. I firmly believe that this report serves as a valuable resource for policymakers, researchers, and industry stakeholders, contributing to the ongoing efforts to strengthen Australia's innovation ecosystem.

Professor Paul Bonnington
Deputy Vice-Chancellor
(Research and Innovation) (Interim)
University of Queensland

Executive summary

Collaborations between small and medium enterprises (SMEs) and universities or research institutions (URIs) are recognised as critical drivers of innovation, however little analysis has been undertaken to understand the individual commercial outcomes for SMEs and how collaboration influences their future planning and growth.

In partnership with the University of Queensland, this report and research, seeks to investigate Australian SMEs' outcomes from collaborations with URIs, with a particular focus on those that have taken part in three types of collaboration programs:

i. **Facilitated dollar-matched programs**
ii. **Competitive grant programs**
iii. **Student programs.**

A survey of 201 businesses across various sizes, geographies and sectors, revealed insights into the role and effectiveness of these collaborations. Performance outcomes were analysed across three domains: innovation and business capability, organisational impact, and additional collaborative outcomes.

Key findings

1. **Collaborations with URIs accelerate SMEs' ability to innovate and bring ideas to market**
   Projects lead to tangible outcomes such as new/improved products, prototypes, and derisked early-stage R&D.

2. **SME-URI collaboration supports businesses as they grow**
   Micro and small businesses focus on early-stage innovation; larger firms access external R&D funding and tackle more complex innovation challenges.

3. **Collaboration helps SMEs address challenges and opportunities specific to their industry**
   Medtech/biotech firms focus on derisking early-stage R&D; manufacturing and digital technology SMEs focus on product development; energy firms prioritise independent validation.

4. **Facilitated dollar-matched programs lead to tangible outputs, and competitive grants support more sophisticated collaboration**
   Different program types achieve certain outcomes, aligned to the varying sizes and maturity levels of SMEs.

5. **Facilitated dollar-matched programs achieve a similar overall impact to higher-value competitive grant programs**
   Similar impact magnitudes were found in some areas including new collaborations, access to further grants and improved competitiveness.

6. **Regional SMEs gain greater outcomes than metro SMEs**
   Regional SMEs benefit more strongly from collaboration, scoring more highly than metro in almost all positive categories.

Recommendations

1. **Continue to foster collaboration between SMEs and URIs** by reducing barriers, and increasing awareness through targeted outreach and industry initiatives.

2. **Align programs to support SMEs as they grow and mature** by reducing program 'gaps'; businesses can maintain relationships and maximise innovation outcomes.

3. **Tailor programs to industry-specific needs and opportunities** aligning programs with sector priorities to effectively leverage URI partnerships for growth and impact.

4. **Broaden the availability of facilitated programs:** lower-cost programs, particularly focusing on micro- and small firms, should be expanded.

5. **Invest in tailored programs for regional businesses** since the outcomes of SME-URI collaboration are magnified.

1 Introduction

Australia's economic future depends on diversifying industries, which can be accelerated by fostering innovation and collaboration between businesses and universities and research institutes (URIs). Government initiatives, such as funding and grant programs, are designed to encourage these partnerships to deliver economic, societal, and environmental benefits (DISR, 2017; Palangkaraya et al., 2023; Plunket, 2024).

Some government and research programs specifically target small and medium-sized enterprises (SMEs), supporting them to make connections with researchers, providing resources to address business challenges, bringing new ideas to market, and driving growth. These programs can be categorised into three types:

- **Facilitated dollar-matched programs** (e.g. Innovation Connections, CSIRO Kick-Start and SIEF STEM+ Business) provide SMEs with matched funding to access expert researchers. These programs help businesses connect with R&D to develop new products or enhance capabilities by engaging directly with URIs. Facilitators in these programs play an active role in finding the best expertise for the project, ensuring goals are aligned and resources are used effectively.
- **Competitive grant programs** (e.g. Australia Research Council [ARC] Linkage Program, Cooperative Research Centres [CRC], Industry Growth Centres [IGC], etc.) usually provide SMEs with financial support for research and development projects without the direct involvement of a facilitator to connect businesses with URIs. Grant values are often much larger than for facilitated dollar-matched programs.
- **Student programs** (Industry PhD [iPhD] and APR Intern) empower students to solve real-world business problems, fostering innovation and providing valuable learning opportunities.

Each program type offers unique benefits and faces distinct challenges, providing varying levels of support tailored to the specific needs of SMEs.

This report investigates the impact of these programs on aspects of SMEs' growth, operations and performance. It evaluates how these collaborations influence innovation outcomes, such as business growth, export success, and environmental or social contributions. Additionally, the report explores which business types – considering factors such as size and sector – derive the greatest value from partnering with research organisations, aiming to identify opportunities for improvement and better alignment with SME needs, as well as identifying trends in demographics, industry sectors and regional vs metro locations.

2 Background

The research translation problem

The seminal model of collaborations between research institutions, industry and governments, the Triple Helix Model, explains how these three parties come together for knowledge creation, research translation and development of competitive advantage through commercialisation of knowledge and research (Etzkowitz & Leydesdorff, 1997; Guimón & Paunov, 2022; Miller et al. 2018). *Businesses* benefit from such collaborations through an increase in the number of patents registered and improved performance (Cheng et al., 2020), an increase in R&D expenditure per employee, and an increased share of R&D employment (Scandura, 2016). *Universities* benefit through the translation and implementation pathways for their knowledge, with academics benefiting from industry collaborations through, for example, additional resources and support, career advancement and prestige (Harman, 2001).

Recognising these benefits, *governments* typically seek to encourage collaborations that lead to innovation through policy and funding initiatives (Jongbloed, 2015). Globally, government mechanisms that support innovation include:

- Intellectual Property (IP) legislation and enforceability (Nasiibah Ramli & Zinatul, 2017).
- Development of collaboration spaces, such as science parks, innovation hubs, incubators or innovation agencies (Bajada et al., 2022).
- Financial support, including grants, subsidies and seed funding, and encouragement of venture capital for seed and proof of concept funding (Wonglimpiyarat, 2015).
- Competence/capability development (Kochenkova et al., 2016), including education and guidance around best practices (Harman & Harman, 2004).

However, there are still questions as to whether these support mechanisms are effective in Australia. For example, Australia is ranked 10th globally for research journal output (Scimago, 2023) but remains low on commercialisation. Similarly, Australia ranks 23rd of 133 economies in the Global Innovation Index but is highlighted as an inefficient innovator, finding it more challenging to convert innovation investment into tangible innovation output (WIPO, 2024).

Despite these global rankings, there are positive developments from collaborative innovation investment in Australia. In 2023, ACIL Allen found that each dollar spent on ARC programs delivers $3.32 to the economy and that these programs create around 6,570 jobs annually. Firms can experience similarly positive outcomes, with a review of ARC Linkage program data (Palangkaraya et al. 2023), finding that successful applicants' turnover was 20.8 per cent higher than unsuccessful applicants.

Return on investment

In recent years, there has been an increase in reports to understand the return on investment from grant programs and their impact (DISR, 2017; Universities Australia, 2018; Nicolaou et al., 2019; DISR, 2023; ACIL Allen, 2023), with more underway (Punket, 2024).

These reviews identify the positive impact of industry-URI collaboration on innovation and economic output in general, but do not focus on the specific role and impact on SMEs. This distinction is important, because SMEs face unique challenges and opportunities compared to larger enterprises (Cao, Verreynne & Torres de Oliveira, 2024). SMEs often lack the resources and capacity for extensive R&D, making external collaborations vital for innovation and growth. The emphasis on collaboration with URIs can be especially beneficial for SMEs, providing them access to cutting-edge research, technologies, and expertise that would otherwise be beyond reach – all while being more agile, and able to integrate new technologies faster than their larger counterparts.

Moreover, SMEs play a crucial role in the economy, contributing significantly to employment and regional development. By fostering stronger collaborations between SMEs and URIs, grant programs can help SMEs overcome barriers to innovation, enhance their competitiveness, and drive economic growth.

3 Research method

This project utilised data collected through an online survey targeted at SMEs. The survey was administered by a third-party provider, IPSOS, to ensure optimal data management. It focused on SMEs that had previously participated in innovation, R&D collaboration, and commercialisation programs.

The survey questions were developed based on a comprehensive review of policy analysis methods, prior reports (Verreynne et al., 2021), relevant literature, and qualitative data. The CSIRO team and external experts rigorously reviewed the survey design to ensure validity and relevance.

The survey received responses from 201 businesses. Respondents represented a diverse range of business sizes, locations and industry sectors.

The collected data were analysed using Stata software. Descriptive statistics, including mean values were employed to summarise respondent characteristics. To assess the impact of collaboration programs on performance, propensity score matching was used to pair collaborators with non-collaborators, followed by analysis through ordinal least squares regression.

The analysis explored a range of performance indicators, including innovation outcomes (e.g., new products and processes, product validation, patents/ IP submissions) and organisational performance metrics (e.g., capital raised, improved competitiveness, market access, revenue growth, market credibility, and job creation). Additionally, the potential negative impacts of participation in collaboration programs were investigated, such as IP control loss, delays in progress or market entry, and reduced financial performance.

4 Demographics of survey respondents

Of the 201 businesses that responded to the survey, one-fifth employed fewer than five employees (micro-businesses), and one-third employed between six and 19 people (small businesses).

Thirty-nine per cent were medium-sized businesses, employing between 20 and 199 people, and seven per cent were large businesses, employing 200 employees or more (see Figure 1).

Nineteen per cent of respondent businesses operated in manufacturing industries, with med tech, biotech and pharmaceutical (15%) and digital technology (10%) the next most common (Figure 2). Energy and emissions reduction, and mineral and mining accounted for eight and nine per cent of the sample, respectively (Figure 2).

Additionally, 42 per cent of respondents were based in regional areas, with the remaining 58 per cent in metropolitan areas (Figure 3).

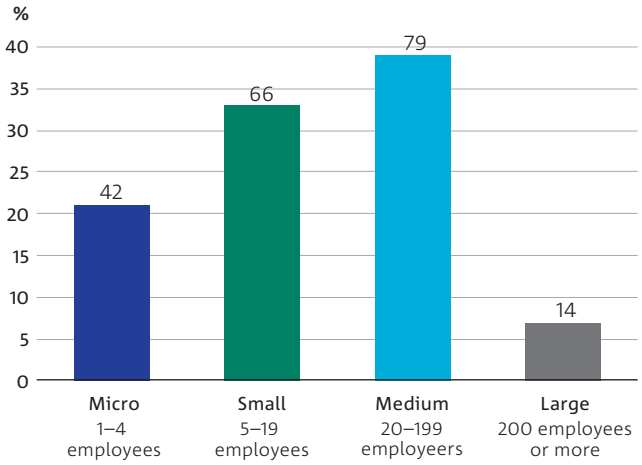

Figure 1: Surveyed respondents by firm size

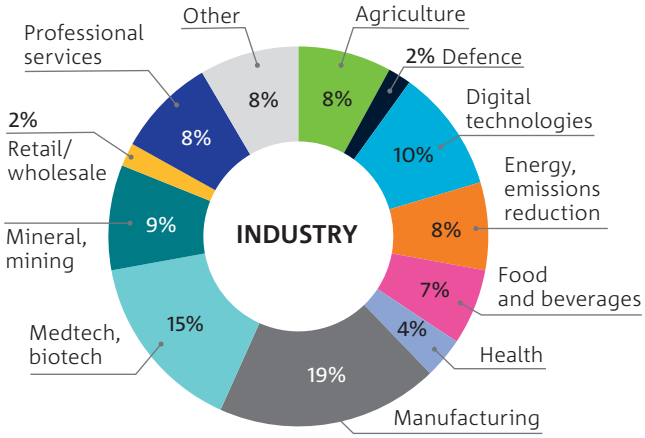

Figure 2: Surveyed respondents by industry

Demographics of firms participating in selected programs

Firms were asked whether they had received financial support to engage in collaborative R&D programs with URIs over the past five years. A total of 159 respondents answered yes, with a split of the programs shown in Figure 4.

When viewed split by business size, larger firms tended to engage with CRCs, ARC and iPhD programs (25%, 33%, and 17%), whereas micro firms engaged in CSIRO Kick-Start program, aligned with program objectives (Figure 5).

Small businesses often accessed state/territory grants (30%), while 81 per cent of medium-sized firms participated in the Innovation Connections program (Figure 5).

Seventy-five per cent of large respondents indicated they took part in Innovation Connections (Figure 4). Since this program was designed for SMEs, it can be assumed these businesses were previously SMEs that have recently grown to a larger size. For completeness, data from large businesses are included when comparing business size. However, due to the low response rate (14 large businesses – Figure 1) and the indication that many are 'recent' SMEs, data from large respondents will not be the focus of our investigations.

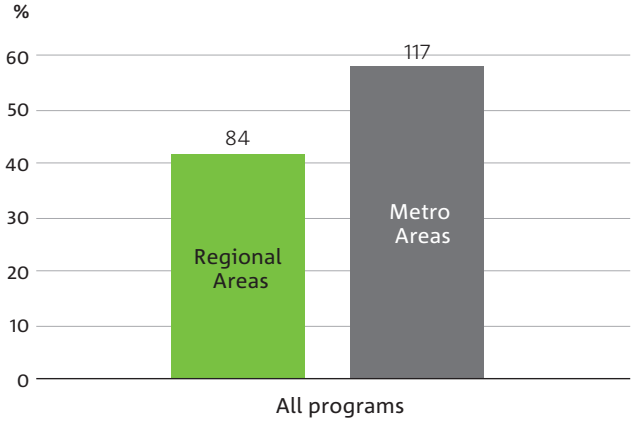

Figure 3: Surveyed respondents in regional and metropolitan areas

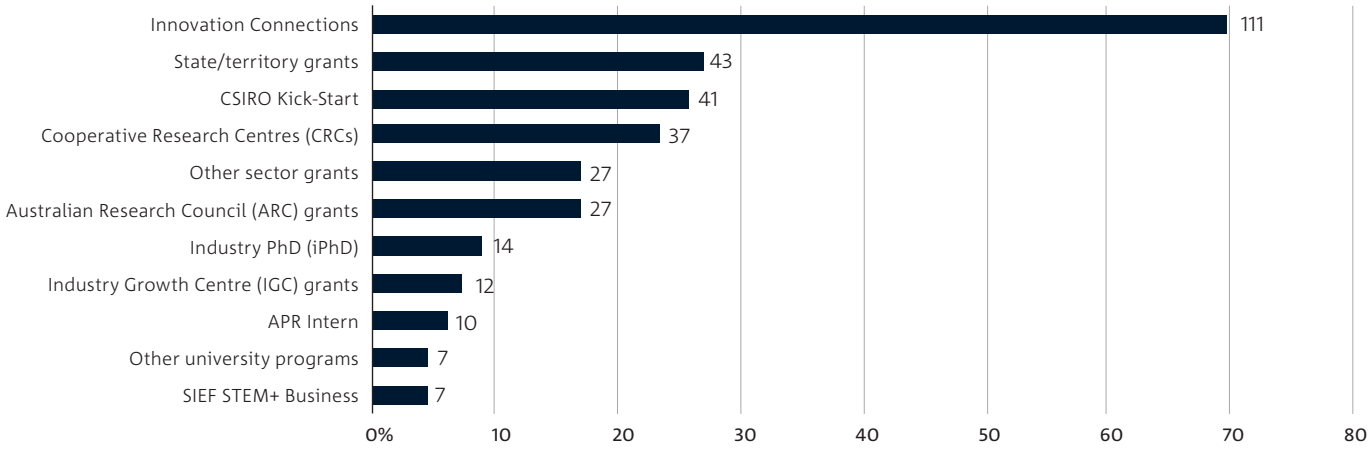

Figure 4: Surveyed respondents who received financial support for URI collaboration, by selected program

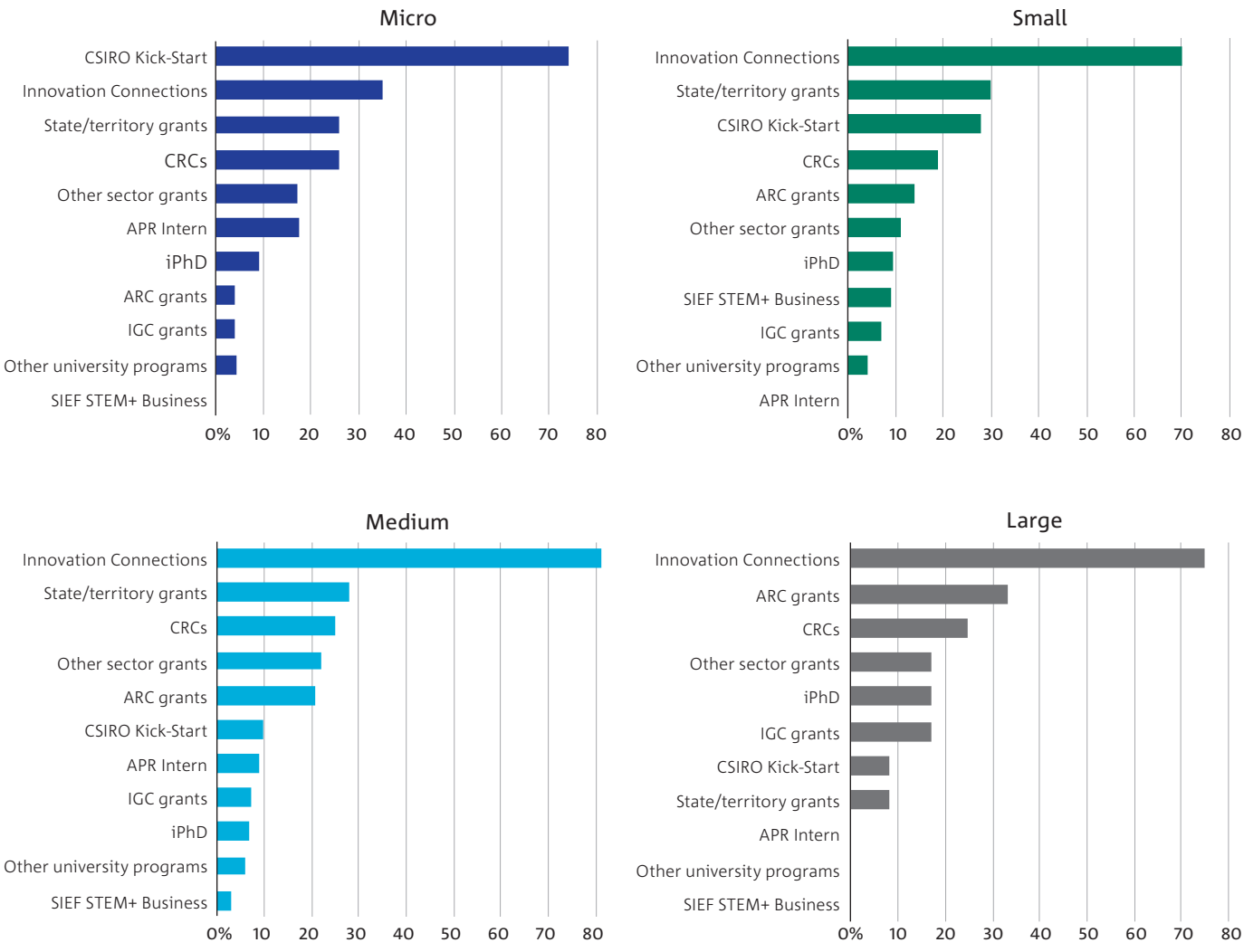

Figure 5: Surveyed respondents who received financial support for URI collaboration, by selected program and business size

5 Findings

Three categories of outcomes from SME-URI collaborations were analysed: (i) Innovation and business capability outcomes, (ii) organisational performance outcomes, and (iii) additional outcomes. These outcomes are analysed across all survey respondents, followed by a comparison of selected program type (facilitated dollar-matched versus competitive grant), finally by regional versus metropolitan areas.

Outcomes from collaborating with URIs

Innovation and business capability outcomes

Figure 6 illustrates the broad range of innovation outcomes achieved through collaborative efforts, with a standout 66 per cent of respondents reporting *new/improved products*. This outcome showcases the high likelihood of collaborations driving tangible outcomes. Additionally, 40 per cent of participants *developed prototypes*, highlighting the role of partnerships in bringing ideas closer to market, and enabling businesses to test and refine their innovations.

Respondents found collaboration led to other critical enablers of innovation success. For instance, 31 per cent of respondents reported that collaboration *derisked early-stage R&D*, reducing uncertainty and improving the likelihood of future success. Similarly, 29 per cent achieved *independent validation*, a crucial step in ensuring quality, building credibility, and preparing for market entry.

Additional benefits included advancements in *submitted/granted IP* (14%), *increased speed to market* (12%), and *licensed technology* (12%), showcasing how collaborations can open new pathways for commercialisation and growth.

While positive outcomes dominated, project abandonment was also observed, providing valuable lessons for collaboration improvements. For example, 35 per cent of projects led to *abandoned results*, and 29 per cent cited *viability* as the reason for discontinuation. However, the very nature of R&D means that some new ideas will not work and discovering that products or services are unviable early prevents businesses from wasting further valuable resources on that product/service pathway.

Overall, the data reflect the immense value of collaboration in innovation, with significant benefits outweighing hurdles.

Innovation and business capability outcomes by business size

When split by firm size (micro, small, medium, large) distinct patterns in how different sized companies approach and experience innovation are revealed (Figure 7).

For micro businesses, *new/improved products* (55%) and *derisked early-stage R&D* (36%) were the most frequently reported outcomes, indicating the smallest businesses often focus on the early stages of innovation, where product development and research are critical in their commercialisation pathway. Similarly, small businesses achieved an enormous 78 per cent success rate in developing *new/improved products*, far above other outcomes, highlighting their agility and focus in turning ideas into valuable products and services. Additionally, small businesses were able to *develop prototypes* (42%) and seek *independent validation* (31%). This may indicate that small businesses are better positioned than micro businesses to move from research to product development but may still face hurdles in fully commercialising these innovations, as reflected in the reporting of *abandoned projects* (29%).

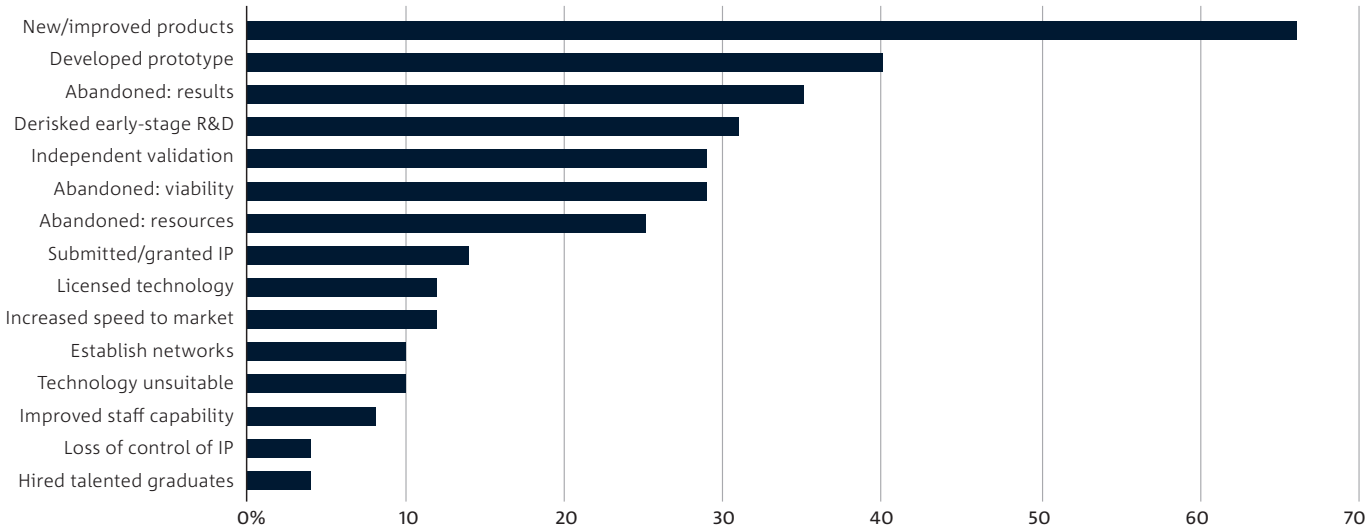

Figure 6: Innovation and business capability outcomes

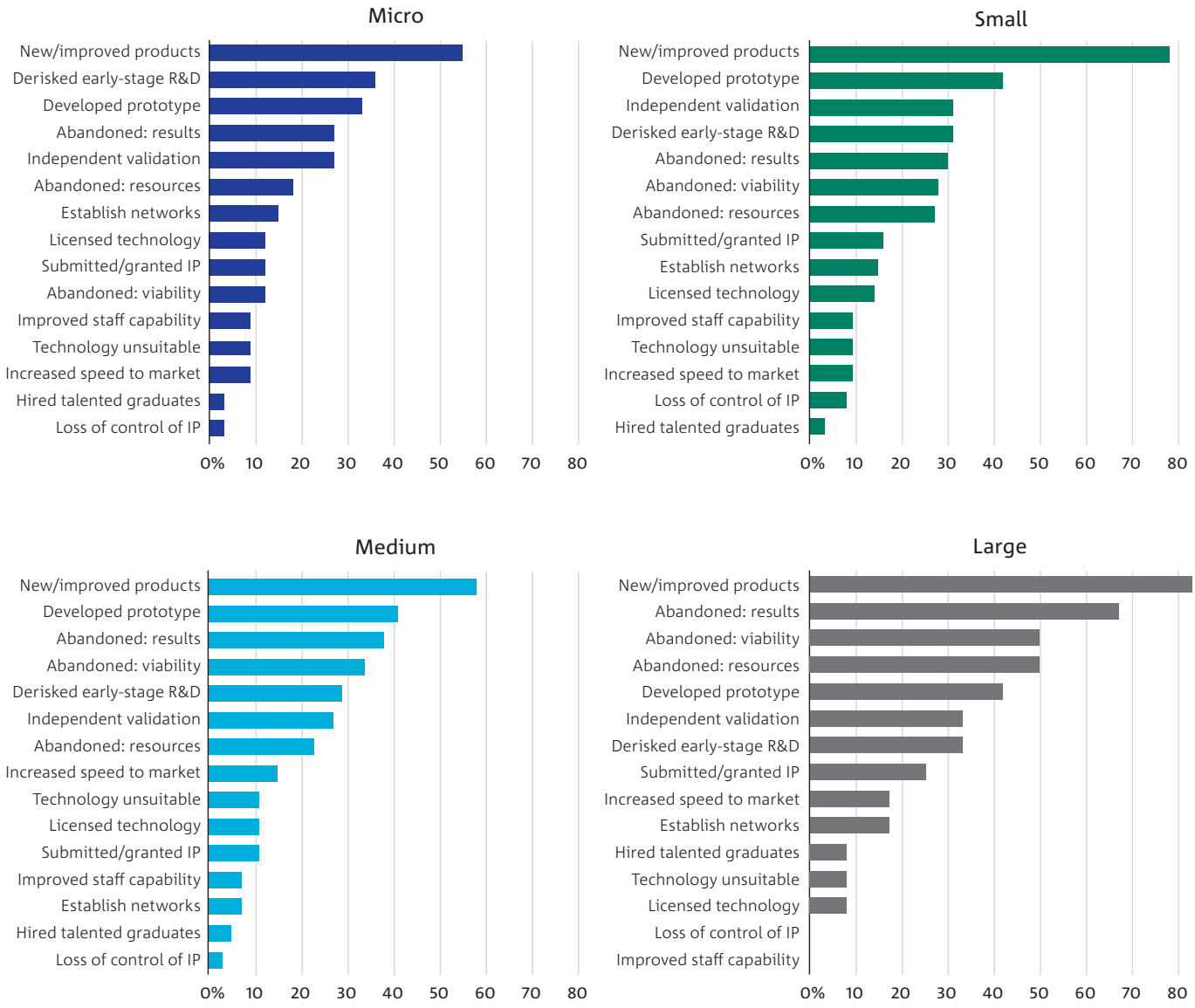

Figure 7: Innovation and business capability outcomes by size

Medium-sized businesses demonstrate capacity for innovation, with *new/improved products* (58%) and *developed prototypes* (41%) being the top outcomes, highlighting their ability to turn ideas into tangible results. These businesses also show significant alignment with *independent validation* (27%), suggesting a mindful approach to ensuring the quality of their innovations. While there is some occurrence of abandoned projects – *abandoned: results* (38%) and *abandoned: viability* (34%), this may reflect a natural part of the innovation process where businesses refine their focus, reassess priorities, or make strategic decisions to pivot. Overall, medium-sized businesses actively advance their innovation agendas, with a strong foundation for growth and scalability.

Large businesses reported the highest levels of *new/improved products* (83%) and exhibited the highest frequency of outcomes related to project abandonment, particularly in terms of *abandoned: results* (67%), *viability* (50%) and *resources* (50%). This may reflect the complexity and scale of innovation within larger organisations, where projects are often revisited or discarded based on evolving business needs or strategic shifts.

Overall, the data reveal that as businesses grow in size, their innovation efforts tend to become more diversified and complex, with larger firms reporting a broader range of outcomes, including both successes and setbacks. By contrast, smaller businesses are more likely to report outcomes that reflect early-stage innovation processes, often focused on product development and initial R&D. These patterns provide insights into the various innovation opportunities and hurdles faced by businesses and provide insights into how programs could be specifically targeted at businesses of certain sizes.

Innovation and business capability outcomes by key industries

Figure 8 highlights innovation outcomes across various industries.

Minerals/mining, digital technologies and manufacturing stand out with particularly high rates of *new/improved products* (81%, 72% and 71% respectively), reflecting strong commercial outcomes in these sectors. Digital technologies, in particular, excel in *developed prototype* (61%), alongside medtech/biotech (52%), demonstrating successful progressions along the commercialisation pathway in these tech-led sectors.

The data also reveal strong early-stage positive outcomes in medtech/biotech and food and beverages, where at least half of businesses were able to *derisk early-stage R&D* (55% and 50%, respectively). By contrast, *independent validation* was prominent in energy/emissions reduction (43%) and manufacturing (40%) as these customer-focussed businesses exploit the competitive edge they achieve through URI collaboration.

The fast-paced nature of the food and beverage industry is highlighted by the relatively high rate of *increased speed to market* (30%) – showcasing that URI collaboration is helping businesses get products onto shelves.

Abandoned projects due to a lack of usable results were common across sectors – highlighting the risky nature of R&D, but also saving company resources on projects that are not commercially viable. More specifically, there was noticeably higher *abandonment due to resource constraints* in the minerals/mining sector (44%) – where many junior exploration businesses are operating against multi-national conglomerates, and higher *abandonment due to viability concerns* in digital technologies (50%) where the R&D could be considered higher risk.

These insights highlight the value these programs bring to various industries, helping to pinpoint sector-specific needs and opportunities when designing and improving URI-collaboration programs.

	SECTORS								
OUTCOME	AGRICULTURE	DIGITAL TECHNOLOGIES	ENERGY/ EMISSIONS REDUCTION	FOOD AND BEVERAGES	MANUFACTURING	MEDTECH/ BIOTECH	MINERALS/ MINING	PROFESSIONAL SERVICES	OTHER
New/improved products	67%	**72%**	43%	60%	**71%**	59%	**81%**	63%	64%
Developed prototype	20%	**61%**	43%	30%	51%	**52%**	25%	25%	50%
Abandoned: results	40%	39%	29%	30%	37%	28%	25%	38%	29%
Derisked early-stage R&D	27%	28%	21%	**50%**	29%	**55%**	44%	0%	29%
Independent validation	33%	22%	**43%**	30%	**40%**	21%	25%	31%	14%
Abandoned: viability	13%	**50%**	14%	20%	20%	38%	25%	44%	36%
Abandoned: resources	20%	33%	14%	20%	26%	17%	**44%**	31%	14%
Submitted/ granted IP	7%	11%	7%	20%	17%	21%	6%	13%	14%
Licensed technology	27%	11%	0%	10%	9%	21%	19%	0%	14%
Increased speed to market	20%	17%	7%	**30%**	17%	10%	0%	13%	0%
Establish networks	13%	17%	0%	10%	6%	17%	13%	6%	7%
Technology unsuitable	0%	17%	0%	10%	9%	17%	13%	6%	14%
Improved staff capability	0%	22%	7%	10%	0%	10%	6%	0%	7%
Loss of control of IP	7%	11%	14%	0%	0%	3%	6%	6%	0%
Hired talented graduates	7%	11%	7%	0%	6%	3%	0%	0%	0%

Figure 8: Innovation and business capability outcomes by key industries

Organisational performance outcomes

Figure 9 highlights the organisational benefits of URI collaboration for the businesses surveyed, with over half (51%) of firms experiencing *improved credibility*. This outcome bolsters trust among stakeholders and serves as a foundation for long-term growth. Additionally, 37 per cent of businesses reported *improved competitiveness*, a crucial outcome in maintaining or gaining an advantage in dynamic market environments. *Access to further grants* (32%) was another notable outcome, reflecting how collaborations can unlock financial opportunities to support innovation and expansion.

Beyond these top three outcomes, collaborations also contributed to tangible operational and market benefits. *Job creation* (23%) and *increased productivity* (22%) highlight how these partnerships drive economic and workforce development. *Access to new markets* (20%) and *cost savings* (19%) reveal the role of URI collaborations in helping businesses expand their reach and operate more efficiently.

Interestingly, the data also shed light on broader impacts. While a smaller proportion of businesses reported *social benefits* (16%) and *environmental benefits* (14%), these outcomes demonstrate the potential of URI collaborations to contribute to sustainability and community well-being.

In general, organisational outcomes are lower scoring than innovation outcomes – highlighting that businesses are entering into URI collaborations to improve specific products/services or relationships, rather than to boost their internal practices.

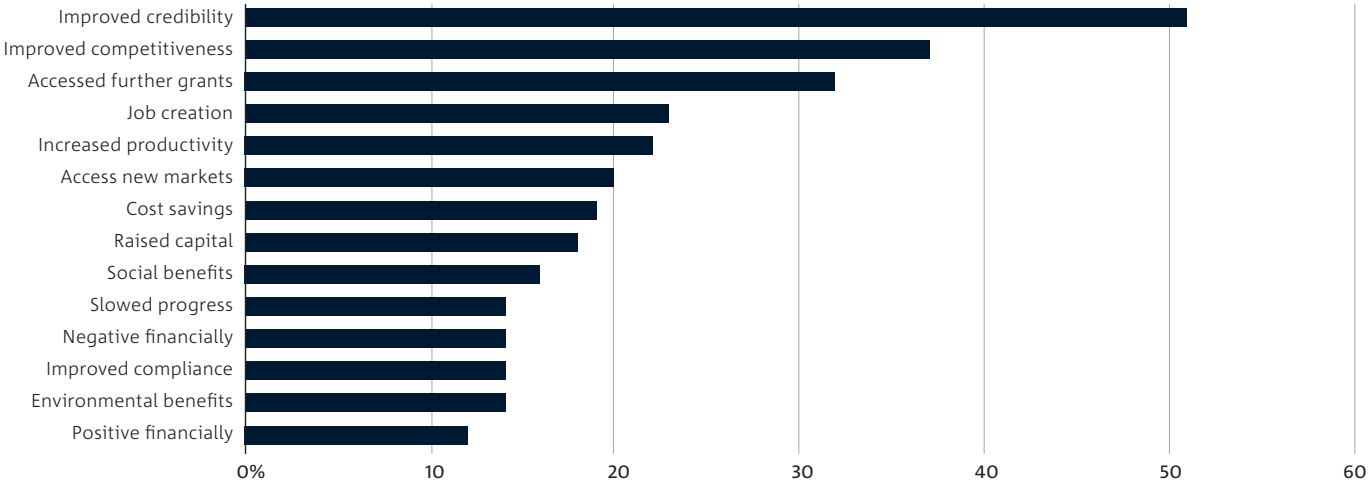

Figure 9: Organisational outcomes for URI collaborating firms

Organisational performance outcomes by business size

Figure 10 compares performance outcomes across micro, small, medium, and large businesses collaborating with URIs. *Improved credibility* remains the most commonly reported benefit for micro (64%), small (52%), and medium firms (45%), while large businesses report *access further grants* (58%) as the highest. This suggests that smaller firms, particularly micro and small, significantly value the reputational boost provided by URI collaborations to enhance trust and visibility in the market, while larger firms utilise their relationships and standing with URIs to access more external R&D funding.

Improved competitiveness was another key outcome, particularly for large businesses (50%), followed by medium (38%), micro (36%) and small (34%). This indicates that while large businesses experienced the most significant improvement, the gains in competitiveness for medium, micro, and small businesses were not far behind, suggesting a broad impact across all business sizes.

Increased productivity was reported more often from medium (26%) and small businesses (22%) rather than micro and large firms (both 15%), while *access to new markets* was more common for small firms (27%) and large firms (25%), compared to medium (16%) and micro businesses (15%). While these numbers are relatively small – it highlights that not all outcomes are size dependent and can be firm-specific.

Broader impacts, such as *social benefits* and *environmental benefits*, were also size-dependent. *Social benefits* were most frequently reported by micro businesses (27%), followed by small (19%), medium (11%), and large firms (8%). *Environmental benefits* were notably high for small firms (20%), compared to medium (10%), large (9%), and micro businesses (3%), reflecting a focus on sustainability in new businesses – perhaps led by consumer demand for new-to-market products and services.

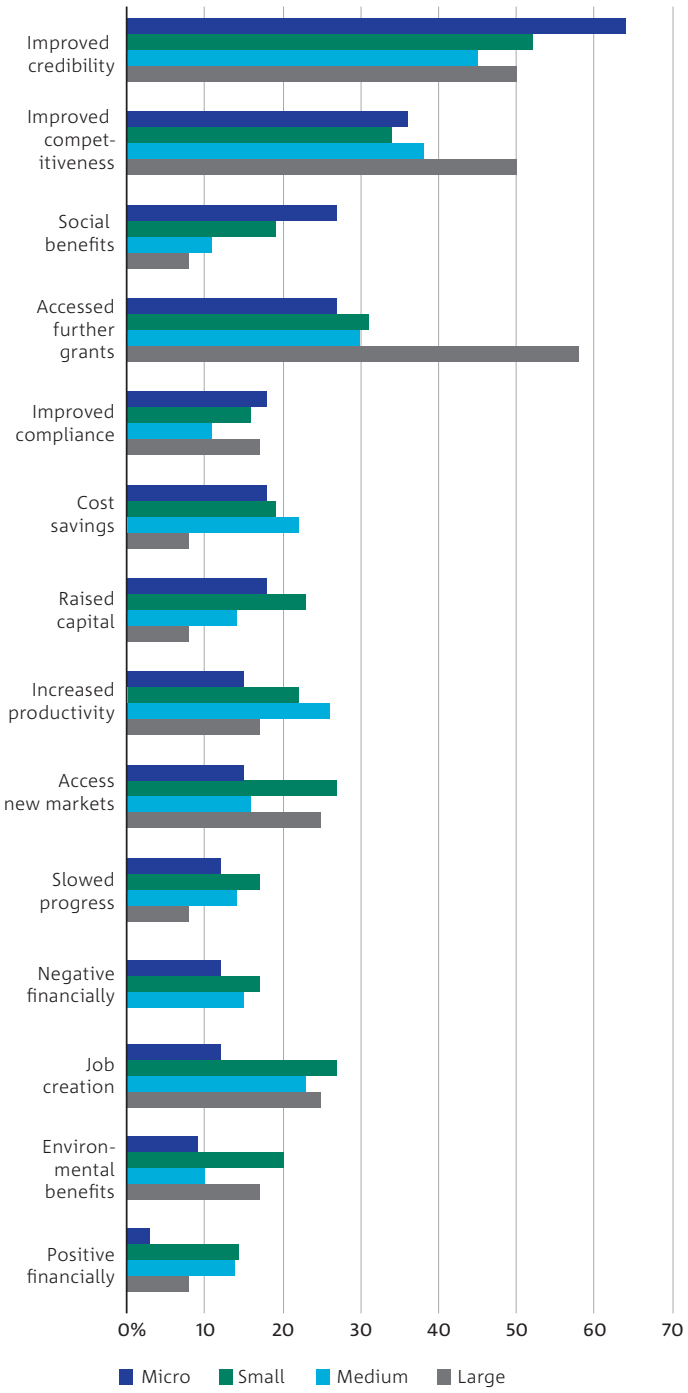

Figure 10: Organisational performance outcomes by business size

Organisational performance outcomes by key industries

Figure 11 highlights the varied outcomes achieved across different sectors.

As expected, most sectors reported *improved credibility* as their highest outcome, however energy/emissions reduction (36%) was significantly lower than other sectors. *Improved competitiveness* is particularly prominent in the food and beverages sector (60%) and manufacturing (54%), while both sectors manage to minimise *negative financially* outcomes (0%), signalling that R&D decision-making is well-honed.

Food and beverages (50%) and medtech/biotech (45%) lead the way in *accessed further grants* (in fact it was the joint highest score for medtech) with digital technologies (33%) and manufacturing (31%) reporting moderate success in this area. Conversely, minerals/mining (13%) lags behind, indicating potential hurdles in accessing the funding necessary to sustain or scale projects – or that projects tend to be finite rather than longer term.

Environmental benefits were most notable in food and beverages (50%), followed by manufacturing (26%) and agriculture (20%), by contrast medtech/biotech (3%) reported significantly lower results. Notably, energy/emissions reduction recorded no *environmental benefits* (0%), highlighting a potential area for improvement in achieving sustainable outcomes.

Digital technologies had the highest success in *raising capital* (44%) and *slowed progress* (39%), showcasing the high risk-reward nature of the industry. *Slowed progress* is also found in energy/emissions reduction (29%), which may reflect the complexity of projects or reliance on rapidly evolving technologies.

The data highlight improved compliance and environmental benefits in the food industry, a highly regulated sector facing evolving sustainability expectations, and emphasise the tech sector's focus on raising capital for development. While certain outcomes in some sectors are less prominent, particularly in financial or workforce outcomes, the overall trends reflect significant achievements and a strong foundation for further collaboration.

	SECTORS								
OUTCOME	AGRICUL-TURE	DIGITAL TECHNOL-OGIES	ENERGY/ EMISSIONS REDUCTION	FOOD AND BEVERAGES	MANUFAC-TURING	MEDTECH/ BIOTECH	MINERALS/ MINING	PROFES-SIONAL SERVICES	OTHER
Improved credibility	60%	56%	**36%**	60%	43%	45%	50%	69%	50%
Improved competitiveness	40%	44%	21%	**60%**	**54%**	28%	38%	31%	21%
Social benefits	13%	22%	14%	20%	17%	7%	13%	19%	29%
Accessed further grants	20%	**33%**	21%	**50%**	**31%**	**45%**	**13%**	31%	21%
Improved compliance	7%	17%	14%	30%	11%	7%	25%	19%	14%
Cost savings	33%	28%	14%	20%	17%	28%	19%	6%	14%
Raised capital	0%	44%	14%	30%	17%	24%	6%	0%	21%
Increased productivity	40%	28%	7%	20%	34%	17%	6%	6%	29%
Access new markets	13%	17%	14%	30%	37%	10%	25%	13%	21%
Slowed progress	7%	**39%**	**29%**	20%	3%	24%	0%	6%	7%
Negative financially	13%	28%	21%	**0%**	**0%**	17%	19%	19%	29%
Job creation	20%	39%	7%	30%	26%	24%	19%	6%	29%
Environmental benefits	**20%**	17%	**0%**	**50%**	**26%**	**3%**	6%	6%	7%
Positive financially	7%	17%	0%	20%	20%	3%	6%	13%	14%

Figure 11: Organisational performance outcomes by key industries

Additional collaborative outcomes

Figure 12 highlights additional collaborative outcomes achieved by respondents when engaging with URIs.

All firms report *continuing relationships with URIs* at over 60 per cent highlighting the desire and need for ongoing collaboration. Large businesses recorded the highest percentage across most outcomes, except for collaborations in new areas (however, with only 14 large respondents (Figure 1), the data are less representative). Medium-sized businesses excel in creating *new collaborative opportunities* (60%), likely due to their capacity to scale and diversify their partnerships. Micro enterprises show comparable performance in *new funding applications* (40%) and building *new relationships with different URIs* (35%), indicating their focus on expanding networks to secure financial and collaborative support.

Collaborations in new areas is significantly lower for micro enterprises (10%), than for small (30%) and medium (25%) enterprises. This is understandable since many start-ups are focusing on a single path to market, and so do not have the interest or resources to explore new areas.

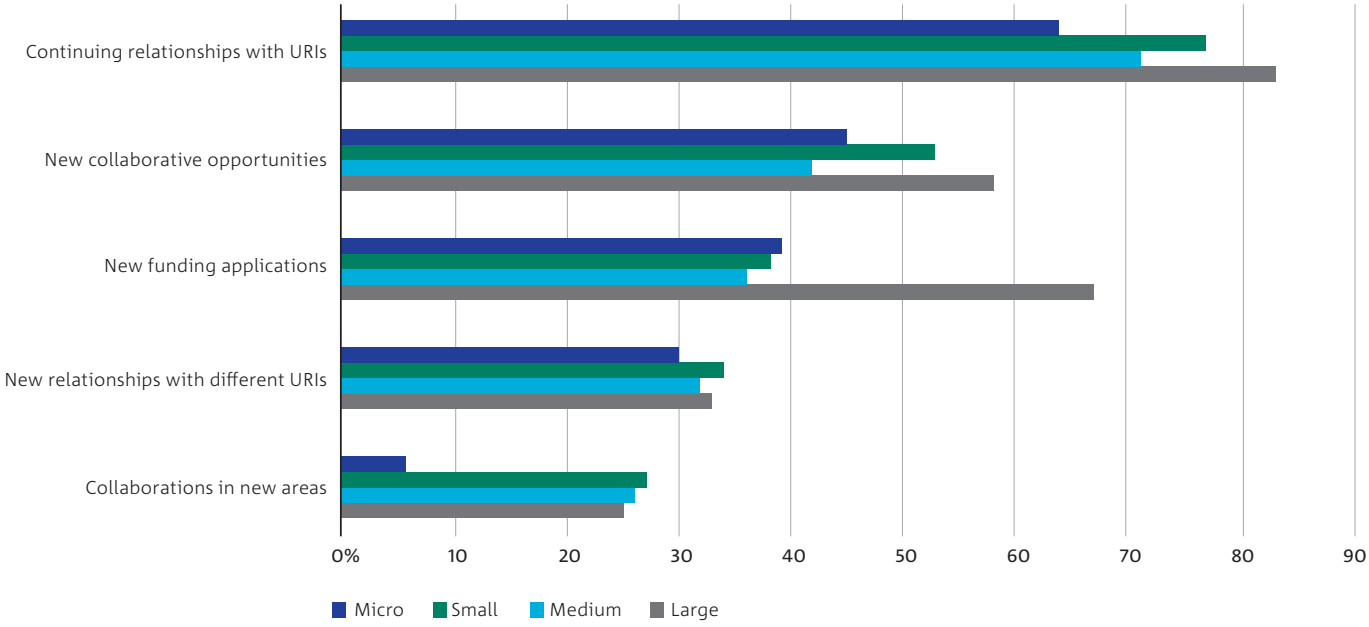

Figure 12: Additional collaborative outcomes by business size

Outcomes from participation in selected programs

This section focuses on the outcomes achieved through participation in selected collaboration programs. Facilitated dollar-matched programs, such as Innovation Connections and CSIRO Kick-Start, provide SMEs with matched funding, expert research support, and active facilitation to address specific challenges and foster innovation. By contrast, competitive grant programs, such as ARC Linkage Program, Cooperative Research Centres, and Industry Growth Centres, emphasise financial support for R&D initiatives, allowing businesses greater independence in pursuing innovation projects while leveraging resources to achieve high-impact outcomes.

Student programs (iPhD, APR Intern and Other University-specific programs) were excluded from the selected programs comparison due to low response rates (only 14, 10 and 7 businesses participated, respectively – Figure 4). However, data from student programs are included in the individual program analysis presented later in this section.

Innovation and business capability outcomes in selected program types

Figure 13 provides a comparison of the innovation and business capability outcomes achieved by participants in facilitated dollar-matched programs and competitive grant programs. Facilitated dollar-matched programs demonstrate a stronger emphasis on creating tangible outputs, particularly in the development of *new or improved products* (72%) and *developed prototypes* (46%).

This higher focus on product innovation aligns with the collaborative and incremental approach characteristic of dollar-matched initiatives, where shared investment between stakeholders encourages a practical orientation towards innovation. These programs also excel in enabling participants to *de-risk early-stage R&D* (35%) and secure *independent validation* of their projects (30%), reflecting a strategic emphasis on reducing uncertainties and ensuring feasibility before scaling.

In contrast, competitive grant programs tend to deliver broader yet less product-focused outcomes. While they achieve slightly lower rates for *new or improved products* (67%) and *developed prototypes* (44%), they outperform in areas like *increased speed to market* (23%), *licensed technology* (20%) and *submitted or granted IP* (20%). This pattern suggests that competitive grants are particularly effective for more sophisticated engagements, for example intellectual property exploitation and sharing, which coincides with the goals that facilitated dollar-matched programs are for entry-level engagement and larger grant programs are more useful when relationships have been established.

Competitive grants report slightly higher rates of *abandoned project due to lack of useful results* (43%) and *viability* (38%), likely reflecting the ambitious nature of the projects they fund. Facilitated dollar-matched programs, while slightly lower in these metrics, still face notable *abandonment rates due to resource constraints* (25%).

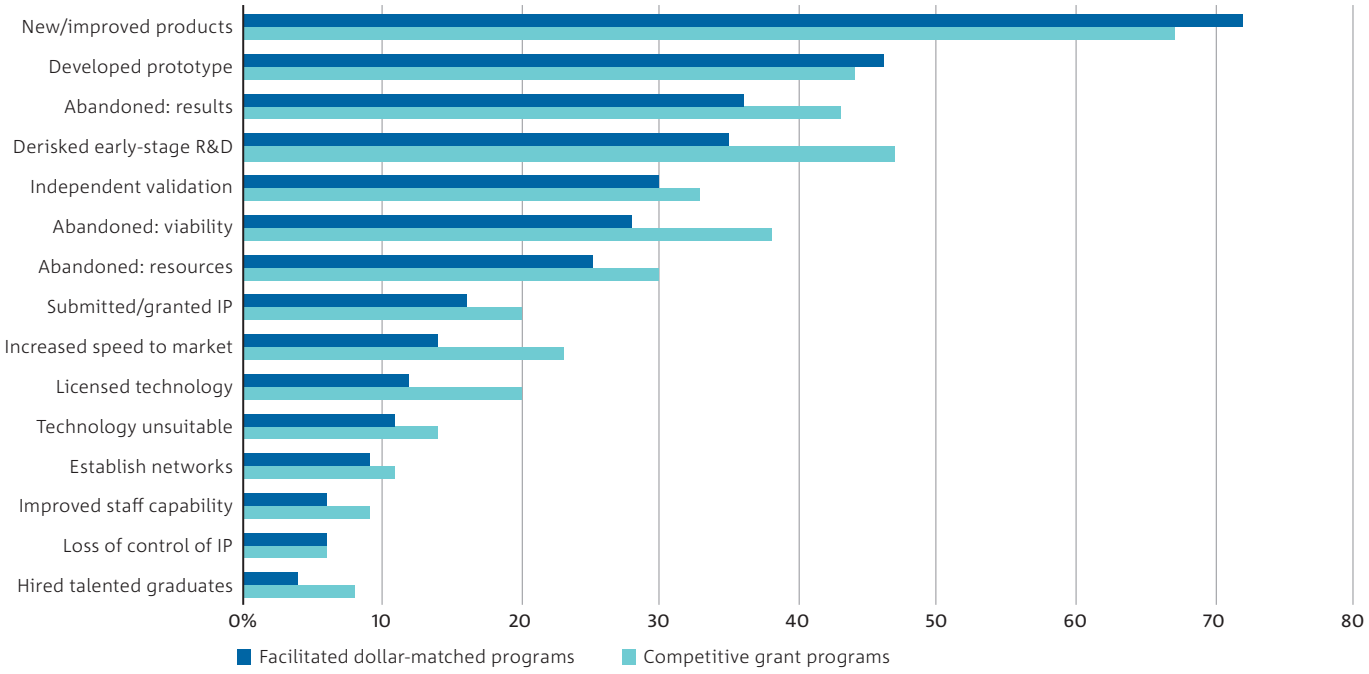

Figure 13: Innovation and business capability outcomes by selected programs

Innovation and business capability outcomes in individual programs

Figure 14 offers further insights into how specific initiatives deliver impact. The outcomes demonstrate considerable variation, reflecting the diversity of goals, structures, and participant groups involved in each program.

Industry Growth Centre (IGC) grants stand out as leaders in fostering product-focused innovation, with 100 per cent of participants reporting *new or improved products*. However, with only 12 respondents (Figure 4), the dataset lacks depth for broader generalisations. Despite the relatively small investment of $50K per project, compared to in CRCs for example, CSIRO Kick-Start and Innovation Connections both report high success rates, with 73 per cent of participants achieving *new/improved products*. These programs have demonstrated their effectiveness in supporting SMEs to take innovative ideas from concept to commercialisation using minimal financial resources.

Student programs are particularly successful in helping participants *de-risk early-stage R&D* (iPhD 71%, APR intern 70%), but show relatively high rates of *viability* (APR intern 70%), and *resource-related project abandonment* (iPhD 57%) – emphasising that these collaborations are often low risk with low financial investment. Additionally, IGC grants, APR Intern and CSIRO Kick-Start show strong performance in *developed prototype* (75%, 60% and 59% respectively), reflecting their focus on turning research ideas into proof-of-concept products that can advance to further stages of development and market entry.

Overall, the data show both the successes and hurdles of innovation-focused programs. Facilitated dollar-matched programs excel in delivering practical, incremental outcomes, such as new products and prototype development, while competitive grants help de-risk R&D and develop intellectual property.

	PROGRAM										
	INNOVATION CONNECTIONS	SIEF STEM+ BUSINESS	CSIRO KICK-START	CRCS	IPHD	APR INTERN	ARC GRANTS	OTHER SECTOR GRANTS	OTHER UNIVERSITY PROGRAMS	IGC GRANTS	STATE/ TERRITORY GRANTS
	PROGRAM TYPE										
OUTCOME	FACILITATED	FACILITATED	FACILITATED	COMPETITIVE	STUDENT	STUDENT	COMPETITIVE	UNKNOWN	UNKNOWN	COMPETITIVE	UNKNOWN
New/improved products	**73%**	71%	**73%**	78%	71%	80%	70%	59%	57%	**100%**	58%
Developed prototype	43%	29%	**59%**	54%	43%	**60%**	37%	52%	29%	**75%**	47%
Abandoned: results	38%	29%	34%	46%	57%	40%	52%	52%	57%	**75%**	49%
Derisked early-stage R&D	33%	29%	56%	62%	**71%**	**70%**	48%	56%	57%	75%	56%
Independent validation	26%	29%	41%	43%	21%	20%	33%	37%	14%	42%	35%
Abandoned: viability	31%	29%	24%	38%	43%	**70%**	48%	37%	57%	75%	44%
Abandoned: resources	23%	14%	34%	38%	**57%**	20%	37%	33%	29%	58%	33%
Submitted/ granted IP	15%	29%	24%	27%	50%	20%	33%	22%	14%	42%	26%
Licensed technology	12%	0%	27%	24%	43%	30%	22%	15%	14%	42%	26%
Increased speed to market	14%	0%	20%	24%	29%	40%	26%	19%	14%	50%	26%
Establish networks	9%	29%	15%	19%	14%	10%	15%	19%	0%	17%	16%
Technology unsuitable	12%	14%	17%	24%	14%	20%	22%	7%	0%	33%	19%
Improved staff capability	7%	0%	10%	11%	7%	10%	4%	15%	14%	25%	12%
Loss of control of IP	5%	29%	10%	8%	7%	0%	11%	11%	14%	17%	12%
Hired talented graduates	5%	0%	5%	11%	7%	10%	11%	22%	0%	8%	12%

Figure 14: Innovation and business capability outcomes in individual programs

Organisational performance outcomes in selected program types

Figures 15 provides an overview of the organisational performance outcomes achieved by participants in the selected collaboration programs, highlighting key distinctions between facilitated dollar-matched programs and competitive grant programs.

Despite smaller investments in facilitated dollar-matched programs, these programs' impacts were comparable, and in some cases better, than for higher-value competitive grant programs. *Improved credibility* was the most significant outcome, with 52 per cent of respondents reporting this benefit in facilitated dollar-matched programs, close to the 64 per cent achieved through competitive grants. Similarly, *accessing further grants* saw strong performance, with 36 per cent reporting this outcome under facilitated dollar-matched programs compared to 48 per cent from competitive grant programs. Another notable result was *improved competitiveness*, where 40 per cent of respondents from dollar-matched programs experienced this outcome, almost on par with 41 per cent in competitive grants. Notably, *increased productivity* was higher in facilitated dollar-matched programs (26%) compared to competitive grant programs (20%), showcasing their ability to deliver operational improvements efficiently.

Additionally, other positive outcomes such as *access to new markets* (23% in dollar-matched programs vs. 25% in competitive grants) and *job creation* (23% vs. 26%) showed only small differences between the two funding approaches.

Despite smaller funding levels, facilitated dollar-matched programs still delivered meaningful financial benefits, including *cost savings* (21%) and *raised capital* (21%), demonstrating their ability to support businesses effectively. Interestingly, the facilitated dollar-matched program percentages for *environmental benefits* (16%) and *social benefits* (16%) were close to competitive programs, which stood at 18 per cent and 19 per cent, respectively. Notably, *negative financial* outcomes were reported less frequently in dollar-matched programs (13%) compared to competitive grants (16%). Overall, the data highlight that facilitated dollar-matched programs can yield impactful outcomes, even with relatively lower investment levels, particularly in areas such as credibility, competitiveness, and grant access.

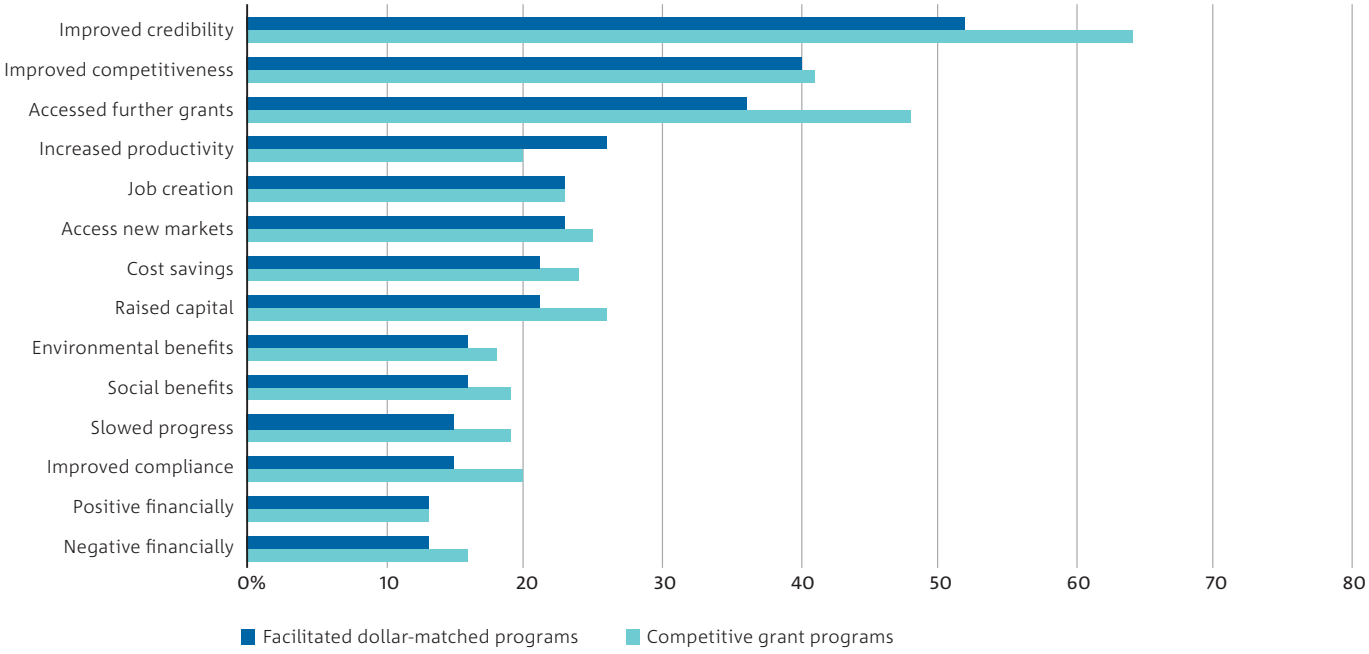

Figure 15: Organisational performance outcomes in selected programs

Organisational performance outcomes in individual programs

Figure 16 examines organisational performance outcomes across individual programs, offering insights into their strengths and challenges.

Improved credibility is consistently high across all programs with a very high score from IGC grants (92%), and was also the highest for *improved competitiveness* (83%), *raising capital* (58%) and *job creation* (67%), while iPhD and CSIRO Kick-Start also deliver strong *raising capital* results (43% and 44%, respectively). Student programs were also strong in *accessed further grants* (iPhD 71%, APR Intern 80%) which demonstrates their use as light-touch, low-commitment engagements that can build trust and lead to long-term collaborations.

Other university programs report lower performance across multiple metrics (albeit from a small number of responses – 7 [Figure 4]), including *improved competitiveness* (29%) and *job creation* (14%) – perhaps highlighting the focus of these programs on university-push rather than industry-pull. Furthermore, *slowed progress* was a notable issue for participants (43%).

Overall, the organisational performance outcomes highlight the multifaceted benefits of collaboration programs. Facilitated dollar-matched programs deliver immediate and practical improvements, such as cost savings and capital-raising, while competitive grants foster strategic growth in competitiveness, job creation, and market expansion.

	PROGRAM										
	INNOVATION CONNECTIONS	SIEF STEM+ BUSINESS	CSIRO KICK-START	CRCS	IPHD	APR INTERN	ARC GRANTS	OTHER SECTOR GRANTS	OTHER UNIVERSITY PROGRAMS	IGC GRANTS	STATE/ TERRITORY GRANTS
	PROGRAM TYPE										
OUTCOME	FACILITATED	FACILITATED	FACILITATED	COMPETITIVE	STUDENT	STUDENT	COMPETITIVE	UNKNOWN	UNKNOWN	COMPETITIVE	UNKNOWN
Improved credibility	52%	57%	59%	65%	64%	60%	56%	67%	57%	**92%**	67%
Improved competitiveness	41%	43%	44%	46%	43%	40%	37%	44%	**29%**	**83%**	40%
Accessed further grants	33%	57%	54%	57%	**71%**	**80%**	63%	59%	43%	58%	51%
Increased productivity	28%	14%	24%	27%	29%	40%	22%	22%	14%	58%	26%
Job creation	25%	29%	27%	27%	36%	30%	30%	15%	**14%**	**67%**	26%
Access new markets	25%	29%	27%	27%	21%	20%	19%	22%	14%	42%	33%
Cost savings	22%	29%	20%	30%	43%	40%	22%	15%	43%	33%	28%
Raised capital	17%	14%	**44%**	38%	**43%**	40%	19%	15%	14%	**58%**	33%
Environmental benefits	19%	14%	17%	22%	14%	10%	15%	11%	0%	33%	19%
Social benefits	17%	0%	17%	16%	14%	0%	7%	15%	29%	50%	26%
Slowed progress	15%	29%	22%	19%	21%	20%	19%	30%	**43%**	33%	30%
Improved compliance	12%	14%	24%	35%	29%	30%	30%	22%	0%	25%	14%
Positive financially	16%	29%	10%	14%	0%	20%	7%	15%	0%	25%	14%
Negative financially	12%	29%	22%	11%	14%	10%	11%	22%	43%	25%	23%

Figure 16: Organisational performance outcomes in individual programs

Additional collaborative outcomes in selected program types

Figure 17 provides insights into the broader impact of collaboration programs. The comparison reveals distinct patterns in how each model contributes to long-term benefits beyond immediate project outcomes.

Competitive grant programs outperform facilitated dollar-matched programs across all outcomes, particularly in *new relationships with different URIs* (49% vs. 33%) and new funding applications (59% vs. 48%).

However, facilitated dollar-matched programs achieve comparative outcomes in certain topics, such as *collaborations in new areas* (32% vs. 34%) and *new collaborative opportunities* (54% vs. 60%), indicating that despite differences in investment, they can deliver significant results to participants. Notably, both program types report strong outcomes in *continuing relationships with URIs* (71% for facilitated dollar-matched and 82% for competitive grant programs), underscoring their shared ability to foster ongoing collaborations.

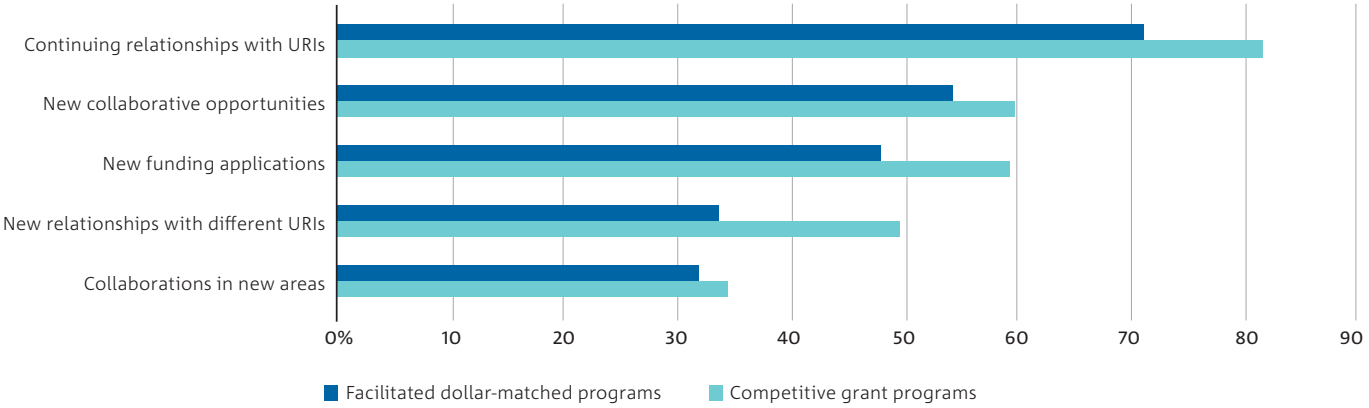

Figure 17: Additional collaborative outcomes by selected programs

Additional collaborative outcomes in individual programs

Figure 18 provides a closer look at individual programs, showcasing how specific initiatives deliver on additional outcomes.

Almost all programs showed very high rates of *continuing relationships with URIs*, showcasing that programs lead to long-term collaborations that benefit both the businesses and the URIs. IGC grants were particularly strong in *collaboration in new areas* (50%), while iPhD and CRC grants opened up new relationships with different URIs (64% and 62% respectively). By contrast, University-led programs had much lower scores in *new collaborative opportunities* (14%) and *collaborations in new areas* (14%) as well as scoring relatively low in *continuing relationships* (57%). These results suggest a need for greater alignment between academic and industry priorities to maximise mutual benefits.

While most outcomes (innovation and business capability, organisational performance, and additional) from competitive grant programs were slightly higher than those from facilitated dollar-matched programs, the close-comparison highlights the exceptional value delivered by facilitated programs, despite typically involving smaller investments than in competitive grants. Key achievements across these programs include the development of new or improved products, strengthened organisational competitiveness, and the establishment of long-term collaborative networks.

	PROGRAM										
	INNOVATION CONNECTIONS	SIEF STEM+ BUSINESS	CSIRO KICK-START	CRCS	IPHD	APR INTERN	ARC GRANTS	OTHER SECTOR GRANTS	OTHER UNIVERSITY PROGRAMS	IGC GRANTS	STATE/ TERRITORY GRANTS
	PROGRAM TYPE										
OUTCOME	FACILITATED	FACILITATED	FACILITATED	COMPETITIVE	STUDENT	STUDENT	COMPETITIVE	UNKNOWN	UNKNOWN	COMPETITIVE	UNKNOWN
Continuing relationships with URIs	78%	57%	78%	89%	86%	90%	89%	93%	**57%**	83%	79%
New collaborative opportunities	52%	43%	56%	70%	79%	50%	74%	59%	**14%**	92%	49%
New funding applications	42%	43%	59%	65%	64%	70%	59%	67%	29%	75%	60%
New relationships with different URIs	35%	29%	37%	**62%**	**64%**	40%	52%	48%	43%	50%	42%
Collaborations in new areas	26%	43%	27%	32%	36%	20%	33%	37%	**14%**	**50%**	40%

Figure 18: Additional collaboration outcomes by individual programs

Comparing outcomes in regional and metropolitan areas

This section offers a comparative analysis of the outcomes achieved by businesses in regional and metropolitan areas. The focus is exclusively on data from respondents in facilitated dollar-matched grant programs, which our data have shown to be effective in creating tangible outcomes. Regional businesses, in particular, benefit from the help of facilitators offered in these programs due to geographical constraints in engaging directly with URIs.

Innovation and business capability outcomes

Figure 19 presents a comparative analysis of innovation outcomes for facilitated dollar-matched grant recipients in regional and metro areas.

One of the most significant results for regional businesses is in the development of tangible outcomes. For example, *new/improved products* is a standout category, with 88 per cent of regional businesses reporting this outcome, compared to 69 per cent in metro areas. This trend is similar for *developed prototype* (52% regional versus 45% metro).

These results suggest that regional areas have a stronger focus or capability in progressing new or improved offerings for their customers. Similarly, *independent validation* is significantly higher for regional recipients, (40% versus 28%), indicating that regional businesses prioritise rigorous testing and validation of their innovations.

It is also observed that regional businesses are more likely to take risks on projects that may not work, with a higher percentage of project abandonment (52% versus 33%). However, regional stakeholders face more difficulties related to resource constraints with higher instances of projects being abandoned due to lack of resources (44% regional vs. 21% metro).

Overall, regional businesses generally demonstrate stronger performance in developing and improving innovations through URI collaboration than metro firms, with a consistent emphasis on creating practical, market-ready solutions. This may reflect underlying differences in resources and project goals, that impact the innovation landscape between the two areas.

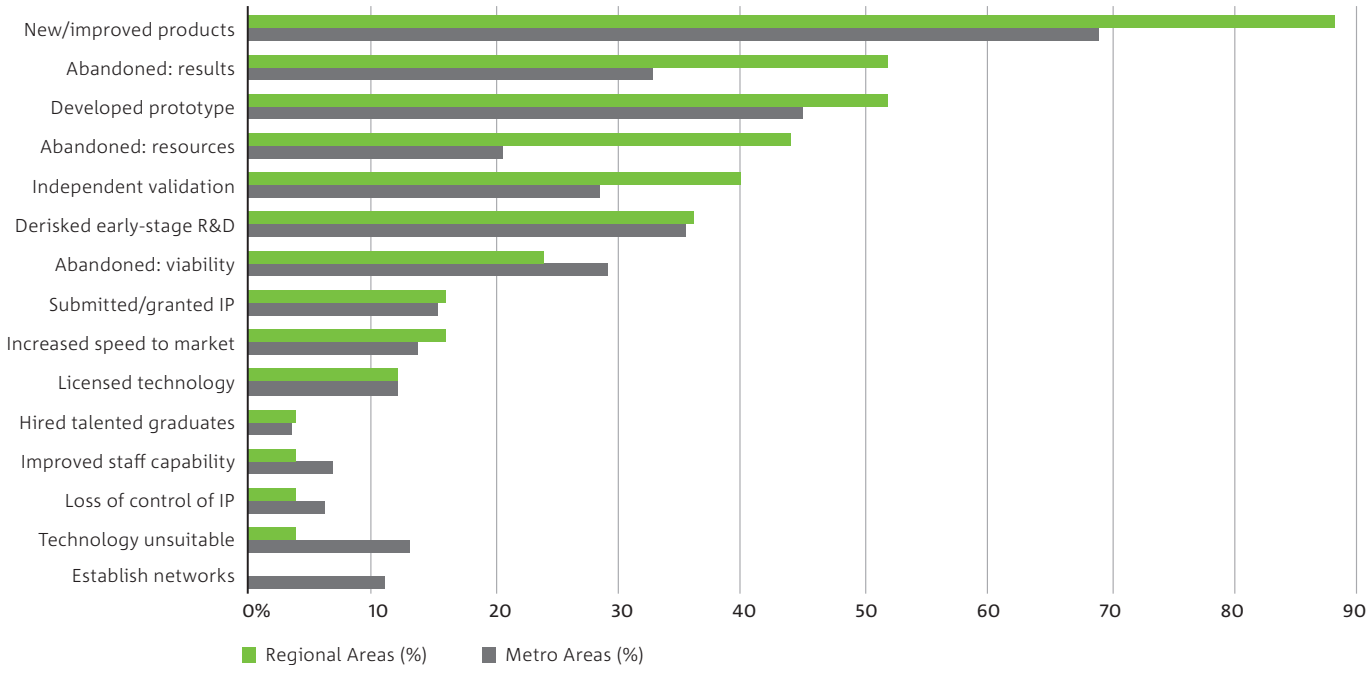

Figure 19: Innovation outcomes for facilitated grant recipients by regional vs metro areas

Organisational performance outcomes

Figure 20 summarises the organisational outcomes for business recipients in dollar-matched grant programs, comparing regional and metro firms.

Notably, regional businesses reported higher positive outcomes across almost all categories compared to their metro counterparts, and they are less likely to experience negative outcomes. *Improved credibility* emerged as the top outcome for both areas (56% regional, 52% metro) with *improved competitiveness* following closely; regional businesses leading 52 per cent to 38 per cent. This suggests that regional businesses are seeing more substantial gains in their market positioning and reputation from URI collaboration than metro firms.

There are also some very large discrepancies, including 44 per cent of regional businesses reported *accessed new markets* compared to only 19 per cent in metro areas, and regional businesses also reported much higher outcomes in *job creation* (36% vs. 21%). When it comes to financial outcomes, regional businesses experienced significantly more *positive financial results* (24%) than metro businesses (11%) and reported greater *cost savings* (24% vs. 20%). However, metro businesses *raised capital* at 22 per cent, compared to 16 per cent in regional areas – likely due to the geographical access to funding firms and their networks.

Overall, the data highlight a compelling trend: regional businesses generally experience stronger organisational benefits from URI collaboration across financial, social, and operational metrics compared to their metro counterparts. This suggests that regional businesses may be better positioned to leverage opportunities for growth, funding, and impact, when they have access to facilitated dollar-matched grant programs.

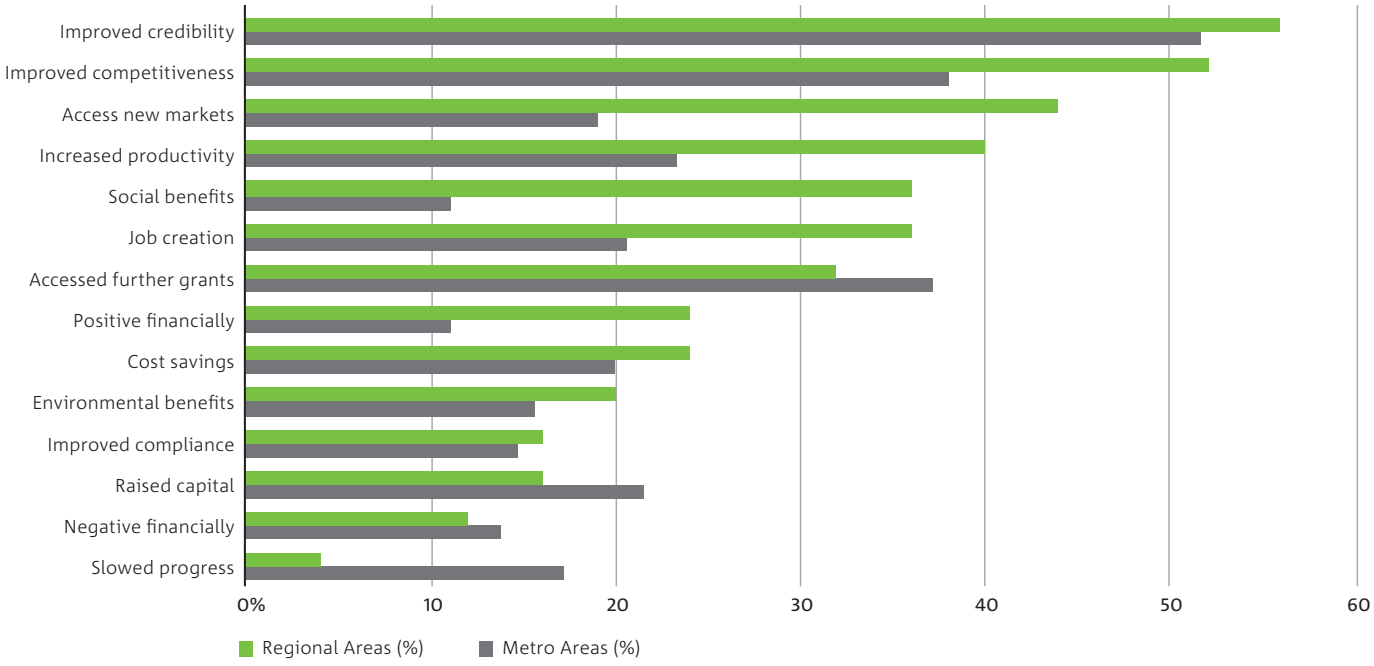

Figure 20: Organisational outcomes for facilitated grant recipients by regional vs metro areas

Additional collaborative outcomes

Figure 21 highlights the additional collaborative outcomes achieved by facilitated grant recipients.

Continuing relationships with URIs stand out as the most significant outcome, with regional and metro businesses achieving 76 per cent each. This suggests that geographical constraints are lost once a relationship between the regional business and the URI has been established. *New collaborative opportunities* are also notable, with regional businesses (60%) slightly outperforming metro businesses (51%), indicating their ability to leverage these programs to build new connections and expand their networks.

Regional areas also demonstrate positive outcomes in *new relationships with different URIs* (40% vs 33%), further highlighting that regional businesses overcome geographic limitations and access broader innovation ecosystems through facilitated dollar-matched programs.

Overall, the findings highlight that regional businesses often outperform their metro counterparts in key areas such as product development, collaboration with research institutions, and the establishment of lasting partnerships. Across all categories, regional businesses demonstrate a strong ability to leverage facilitated grants to build networks, develop new products, and enhance their competitive position.

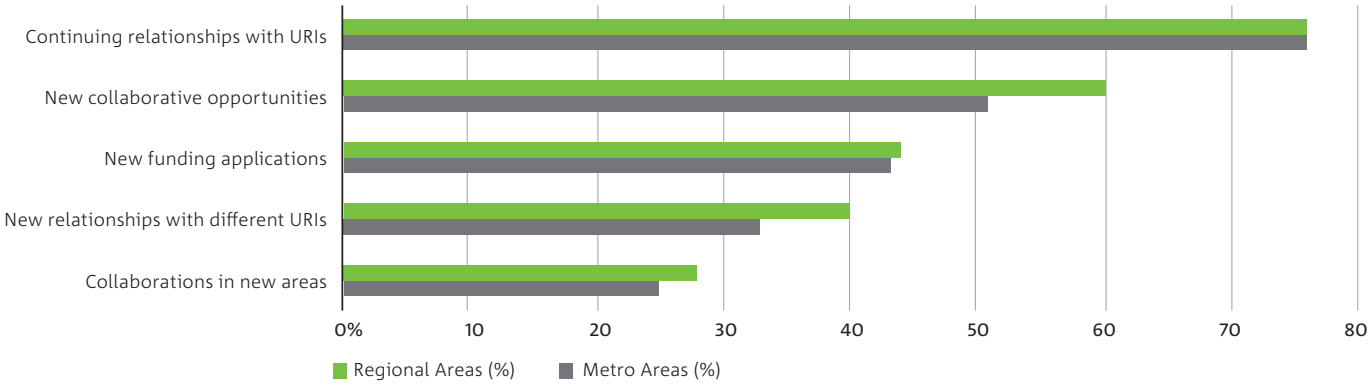

Figure 21: Additional collaborative outcomes for facilitated grant recipients by regional vs metro areas

6 Summary of key findings

Overall, the data shows that collaboration with URIs offers substantial benefits to SMEs, and targeted support can enhance the efficacy and impact of R&D activities. Key findings include:

1. **Collaborations with URIs accelerate SMEs' ability to innovate and bring ideas to market**
   SME-URI collaborations yield multiple tangible outcomes for SMEs, with a large portion of respondents reporting new/improved products, developed prototypes and derisked early-stage R&D. This highlights the role of partnerships in bringing ideas closer to market, enabling businesses to test and refine their innovations, and improving the likelihood of future market growth.

2. **SME-URI collaboration supports businesses as they grow, and their innovation efforts become more diversified and complex**
   SME collaboration with URIs grows in complexity as the size and needs of SMEs grow. Both micro and small businesses achieved success in developing new/improved products, indicating their focus on the early stages of innovation, where product development and research are critical in their commercialisation pathway. Smaller firms also significantly benefited from the reputational boost provided by URI collaborations that enhance trust and visibility in the market. By contrast, larger firms utilised partnerships with URIs to access more external R&D funding and to improve their competitiveness.

3. **Collaboration with URIs helps SMEs to identify and address challenges, needs and opportunities specific to their industry**
   SMEs across different sectors were able to achieve distinct outcomes from collaboration with URIs, aligned to their unique industry challenges and opportunities. For example, medtech/biotech businesses reported derisking early-stage R&D, aligned to the high regulatory and capital investment requirements in these industries. Similarly, manufacturing and digital technology businesses reported the highest rates of new or improved products, while energy and emissions reduction businesses reported high rates of independent validation, key to strengthening the customer-driven approaches required in these sectors.

4. **Entry-level, facilitated dollar-matched programs lead to tangible outputs, while competitive grants support more sophisticated collaboration**
   Different program types achieve different outcomes, aligned to the varying sizes and maturity levels of SMEs. Facilitated dollar-matched programs, targeted at entry-level collaboration, exceeded competitive grants in tangible outcomes such as the development of new products/services and building prototypes. By contrast, competitive grant programs enabled larger firms with established R&D relationships to engage in more sophisticated activities. For example, outscoring facilitated dollar-matched programs in speed to market, licensing technology, and access to further grants.

5. **Facilitated dollar-matched programs achieve similar impact to higher-value competitive grant programs**
   Despite smaller financial investments, facilitated dollar-matched programs yielded similar impact magnitudes to those gained via high-value competitive grant programs. For example, the number of businesses reporting improved credibility, new collaborative opportunities, access to further grants and improved competitiveness were comparable across both program types.

6. **Regional SMEs gain more impactful outcomes than metro SMEs**
   Regional businesses benefit more significantly from collaboration with URIs than their metro counterparts. For example, regional businesses reported much higher percentages of developing new or improved products, independent validation and improved credibility than for collaborating metro SMEs. However, regional firms experienced higher abandonment rates due to a lack of resources than metro firms, highlighting the difficulties regional SMEs face in capitalising on these opportunities.

7 Recommendations

Five recommendations emerge from these key findings, relevant to both program and policy design:

1. **Continue to foster collaboration between SMEs and URIs:** Given the positive outcomes associated with collaborations between SMEs and URIs, policies should focus on increasing the volume of participants. Efforts could include improving accessibility and engagement by reducing administrative barriers, facilitating more direct connections between SMEs and URIs, and promoting awareness of collaboration opportunities through targeted outreach and industry-led initiatives.

2. **Align programs to support SMEs as they grow and mature:** To maximise impact, program types should be targeted to business needs at different stages of growth. Facilitated programs, such as CSIRO Kick-Start, are well-suited for small firms, helping them derisk early-stage innovation and develop new products. These entry-level programs build trust and establish research partnerships, making them a strong feeder into more sophisticated, higher-value programs like CRCs and other competitive grants. By aligning programs to flow seamlessly into one another and addressing gaps in program availability, businesses can maintain continuous collaboration, access further funding, and maximise innovation outcomes.

3. **Tailor programs to industry-specific needs and opportunities**: To maximise the impact of SME-URI collaborations, programs should be designed with industry-specific challenges and priorities in mind. Businesses in highly regulated sectors benefit most from early-stage R&D support, while those focused on product development or market validation require different forms of engagement. Aligning program structures with sector needs ensures that SMEs can effectively leverage URI partnerships to drive growth and impact.

4. **Broaden the availability of facilitated programs:** As SMEs face unique challenges, such as limited capacity to allocate staff to collaborations, facilitation can maximise collaboration outcomes. Facilitated-programs could be expanded to include targeted training and mentorship opportunities, application processes could be streamlined across programs to reduce the resource burden on SMEs and facilitators, and eligibility criteria broadened to maximise the number of SMEs that can benefit.

5. **Invest in tailored programs for regional businesses:** The data showed that regional businesses often achieve outstanding outcomes from URI collaborations, despite a lack of resources, which can affect their ability to sustain projects. Therefore, it is essential that regional obstacles are considered when designing and implementing new programs. By focusing on these specific needs – such as improving access to funding, infrastructure, and support networks – regional SMEs can be better supported and the outcomes identified will be magnified.

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Appendix

This appendix provides the complete definitions of outcomes from SME-URI collaborations as used in the survey.

Innovation and business capability outcomes

ABBREVIATION	DEFINITION
Abandoned: resources	Project abandoned due to lack of time/resources in business or the university
Abandoned: results	Project abandoned due to lack of useful/usable results
Abandoned: viability	Product/service abandoned due to project viability
Derisked early-stage R&D	Derisked early-stage R&D project
Developed prototype	Developed a prototype or minimum viable product (MVP)
Establish networks	Establishment of networks and relationships with the research community
Hired talented graduates	Hired talented graduates
Improved staff capability	Improved innovative ability and capacity of staff
Increased speed to market	Increased speed to market
Independent validation	Independent validation/testing of a product or service
Licensed technology	Licensed technology
Loss of control of IP	Loss of control of IP
New/improved products	New or improved products/services and processes
New/improved products	New or improved products/services and processes
Submitted/granted IP	Submitted/granted patents or other forms of intellectual property
Technology unsuitable	Technology developed was unsuitable

Organisational performance outcomes

ABBREVIATION	DEFINITION
Improved credibility	Improved market credibility/business reputation
Improved competitiveness	Improved competitiveness
Accessed further grants	Accessed further grants
Raised capital	Raised capital (e.g., venture or angel capital)
Cost savings	Cost savings
Improved compliance	Improved project evaluation (e.g., government quality and regulatory approval)
Access new markets	Gained access to new markets/exports
Increased productivity	Increased productivity
Job creation	Job creation (e.g., number of jobs created or new employees hired)
Negative financially	Experienced negative financial impact
Slowed progress	Slowed progress, impacting time to market
Positive financially	Improved revenue/financial performance
Social benefits	Social benefits (e.g., more community engagement)
Environmental benefits	Environmental benefits (e.g., reduced energy consumption)

Additional collaborative outcomes

ABBREVIATION	DEFINITION
Collaborations in new areas	Collaborations in other areas not known before
Continuing relationships with URIs	Continuing relationships/engagements with Research Organisations
New collaborative opportunities	New collaborative opportunities/projects
New funding applications	Applications to new funding programs/grants
New relationships with different URIs	New relationships/ engagements with different Research Organisations

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