



Department for
Business, Energy
& Industrial Strategy

UNPICKING THE PRODUCTIVITY PUZZLE

Business Basics Programme – final report

Annex: Project summaries

February 2024



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Contents

Key takeaways by project	5
Full-scale trials	5
Proofs of concept	11
Business Boost	16
HeadsUp!	20
A Scientific Approach to SME Productivity	24
AI for SMEs	28
People Skills+	32
Engaging Rural Micros	36
Leading to Grow	41
Adopting Operational Coaching as a management style to drive SME productivity	45
Cyber Well	49
Making Accountants Digital Enablers (MADE)	53
Developing a management system to boost productivity via online and peer-to-peer learning among SMEs	57
Evolution Invoice	60
Techknowledgey Transfer	65
Manufacturing Connect Lancashire	70
Evolve Digital	76
Be the Business Digital	81
Adoption of Digital Automation Practices and Technology (ADAPT)	85
Local Productivity Club	91
Digitally-Enabled Business Clinic	94
Cloud Accounting	97
Dairy Forward	99
Productivity in Professional Services	102
Data-led approach to improving productivity via tailored messaging	105
Technology foresight for growth and productivity	109
Ideact: Design thinking training for SMEs	112
Digital Benchmark Index	115

Unpicking the productivity puzzle – Annex: Project summaries

Investing in SME productivity growth by developing their performance management capability	118
Lifestyle behaviour change interventions for employee health and SME productivity	121
Tech Check	124
Digital Breakthrough South East	128

Key takeaways by project

Full-scale trials

Project	Lead organisation	Reason for selection	Takeaways for policy	Takeaways for research or evaluation design
Business Boost	Cavendish Enterprise	<p>Are there benefits from raising awareness and knowledge of key business tools?</p> <p>The project tested the use of peer support to improve the outcomes and cost effectiveness of training.</p>	<p>The programme had a positive impact on use of key business tools and on vision and strategy.</p> <p>There was evidence of ‘support fatigue’ among participants from a previous programme.</p>	<p>It is important to determine in advance how an evaluation will contribute to learning: in this case, it is not known which elements of the programme most contributed to the positive outcomes.</p>
HeadsUp!	Enterprise Nation	<p>Is it more effective to SME leaders select their own training needs and focus on specific areas, or to raise their awareness of how they can better use technology across a broader range of topics?</p> <p>The project reversed the usual perception that online training is less intensive and tailored than in-person support. One-to-one online sessions were compared to in-person group workshops.</p>	<p>Light-touch direction and facilitation of support led to very low rates of participation, even though feedback on the sessions themselves was positive.</p> <p>There may be potential benefits from introducing commitments to participation. For example, could charging a small attendance fee up front have increased commitment among those who signed up?</p>	<p>Piloting can be invaluable in ensuring that implementation issues are identified and resolved before testing at scale.</p> <p>Data generated from participants’ interactions with an online platform could have partially compensated for low survey response rates.</p>

Unpicking the productivity puzzle – Annex: Project summaries

Project	Lead organisation	Reason for selection	Takeaways for policy	Takeaways for research or evaluation design
A scientific approach to SME productivity	City, University of London	<p>Is it possible to improve business productivity and performance by training businesses in how to structure decisions and make more effective use of data?</p> <p>The project compared two training programmes with relatively small differences in content.</p> <p>Scientific entrepreneurship training had already shown promising results in a pilot study in Italy.</p>	<p>There may be significant benefits from improving how decisions are made, rather than raising awareness and providing information on specific technologies, practices or topics.</p> <p>There is value in experimenting with different structures and content to business training programmes.</p>	<p>There is value in replicating experimental research in new contexts and progressive scaling.</p> <p>It is possible to generate a rich longitudinal dataset from surveys of SMEs, although this requires significant investment.</p>
AI for SMEs	Greater London Authority	<p>The hospitality and retail sectors include many SMEs with low productivity.</p> <p>This project provided a way to test different approaches to encouraging the use of relatively basic artificial intelligence (AI) tools. This could be valuable, if AI becomes the next general purpose technology.</p>	<p>Pushing emerging technologies is challenging if SMEs are too far from adoption.</p> <p>Technologies need to address SMEs' priorities and be ready for off-the-shelf use. Complementary assets may be required for benefits to be realised.</p>	<p>Project participants who have shown little interest in an intervention are also very reluctant to complete subsequent surveys.</p> <p>Piloting can be beneficial in providing more general assessments of the rationale for intervention and likely interest.</p>
People Skills+	Chartered Institute of Personnel and Development	<p>This was an opportunity to validate findings from small-scale pilots about benefits of offering support to improve HR and people management practices.</p>	<p>The impact of interventions may not always transfer between settings. There were very low response rates to mass-market recruitment messages, whether sent by email or as physical letters or flyers.</p>	<p>Very low response rates present severe barriers to implementing messaging trials. This is crucial to be aware of in planning randomised encouragement design experiments, as had been considered for this project before the</p>

Unpicking the productivity puzzle – Annex: Project summaries

Project	Lead organisation	Reason for selection	Takeaways for policy	Takeaways for research or evaluation design
				evaluators opted for a design with two stages of randomisation.
Engaging Rural Micros	Devon County Council	The project compared two very different approaches to improving SME productivity – advice on technology or person-centred support.	Face-to-face contact from trading standards officers was effective in recruiting rural microbusinesses. Many who were allocated to the technology intervention saw it as not relevant or appropriate for them, rather than being inspirational.	Recruiting for an RCT involves giving SMEs enough information to judge whether to participate, without informing them in advance of their treatment status. This was a particular challenge for this project given the very different focus of the two interventions.
Leading to Grow	Chartered Association of Business Schools	The project tested the benefits of providing personalised support after an initial workshop had raised awareness and provided information. This was an ambitious programme, coordinating content and delivery across 15 business schools. There was a wider policy interest in encouraging SMEs to engage with business schools and vice versa.	Rapidly altering delivery plans during the initial period of the pandemic was of benefit to the SMEs supported. The findings point to a wide range of experience, responses and needs across SMEs that had previously signed up for support. Lessons were learned about coordinating implementation, monitoring and evaluation across a large number of delivery partners.	Ensuring consistency of process and consistency in data collection between multiple delivery partners can be a challenge.
Adopting Operational Coaching as a	Notion Limited	The project tested the transferability of a training programme originally designed for managers in larger businesses.	The project found a positive impact on coaching behaviours from a purely online, self-guided training programme.	Charging for participation in a programme can create complications in interpretation of the results: some in the control group were not willing to pay up

Unpicking the productivity puzzle – Annex: Project summaries

Project	Lead organisation	Reason for selection	Takeaways for policy	Takeaways for research or evaluation design
management style		This was a highly scalable programme, delivered purely online.		front to be provided with access at a later date.
Cyber Well	Bournemouth, Christchurch and Poole Council	The project investigated the use of gamification to encourage progression through an online training course. This offers a potential way to address concerns that self-guided online learning can be less engaging than facilitated learning.	There was a large drop-off in participation in the early stages of the programme. This could potentially have been averted with piloting and early follow-up, or by providing access to SMEs on a rolling basis rather than in batches.	Delaying randomisation until the full sample has been recruited has statistical benefits in principle, but not if those who signed up early are deterred by the wait and do not go on to participate. Asking participants to complete too many surveys between stages of a programme can act as a deterrent to progressing further.
Making Accountants Digital Enablers (MADE)	Northumbria University	Testing the use of trusted intermediaries (accountants) to reach and provide support to SMEs.	Working with intermediaries may be valuable, but involves challenges: this is not an easy fix to the difficulties of reaching SMEs. It is not clear whether accountants can be convinced to see providing advice on technology adoption as part of their role.	Impact evaluation relies on collecting data about the ultimate beneficiaries (the SMEs). Assessments from the accountants (the intermediaries) were not sufficient.
Developing a management system to boost productivity	University of Cambridge	The project tested the potential to establish an asynchronous peer-support network, which would not rely on participants and mentors connecting at the same time and place.	Small details of implementation can have large effects on participants' experience with a programme, and hence on whether they continue engaging with it. There was very limited impact from mass market recruitment activity.	Piloting can be invaluable in ensuring that implementation issues are resolved before testing at scale.

Unpicking the productivity puzzle – Annex: Project summaries

Project	Lead organisation	Reason for selection	Takeaways for policy	Takeaways for research or evaluation design
Evolution Invoice	Evolution Artificial Intelligence Limited	Will adoption of a digital technology be increased by providing additional encouragement and information, and will SMEs benefit as a result?	<p>A technology solution that is of value in large businesses may not be well suited to the needs of SMEs.</p> <p>Friction or delays in onboarding may be a major deterrent to potential users. Many SMEs registered their interest in a free trial, but most did not return once the service was ready to launch. This was probably largely due to rapid developments in the market, since existing accounting software vendors launched similar products around the same time.</p>	<p>Conducting a trial in a competitive and rapidly evolving market is challenging. The competing services that became available during the project's lifetime drastically reduced the demand for Evolution AI's service, which limited the potential for learning from the trial.</p>
Techknow-ledgey Transfer	Petroc	Is there a potential role for further education colleges in providing business support? Can students provide SMEs with additional capacity to adopt new technologies?	<p>There were positive indications about the potential for student placements to bring value to SMEs, as well as about the potential to deliver business support in collaboration with further education colleges.</p>	<p>Low compliance rates (in this case, the decisions of many SMEs to decline the student placement) severely affect the potential to detect impacts from an RCT.</p>
Manufacturing Connect Lancashire	Edge Hill University	Can introducing peer-to-peer interaction in a programme change how manufacturing businesses make use of the support and whether they go on to adopt new technologies?	<p>Several participants cited the programme as a key driver of their decisions to adopt a new technology.</p> <p>Participants saw value in the facilitated workshops (particularly in the opportunities for peer exchange), but</p>	<p>As in the case of the Engaging Rural Micros project (above), it is important to plan carefully how to describe the programme to potential participants without being able to specify whether</p>

Unpicking the productivity puzzle – Annex: Project summaries

Project	Lead organisation	Reason for selection	Takeaways for policy	Takeaways for research or evaluation design
			<p>even the non-facilitated route was positively received by participants.</p> <p>An important factor in attracting SMEs to the programme was being able to identify how the technologies could address immediate business needs, rather than only discussing longer-term productivity benefits.</p>	<p>they will be allocated to the treatment or control group.</p>
Evolve Digital	Business West	<p>The project was testing the benefits from using an enhanced degree of peer support.</p>	<p>An interactive training programme developed for in-person delivery (which would have included a residential component) was successfully transferred to being implemented online, and had positive impacts on confidence and intention to adopt digital technologies.</p> <p>The results support the case for offering holistic support to SMEs to encourage technological innovation.</p>	<p>Tracking participants over a longer period will be needed to know whether changes in confidence and intentions translate into actual technology adoption.</p>
Be the Business Digital	Be the Business	<p>The project investigated the use of trusted intermediaries (banks) to reach SMEs and directly them towards a digital adoption diagnostic tool.</p>	<p>The project had little success in encouraging SMEs to engage with online self-guided materials, even when directly recommended to do so by the relationship manager at their bank.</p> <p>Bank staff were reluctant to take on the role of advising SMEs on digital</p>	<p>Testing a resource that is intended to be available for on-demand use is difficult in a short-term trial, given the need to recruit an adequate sample of potential users.</p> <p>Setting thresholds for how the evaluation plan would be modified depending on the</p>

Unpicking the productivity puzzle – Annex: Project summaries

Project	Lead organisation	Reason for selection	Takeaways for policy	Takeaways for research or evaluation design
			technology, because of competing pressures or a lack of expertise. SMEs did not expect bank staff to fulfil this role.	number of participants recruited was valuable, preventing resources from being wasted on proceeding with an underpowered RCT.
Adoption of Digitally Automated Accounting and Payment Technologies (ADAPT)	Cheshire East Council	What are the benefits from exposing SMEs to larger firms operating at the technological frontier? Does it inspire them to improve their own use of technology, or does it underline the gap and make the benefits seem more difficult to realise?	The promise demonstrated by the in-person exposure visits carried out under the proof of concept (see below) did not transfer well to an online format: takeup rates were low and interaction from participants was limited.	Bolstering the intervention available to the control group (in this case, an online information portal) may help motivate SMEs to participate in the trial, but can also reduce the power to detect an effect of the treatment.

Proofs of concept

Project	Lead organisation	Reason for selection	Takeaways for policy	Takeaways for research or evaluation design (where applicable)
Local Productivity Club	WLP (Anglia Business Growth Consultants Limited)	The project tested the feasibility of creating a local network of SMEs self-identified as low productivity. Multiple employees from each enterprise were engaged in the support package.	It is not clear that the peer-to-peer interaction was a valuable aspect of the business club, or that this produced any social commitment to change.	

Unpicking the productivity puzzle – Annex: Project summaries

Project	Lead organisation	Reason for selection	Takeaways for policy	Takeaways for research or evaluation design (where applicable)
Engaging Rural Micros	Devon County Council	The project carried out exploratory research on challenges faced by rural microbusinesses, to inform the design of an intervention (subsequently tested as a full-scale trial, listed above).	Microbusiness owners often struggle with balancing running their business with other responsibilities and time off. They are not necessarily motivated by growth, and unlikely to proactively seek out support.	
Digitally Enabled Business Clinic	Northumbria University	The project enabled an existing initiative to be delivered online and hence scaled more easily. There was policy interest in testing whether students can provide additional capacity to SMEs.	Making useful and compelling recommendations requires advisers to have a strong understanding of the business.	The findings could be used to inform a larger trial to validate apparent benefits for participants.
Adoption of Digital Automation Practices and Technology (ADAPT)	Skills and Growth Company Limited (Cheshire East Council)	What are the benefits from exposing SMEs to larger firms operating at the technological frontier? Does it inspire them to improve their own use of technology, or does it underline the gap and make the benefits seem more difficult to realise?	Exposure visits appeared to help SMEs through the initial steps towards adoption (knowledge/awareness and persuasion of the potential of technology). However, participants then identified barriers to further progression, such as cost and lack of skills.	Pre/post surveys can be persuasive about changes in knowledge or awareness of technologies.
Cloud Accounting	Locality	The project was testing the benefits of delivering targeted support for social enterprises and to explore their needs and potential to benefit from support.	The barriers to adoption can be different for SMEs that are not inherently profit maximisers.	There are unresolved questions around how to consider how to define the productivity of social enterprises, for which gross value added is not a suitable metric.

Unpicking the productivity puzzle – Annex: Project summaries

Project	Lead organisation	Reason for selection	Takeaways for policy	Takeaways for research or evaluation design (where applicable)
			The capacity of social enterprises to adopt new technologies can be constrained by staff capacity.	
Dairy Forward	Food Forward Limited	This project investigated the potential to support farms to improve both their productivity and environmental impact. The comparison of different levels of intervention from basic information to more detailed diagnostic and peer comparisons was also of policy interest.	The benefit from an intervention can take a negative form: SMEs were able to rule out investing in technologies that they found were not appropriate for them.	The project clearly demonstrated the benefits of piloting: the specifics of the intervention were tested and could be adapted.
Productivity in Professional Services	The Career Innovation Company	The project addressed employee motivation as a route to improving productivity. The project took a programme developed for larger firms and tested its viability to support SMEs.	Participation dropped off quickly, but feedback from the minority who completed the programmes was positive.	This was another project that demonstrated the benefits of piloting to identify implementation and measurement issues.
Data-led approach to improving productivity via tailored messaging	Leeds City Region Enterprise Partnership	The project combined public and private data sources to identify low-productivity businesses and target them with support.	There is potential to combine data from a range of traditional and novel sources to develop a more detailed assessment of the business population. However, further development and testing is needed for this to fully benefit programme delivery.	The response rates to targeted encouragements to seek support were low.

Unpicking the productivity puzzle – Annex: Project summaries

Project	Lead organisation	Reason for selection	Takeaways for policy	Takeaways for research or evaluation design (where applicable)
Technology foresight for growth and productivity	Kingston University London	The project tested the use of the Delphi method, bringing together experts and SMEs to come to a common view about which technologies are ready for adoption.	Most businesses did not change their perceptions of the suitability of the various technologies discussed during this process, but some at least report increased confidence in their judgments.	Collecting feedback from those that dropped out of the programme may have been valuable.
Ideact	Tenshi Consulting	This was one of the first design thinking programmes aimed specifically at SMEs.	This is a promising intervention, with positive feedback from participants. A key challenge in scaling up will be how to promote participation, given that many SMEs probably have little awareness of design thinking.	Early-stage outcomes from adoption of design thinking will vary widely between businesses: creating a consistent outcome measure will be a challenge.
Digital Benchmark Index	Winning Moves	This project examined whether there are benefits from Growth Hubs using a benchmarking tool when providing support to SMEs.	The project demonstrated that the benchmarking process could be implemented at scale by generalist advisers. This is a promising intervention, which is suitable for experimental testing.	
Developing performance management capability	Leeds Beckett University	The project brought together private sector organisations (a bank, an accountancy firm and consultants) with business schools to support SMEs.	Several participants reported that the process helped them to improve their performance management capability, but only one of the 18 businesses that began the process reached the goal of producing a feasible productivity improvement plan.	

Unpicking the productivity puzzle – Annex: Project summaries

Project	Lead organisation	Reason for selection	Takeaways for policy	Takeaways for research or evaluation design (where applicable)
Lifestyle behaviour change interventions for employee health and SME productivity	Sheffield Hallam University	The project addressing employees' physical health and wellbeing as a contributor to productivity.	The project attracted participants with the potential to benefit – not only those who were already in relatively good health. This was a promising intervention, with participants reporting that they made positive changes after the assessment.	It is important to ensure that those allocated to the control group have a reason to continue participating in a programme and providing data.
Tech Check	Yagro Limited	This project explored different approaches to encouraging technology adoption.	This was another promising intervention, with positive feedback received from participants. The interaction with peers at in-person workshops was highly valued.	There was a high response rate to the follow-up survey, apparently as a result of the project implementers staying in close contact with the participants.
Digital Breakthrough South East	EDGE Digital Manufacturing Limited	This project explored the use of a diagnostic tool to tailor the content of a technology-focused intervention.	This was a promising intervention, with positive feedback from participants. There were mixed views from SMEs about peer interaction: some had concerns about discussing their business with competitors. A hybrid approach may work best in the future.	

Business Boost

Research question	Does a programme of workshops (including peer-to-peer exchange) and one-to-one mentoring enable young micro and small businesses with growth ambitions to put in place practices and strategies that are likely to lead to increased productivity?
Project lead	Cavendish Enterprise
Evaluators	Enterprise Research Centre
Grant amount	£389,000
Number of SMEs participating:	
Target	300
Recruited	297
Location	East of England, North East, South East, South West, Greater London
Business size	Micro and small businesses with up to 19 employees
Business sector	All sectors
Barriers addressed	Lack of time, lack of management capacity, lack of awareness/knowledge of potential benefits.
Intervention	Facilitated online workshops with peer interaction, with a one-to-one mentoring session.
Evaluation design	RCT, with complementary quasi-experimental study
Outcome areas	Management practices.
Evidence of impact	Strong evidence of impact on adoption of modern management tools; weaker evidence on characteristics of business vision and strategy.
Readiness for scaling	Ready for wider rollout, if there is sufficient demand from suitable SMEs.
Potential for further testing	Potential future tests should focus on which elements of the programme are key to its success – in particular how much value is added by the peer-to-peer element (and whether this can be replicated effectively in an online setting) and the individual mentoring sessions.
Further information	Trial registration , evaluation report , summary of results

Rationale

This project focused on microbusinesses that have been operating for less than 3 years and have the aspiration and potential

to grow. Businesses at this stage of their development tend to be fragile and resource constrained, with founders focusing on serving existing clients, fulfilling orders and generating positive cash flow.

They often struggle to find time to develop a strategy that will allow them to scale and become highly productive SMEs. Existing business support programmes typically do not serve this group well, being more focused on the basics of starting a business without any specific guidance for those with the ambition and potential for growth.

Intervention

The Business Boost programme consisted of a series of 6 in-person workshops, followed by a one-to-one session with a mentor. The group sessions were designed to be highly interactive, with opportunities for exchange between peers. The topics covered included strategy and execution, developing lean processes, funding growth, leadership, and developing new opportunities. The final one-to-one meeting allowed participants to catch up if they had missed any of the sessions, as well as to set a plan for future development.

The programme was designed as a follow-on to Cavendish Enterprise's existing 'Start and Grow' programme, intended to guide businesses that had benefited from the support under that programme in preparing for the next stage of their growth. However, interest from Start and Grow participants was not as high as had been expected, so the Business Boost programme was opened to new participants. In the end, just over a third of the Business Boost participants had also participated in Start and Grow.

Evaluation design

This project was designed as an RCT, with participants being randomly assigned either to participate in the Business Boost programme

or to a control group that did not receive any support.

Participants were surveyed at baseline about their business characteristics, management practices and attitudes to growth, with the same survey being repeated at the end of the project period (6 months after the last cohort completed the programme). The response rate to the final survey differed markedly between the treatment group (71%) and the control group (53%), which creates potential for bias in the RCT findings. The evaluators have taken account of this by calculating 'bounds' for how the estimates may be affected by this bias: they find that the estimates of impact are robust to reasonable assumptions about the potential extent of this bias.

Impacts

In the final survey, the treatment group was found to have adopted the use of productivity-enhancing tools at much higher rates than the control group (see the second panel of Figure 1). The treatment group also generally displayed more of the characteristics of vision and strategies to improve productivity. As shown on the right-hand side of Figure 1, none of the differences are large in themselves, but taken as a whole, there appears to be a significant impact from the intervention (the treatment group had 3.7 of the

Project timeline

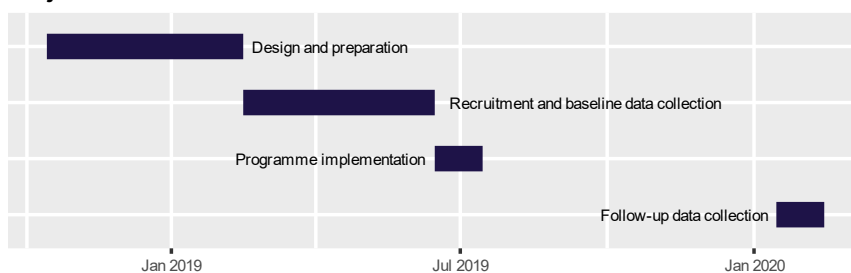
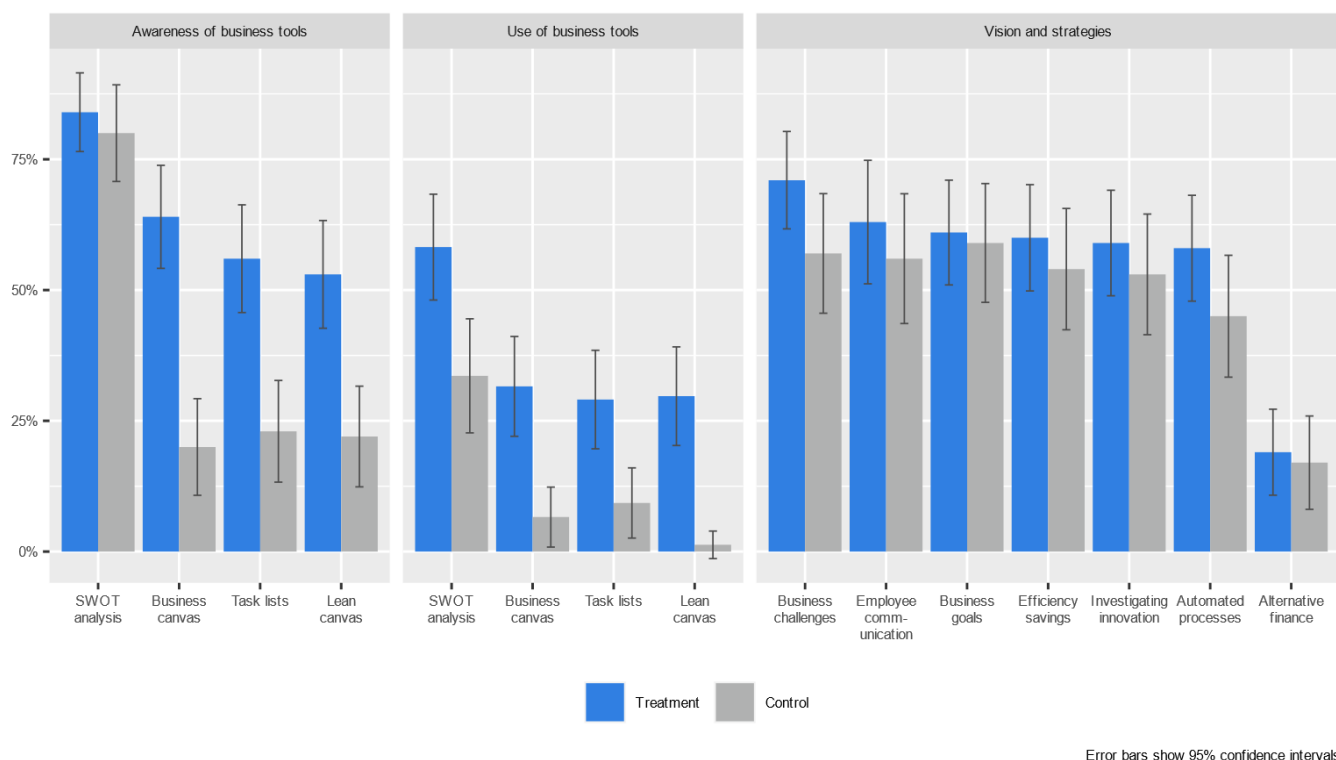


Figure 1: Adoption of business tools and visions and strategies to improve productivity



characteristics, compared to 3.3 in the control group). There were no significant differences between the treatment and control groups in the remaining two areas asked about in the surveys – the use of formal business plans and other managerial tools, or in the participant’s plans for investing in growing the business over the next 6 months.

The positive impact of the project has come about despite varying levels of participation in the Business Boost programme. On average, the treatment group participated in 4 of the 6 workshop sessions. Participation declined after the first session but was reasonably stable for the subsequent sessions, suggesting that the participants were quickly able to determine whether the programme was of interest to them. Just over half of the treatment group also took up the offer of the one-to-one mentoring session at the end of the programme.

Participants also generally provided positive feedback about the programme when asked

for their comments in the final survey. Several participants referred to peer exchange as being a valuable element of the programme. The small number of critical comments were focused on some of the content being too basic or not relevant to the specific business (for example, information about stock control is not relevant to a service business).

Policy implications

The Business Boost programme appears to have had significant success in encouraging businesses to make some steps towards increasing productivity – in adopting modern management tools (such as the use of SWOT analysis and a business canvas), and, to a more modest extent, in setting out a positive vision and strategy for the business. During the project’s lifetime there was no evidence of impact on the other outcomes that were thought to be associated with increasing productivity (such as the use of formal business plans) or on the business owner’s self-assessment of growth plans. However,

it will certainly be of interest to monitor outcomes among these businesses, to assess whether the initial positive steps translate into higher growth and productivity over a longer period.

The initial positive results raise the question of what can be learned from Business Boost to inform the design of other business support programmes. Two of the distinctive features of this programme were the peer-to-peer interactions during the workshops and the one-to-one follow-up sessions with the mentors. Both of these elements were highlighted by participants as valuable in qualitative feedback provided in the final survey. Although it is not known to what extent either the peer-to-peer interaction or the mentoring sessions were crucial to the outcomes of the Business Boost programme, this suggests that these features are worth testing more formally in future programmes of this kind.

Wider learning

Potential for bias in quasi-experimental evaluations

Alongside the trial, data was also collected from an additional cohort of 150 businesses that were not enrolled in the trial but had a similar profile in terms of business age, size, region and sector. This creates a comparison group of the kind that would often be used in a quasi-experimental evaluation. The evaluators found that relying on this quasi-experimental approach would have produced some misleading results: it would have implied that the project had a significant positive impact on the use of formal business plans and other managerial tools, and (less clearly) on the participant's plans for investment and growth. This provides a good illustration of the need for caution in interpreting findings from quasi-experimental evaluations

HeadsUp!

Research question	Do microbusinesses provided with access to live and interactive online training in digital business services increase their take-up of cloud-based business services and their productivity, compared to the provision of in-person workshops?
Project lead	Enterprise Nation
Evaluators	David Bell, Brunel University London
Grant amount	£237,000
Number of SMEs participating:	
Target	600
Recruited	179 (in the project's target locations) 543 (including SMEs from outside the target locations)
Location	London, Birmingham, Lancashire and Oxfordshire
Business size	Microbusinesses
Business sector	All sectors
Barriers addressed	Lack of awareness/understanding of potential benefits, lack of trusted advice.
Interventions	Comparison of online and in-person delivery of facilitated training on digital technologies.
Evaluation design	RCT (as designed)
Outcome areas	Completion of training; time spent on business activities and technology adoption.
Evidence of impact	Suggestive (but not conclusive) evidence that participation was higher among those allocated to attend in-person workshops than online events.
Readiness for scaling	Not ready: the low levels of participation from SMEs within both forms of treatment suggest important weaknesses in the design of the programme that would need to be if to be utilised as a focused intervention for a select number of participants.
Potential for further testing	Would require substantial redesign before being tested again.

Rationale

Enterprise Nation identified several barriers that SMEs (particularly microbusinesses) face in adopting digital technology, ranging from not knowing which areas of the business have most to gain, to not having

access to trusted support, and a lack of time and financial resources to implement a solution. The aim of this project was to overcome the knowledge and trust barriers by providing businesses with support from an expert adviser. The key question the trial sought to answer was whether this support

would be most effective when delivered through online training sessions in small groups, or in larger in-person workshops. The online training route offered a more personalised approach, with participants able to select from a series of short training sessions delivered to small groups, whereas the workshops would cover a broader but set package of content.

Intervention

The first stage of the HeadsUp! project involved developing a programme of training for SMEs on using digital technology to boost productivity. The programme covered the use of digital technology to support in 4 areas: accounting and finance, collaboration, sales and marketing, and time management. Support particularly focused on a curated list of software solutions (including Xero, CharlieHR and BaseKit), with their providers being involved in providing content for the programme.

A group of 31 professional business advisers were recruited to provide the training to SMEs. These interactions were carried out through two routes:

- Online training sessions delivered live by a facilitator, with up to 5 participants. Participants were offered a choice from 20 different training modules, 5 under each of the 4 areas covered by the project. Each module took around 30 minutes to complete.
- In-person workshops, each covering 5 modules and lasting 2½ hours in total. The material covered and the time allocation was the same as in

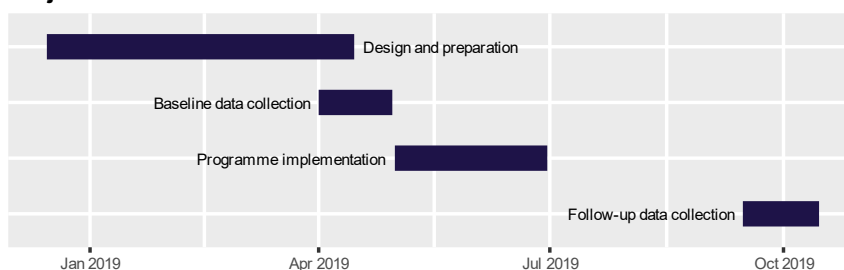
the online intervention, but there was less flexibility about which modules participants could take – each workshop covered all 5 of the modules under one of the 4 topic areas. Workshops were to be held in each of the 4 regions covered by the project.

An online platform was developed to enable SMEs to book sessions and to interact with the advisers. Participants were entitled to attend as many online sessions or workshops as they wished, with a total of 10 hours of training being available under each route. The project team set a target that each SME would participate in at least 2½ hours of training.

Evaluation design

The project was designed as an RCT, with participant businesses being randomly selected either to be offered the chance to participate in the online training sessions, or to be invited to the in-person workshops in their region. Businesses were surveyed about their existing use of digital technology on registration for the project. A follow-up survey, carried out approximately 3 months after the support was delivered, asked the businesses about whether they had adopted or tested any new digital technologies since that time. However, levels of participation in the training and response rates to the final survey were below expectations, meaning that there is little potential to compare outcomes

Project timeline



between those assigned to the online and offline routes.

Impacts

Levels of participation in the project were much lower than expected. 179 SMEs were recruited into the main trial, but only 44% of them booked to attend one of the sessions (either online or an in-person workshop), and only 21% actually attended any sessions. Overall, participants attended only around a third of the sessions that they had booked.

More of the participants who were allocated to the in-person route booked a session (48%) than those who were allocated to the online route (41%), but the sample size is not large enough to determine whether this is a meaningful difference.

Those who participated in training provided positive feedback on the content and the delivery. However, most did not attend more than one session. The target of participating in 2½ hours' training under this project was met by 25% of those assigned to the in-person route, but was achieved through attendance at only a single workshop. In contrast, only 6% of those allocated to the online route (who would have had to attend 5 sessions in order to receive 2½ hours of training) did so.

Policy implications

It is not completely clear from the experience in this project how future programmes can avoid the problem with low rates of participation among the SMEs that signed up. One potential explanation is that the types of businesses that were recruited were not those that had the potential to benefit. However, the positive feedback received from those who did participate in the sessions appears to

contradict this: most reported that they found the sessions very useful and that they learned something new. Alternatively, it may be that participants were not sufficiently supported or encouraged to attend multiple sessions, with too much emphasis being placed on their freedom to diagnose their needs and select sessions themselves. Without the ability to measure impacts, we do not know whether businesses would have benefited from the greater exposure to the potential benefits of digital tools from bundling at a workshop, or if they had instead made discerning choices about what was relevant to them.

A future variation of the programme could involve testing approaches to keep participants engaged and to encourage them in progressing from one training module to another. For example, it may be possible to be clearer about the grouping of courses and to make links between those that were more popular (for example, the course on using social media) and those that are important but less attractive (such as that covering the automation of tax returns).

Enterprise Nation noted that the proportion of no-shows tends to be much lower at other events they run, for which participants are often charged a nominal booking fee. There is an argument that charging for participation could have increased the attendance rate, at least among those who have booked a place. However, it is also possible that introducing a fee would deter some businesses that could potentially benefit from the programme: this is discussed further in Section 4 of the main report.

The programme provided Enterprise Nation with an opportunity to develop and experiment with new formats, and the

learning generated has been used to enhance the support it provides to SMEs. For example, an Energiser Programme was subsequently designed to blend both in-person workshops and online meetings within a structured 3-month programme. The lessons around progression also led the company to make much greater use of automated and tailored messages to prompt further action in later programmes. Enterprise Nation is positive about the benefits of these changes, but their impact has yet to be tested with the same rigour as planned for this trial.

Wider learning

Data collection

The project team had originally hoped to collect an extensive set of data on attendees, to provide detailed insights on their characteristics, the technologies they use, and their levels of productivity. In the event this was not possible. However, some other projects have shown how this could be achieved if data collection was integrated into programme delivery and utilised to improve the quality of support.

During final analysis a large number of businesses (around 90) that had registered were excluded from the analysis. This was the result of duplicate applications and inaccurate data. This indicates the benefits of checking application data as early as possible, as well as structuring survey tools so as to ensure data quality.

A Scientific Approach to SME Productivity

Research question	For microbusinesses, does offering access to 21 hours of free management training and mentorship according to the scientific approach lead to higher productivity than offering a standard, hour equivalent, management training and mentorship program?
Project lead	City, University of London
Evaluators	Elena Novelli, City, University of London and Chiara Spina, INSEAD
Grant amount	£318,000
Number of SMEs participating:	
Target	240
Recruited	274
Location	Greater London
Business size	All SMEs
Business sector	All sectors
Barriers addressed	Poor quality of strategic decision-making.
Intervention	Including training on the use of a scientific approach in decision-making in a conventional business training programme.
Evaluation design	RCT
Outcome areas	Strategic iterations (pivots), productivity.
Evidence of impact	Clear impact on adoption of scientific approach to business decisions; indications (including through other trials) of consequent impact on business performance and growth.
Readiness for scaling	Ready for wider rollout, based on the evidence of effectiveness.
Potential for further testing	Large-scale follow-up trial is under way across 6 countries, testing how to optimise the content of the programme.
Further information	Trial registration , working paper on findings

Rationale

This project is based on the observation that entrepreneurs frequently make suboptimal decisions about how to run their businesses. Business decisions are often made on the basis of untested assumptions or entrepreneurs' intuitions, which may mean that they adopt or stick with a strategy that has little potential for success, or pivot to a new strategy that may have

less promise than the existing one. By encouraging entrepreneurs to formulate clear theories and hypotheses about their business model and then to gather evidence to test those hypotheses, the project team hoped to enable them to improve the quality of their decisions and thereby the performance of their businesses.

Intervention

Researchers at City, University of London (working in collaboration with a team at Bocconi University and the University of Oxford), designed a training programme for owners of microbusinesses on the scientific approach to entrepreneurship, which was delivered the branding of the ‘Strategy Insight Lab’. The programme consisted of 7 3-hour training sessions, delivered over a 3-month period in person at a university location. The course was designed to be interactive, with 15-20 participants in each class.

Topics covered in the training programme included how to articulate business strategies and identify underlying hypotheses, how to design tests of those hypotheses, and how to evaluate the results. The content builds on the principles of the ‘lean startup’ approach, but places more emphasis on formulating a theory and testing hypotheses that are central to their business model.¹

Evaluation design

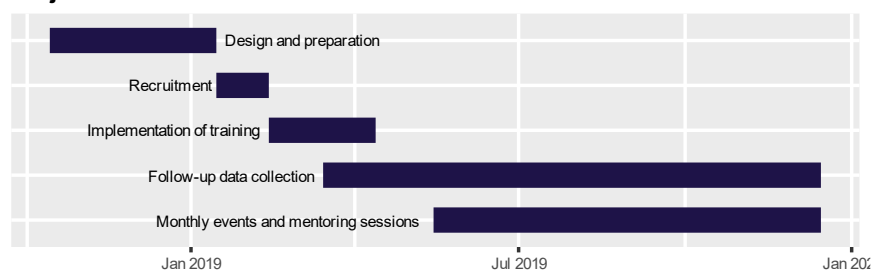
274 microbusiness owners were recruited for the trial, and were randomly allocated to participate either in the scientific entrepreneurship training or in a more traditional business-training programme, as a control. The content of the treatment and control programmes was similar, except that the treatment programme emphasised how each of the tools and approaches being taught could be used to articulate and/or test the theory underlying their

business model. The content of the two training programmes was carefully controlled by the researchers to ensure consistency of the messages that were being delivered.

All participants in the trial were interviewed and completed a survey at baseline. They were then asked to participate in a follow-up interview each month over the subsequent 8 months. As well as being asked to report on their revenue and employment, business owners were asked open-ended questions about the activities they had undertaken and decisions they had made recently. The interviewers then coded the responses based on occurrences of themes relating to scientific decision-making. The interviews also included questions about the businesses’ performance, from which data relating to business closures and strategic pivots were obtained.

In order to motivate the participants to continue participating in these data-collection activities for the 8 months after the end of the training programme, the project team organised monthly events at which participants would receive information on further topics of interest and would have an opportunity for further networking. (These events were held separately for the treatment and control group, but the content of each was the

Project timeline



¹ For more details see Felin T and others. [‘Lean startup and the business model: Experimentation revisited’](#) Long Range Planning 2020: volume 53, issue 4, 101889

same.) All participants were also offered two mentoring sessions with the course instructors. Attrition rates increased steadily each month, but by the eighth month, 55% of the original participants were still participating in the interviews. Attrition rates were similar between the treatment and control groups, which largely assuages concerns that differential attrition may bias the comparisons of outcomes between the two groups.

To maximise the statistical power to detect effects from the treatment, analysis was carried out using data from across all of the survey rounds.²

Impacts

The scientific entrepreneurship training was successful in prompting participants to adopt a more scientific approach to business decisions. On the measure of ‘scientific intensity’ of business decisions reported in the monthly interviews (coded by the interviewers on a 5-point scale), the treatment group scored approximately 0.18 points higher than the control group, with a 95% confidence interval ranging from –0.01 to 0.36 points. This overall difference declined slightly over the months, but there was still a clear difference 8 months after the end of the intervention.

There is no indication of an overall impact from the treatment on the second key outcome measure, the number of strategic iterations or ‘pivots’ made by the business during the 8-month period. However,

exploratory (that is, non-pre-registered) analysis of the survey data suggests that businesses in the treatment group pivoted more quickly than did those in the control group. It also appears that treatment group businesses that had a formal company registration were more likely than the corresponding businesses in the control group to pivot a single time, as opposed to not pivoting or making more pivots. The researchers interpret this latter pattern as suggesting that the training enabled mature and formalised businesses to make more precise pivots.³ Additional exploratory analysis suggests that start-up businesses were more likely to make radical pivots in their business model, while more mature businesses tended to make adjustments rather than fundamental changes. It also appears that the treatment group were more likely than the control group to close down their business altogether during the data-collection period; this is interpreted as implying that the scientific approach enabled some entrepreneurs to assess that their business model was unlikely to succeed, and so to avoid sinking further resources into it.⁴

The third key outcome measure examined by the researchers was business productivity. Four measures of productivity are considered (revenue over costs, value added, revenue per hour worked, and revenue per employee). There is no evidence of an overall impact from the scientific entrepreneurship training on productivity within the data-collection

² Analysis in the working paper subsequently published based on this same study is based on simpler linear regression models, using a single outcome observation and a single baseline observation for each outcome measure. We instead discuss the results from the analysis of covariance (ANCOVA) models, both because they have higher statistical power and because this is the form of the analysis that was pre-registered.

³ Further research is under way to explore whether this interpretation is supported by the information in the detailed interview transcripts.

⁴ Reported in Camuffo A and others. [‘A scientific approach to innovation management: Evidence from four field experiments’](#) Centre for Economic Policy Research discussion paper DP15972, 2021

period, though for two of the measures (value added and revenue per employee) there are indications of a positive impact specifically among registered companies. It also appears that there was a significant positive effect on employment, with the number of employees growing more rapidly among SMEs that received the scientific entrepreneurship training than the control businesses.

Policy implications

This project was the fourth RCT to be conducted on the impacts of scientific entrepreneurship training, the previous 3 all taking place with early-stage entrepreneurs participating in accelerator schemes in Italy. In all 4 trials, those who received the scientific entrepreneurship training were found to have used a more scientific approach to decision-making than the corresponding control businesses, and were more likely to make a single strategic pivot or to completely terminate their business. When the data from the 4 trials is combined, those in the treatment group are also found to have generated higher revenue than the corresponding control businesses.⁵ The consistency between the results of the 4 trials adds to the confidence that similar positive results will be found as the programme is replicated elsewhere.

The scientific entrepreneurship approach is now being tested in further large-scale RCTs, conducted across several countries – including the UK as well as China, India, Italy, the Netherlands and Tanzania. This new trial will particularly probe whether it is the focus on theory-building or the emphasis on experimentation and testing that is the crucial element of the scientific

entrepreneurship approach. It will also be of interest to follow how this approach transfers to other formats – such as in the free [online training course](#) that the researchers have developed.

Wider learning

Recruitment of SMEs

Since the intervention required all participants to attend a programme of classroom training with a single start date, the project team invested heavily in promoting the programme, to make sure that a sufficient number of SMEs could be recruited at the right point in time. Promotion was carried out primarily using social media, particularly among the alumni networks of the institutions involved. A team of around 25 (including the researchers, social-media specialists and administrators) worked on creating content and managing this campaign.

Potential for rich data collection when embedded within programme delivery

The project team was able to successfully implement an impressive depth and frequency of data collection during the implementation of the programme. This required significant investment in the data collection but another key factor in their success was that data collection was made integral to the programme implementation, with all participants receiving support. Having access to this depth of data increased the statistical precision of analysis but also provides the data for further exploration of how SMEs respond to the intervention and improve performance.

⁵ Results from Camuffo and others: see previous footnote.

AI for SMEs

Research question	Can market-convening workshops and vouchers or tailored one-to-one support raise awareness of the potential benefits of, and ultimately increase adoption of, artificial intelligence technologies among SMEs in the retail and hospitality sector in Greater London?
Project lead	Greater London Authority
Delivery partners	CognitionX, Capital Enterprise
Evaluators	Anna Valero, Capucine Riom and Juliana Oliveira-Cunha, London School of Economics
Grant amount	£190,000
Number of SMEs participating:	
Target	400
Recruited	229
Location	Greater London
Business size	All SMEs
Business sector	Retail and hospitality
Barriers addressed	Lack of awareness/knowledge about benefits, lack of growth mindset, resource constraints, risk aversion.
Interventions	Comparison of in-person events with one-to-one advice and a voucher in promoting adoption of AI tools.
Evaluation design	RCT (as designed) Pre/post comparison with some qualitative evaluation (as implemented)
Outcome areas	Technology adoption.
Evidence of impact	Weak evidence for causal impacts: positive feedback from a small number of self-selected participants.
Readiness for scaling	Not ready: does not appear to be sufficient demand for these technologies from SMEs in the sectors targeted by this project.
Potential for further testing	Would need to refocus the intervention on addressing SMEs' key priorities, then establish demand in a pilot before testing at scale.
Further information	Trial registration , summary of learning

Rationale

This project was prompted by the observation that chatbots and marketing automation have the potential to

significantly increase the efficiency of customer acquisition in the retail and hospitality sectors, but that they have so far seen little adoption by SMEs. This situation is believed to be a result of lack of

knowledge about the technologies available to SMEs and their benefits, combined with resistance to change, financial constraints and risk aversion. The project sought to test the relative importance of these barriers by offering SMEs one of two interventions. The first, a light-touch market-convening approach, was intended to address the lack of information about these technologies, how they can be used, and who the vendors are – while also inspiring managers with information about the potential benefits available from adoption. The second was a more intense package of technical support and a subsidy, intended to provide deeper understanding about the technologies while also overcoming financial constraints and reducing the financial risk involved in testing them in the business.

Intervention

The project tested two approaches to the adoption of chatbots and marketing automation technology:

- Treatment 1: market-convening approach, in which SMEs were invited to events about the potential of marketing automation, with presentations from AI experts and vendors. The first two events were held in person, while the third was held online after the onset of the COVID-19 pandemic.
- Treatment 2: tailored approach, in which an independent technical expert provided advice to SMEs on AI technologies that were appropriate for them, and then supported them in adoption. SMEs were also offered a voucher for £750 to use for purchase or subscription fees for the technologies.

All participants in the trial (including the control group) were also given access to an online information pack about using AI

technologies in SMEs in the retail and hospitality sectors.

Evaluation design

The project was set up as an RCT, comparing the impact of each of the two treatments to the control group.

The number of SMEs that was recruited into the trial was lower than expected, and only a small proportion of those that signed up completed the final survey. Given the very small sample size in the final survey (43 SMEs), the evaluation is primarily restricted to examining changes over time in the two treatment groups, with some descriptive comparisons between them and the control group. The researchers also asked the project participants to take part in a qualitative interview about their experience on the trial, though only 4 of them agreed.

Project timeline



Impacts

Participation rates in the events provided as part of treatment 1 and treatment 2 were disappointing. Only 24% of those allocated to Treatment 1 attended the market-convening event, and 44% of those allocated to Treatment 2 either attended the event or booked a one-to-one session with a caseworker. None of those in the Treatment 2 group used the vouchers to fund adoption of the technologies within the project's lifetime.

The low rates of participation in the interventions and the low response rate to the final survey mean that strong conclusions cannot be drawn about the impact of the interventions. However, the survey data do provide some useful

indications. As expected, those who received the more intensive treatment (Treatment 2) were more likely than those in the Treatment 1 group to say that the interventions had addressed the key barriers to adoption that were identified at baseline. The final survey respondents (including the control group and both treatment groups) reported having a better understanding of the costs and benefits than before. However, their attitudes towards the use of AI worsened (though this seems to have been concentrated among those that did not participate in the activities) and their willingness to pay for these technologies was lower than at baseline. Feedback from the qualitative interviews suggests that participants learned that the technologies were not as ready for adoption as they had hoped, with specialist support and manual checking or backstopping still required.

Policy implications

The difficulties with recruitment and the low participation rates among those that did sign up suggests that this project did not address the priorities of SMEs, even before the COVID-19 pandemic. This does not mean that there is no interest in technology adoption at all: all 43 businesses that responded to the final survey said that they had sought out external advice on technology matters (perhaps as a consequence of the pandemic). Instead, it appears that the AI technologies being promoted under this project were not seen by SMEs as appropriate for their businesses.

Future programmes should establish whether there is sufficient demand for the intervention from SMEs before attempting to test an intervention at scale, and to ensure that participation is made as straightforward and flexible as possible for time-poor SME managers.

Wider learning

Recruitment of SMEs

Initial efforts to promote the project at London Growth Hub events, through the press and social media, and by sending 'cold' emails to a list of eligible businesses all produced few sign-ups. Instead a marketing agency was hired to contact eligible businesses by phone. The agency made a total of nearly 28,000 calls to 8,000 SMEs in order to produce 175 sign-ups for the project; SMEs that eventually signed up had to be called an average of 4.4 times before agreeing. It later transpired that some of the businesses recruited in this way did not have a good understanding of what the project entailed, and many did not participate in the project activities. Overall, 43% of those that were allocated to the two treatment groups did not participate or engage with the project team at all after registration.

Key points to learn from this experience are to test the demand for an intervention before launching at scale, and to ensure that staff involved in recruitment have a thorough understanding of the programme that they can communicate clearly to potential participants.

Survey attrition

The low response rate to the final survey presented a major difficulty in the evaluation of this project. After receiving little response to emails from the GLA, a marketing agency was contracted to carry out reminders by phone. After making 2,400 phone calls, a further 34 of the project participants had completed the survey. Only 25 actively refused to carry out the survey, but many of the others could not be reached by phone. The LSE researchers also sent individualised emails to the remaining project participants, but this did not result in any further completions of the survey.

Communications with participants

Feedback from the implementers suggests that receiving contact from several different organisations in the course of this project (including the recruitment agency, the GLA, the delivery organisation and the LSE

researchers) caused confusion among participants and increased the likelihood that key emails would be missed. The evaluators propose centralising communications in future projects of this kind.

People Skills+

Research question	Can behavioural insights be used to motivate SMEs to take up an offer of free consulting on human resources (HR) and people management issues? Do SMEs that take up the offer demonstrate improved HR and people management practices?
Project lead	Chartered Institute of Personnel and Development (CIPD)
Evaluators	The Behaviouralist
Grant amount	£351,000
Number of SMEs participating:	
Target	1,000
Recruited	92
	56
Location	Greater Birmingham and Solihull
Business size	All SMEs
Business sector	All sectors
Barriers addressed	Lack of awareness/knowledge of benefits, lack of access to trusted advice, resource constraints.
Intervention	One-to-one consulting on HR and people management.
Evaluation design	RCT (as designed, and as implemented for the messaging trial) Pre/post comparison with qualitative interviews (as implemented for the second-stage trial)
Outcome areas	HR and people management.
Evidence of impact	Indications of positive changes among businesses that received support.
Readiness for scaling	Evidence does not yet justify scaling.
Potential for further testing	Potential future tests should focus on which elements of the programme are key to its success – such as how much value is added by the peer-to-peer element (and whether this can be replicated effectively in an online setting) and the individual mentoring sessions.
Further information	Trial registration

Rationale

The premise of the People Skills+ programme is that many SMEs could benefit from applying improved practices in human resources (HR) and people management. Adopting better practices

would result in improved management, hiring, and promotion decisions, which over time would result in reduced staff turnover and increased productivity. However, SME managers are often not aware of these potential benefits, and in any case do not

have access to advice and support on HR and people management or resources to invest in adopting improved practices. The People Skills+ programme was designed both to create demand among SMEs for HR and people management support, and to provide that support.

Intervention

The People Skills+ programme was divided into two phases. The first involved communicating the potential benefits of improved HR and people management practices to SMEs and offering them the opportunity to receive support.

The second phase then involved providing SMEs that had signed up for the programme with one-to-one support from a specialist HR consultant. SMEs completed an initial diagnostic and were given a report with feedback about the HR practices. They were then matched with one of 7 HR consultants, depending on the specific area in which they required support. The support provided was broadly categorised as ‘transactional’ (dealing with day-to-day people management processes such as health and safety, compliance or employment contracts) or ‘transformational’ (such as restructuring pay and rewards, training and development or performance management systems). Most SMEs received a blend of the two types of support. Each SME was allocated up to 2 working days of support free of charge, with the timetable to be determined by their needs. On average the participant SMEs received 10.5 hours of support, with 45% of them receiving at least some of the support in person.

Evaluation design

The project was originally planned as a series of two randomised controlled trials. The first trial would assess the best messages to use in promoting the People Skills+

programme among SMEs, while the second would assess the impact of the programme itself among SMEs that applied to participate.

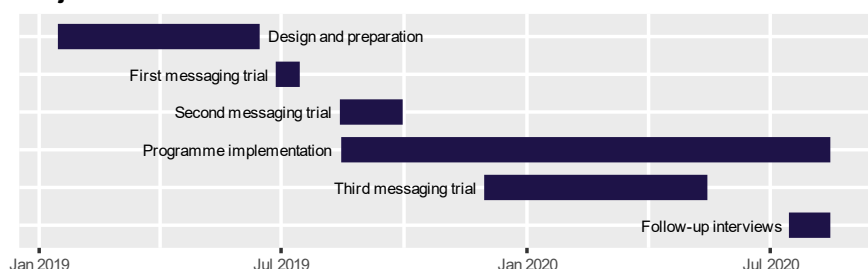
In the event, 3 different trials were carried out to test messages for recruitment into the programme. SMEs were randomly allocated to receive emails or letters/flyers with a variety of messages. For example, one of the messages emphasised the positive impact that HR consulting could have for the business, while another emphasised how HR consulting could help the business avoid negative outcomes, such as being taken to employment tribunals. However, none of these communications led to a meaningful uptake of the People Skills+ programme, and there were only minor differences in the success rates of the different message types.

The low rate of response to the marketing trials meant that too few SMEs were recruited into People Skills+ to carry out a randomised evaluation of its impacts. Instead, the programme was evaluated using a before-and-after comparison of data from the diagnostic surveys. Three quarters of the businesses that received consulting support responded to the final survey. This quantitative comparison was complemented by detailed interviews with 10 of the participant businesses.

Impacts

The before and after comparison and the qualitative interviews suggest that the SMEs that received support from a consultant under People Skills+ made changes to their business practices as a

Project timeline



result. The largest changes were in recruitment practices: a third of the businesses instituted the use of written interview questions after being given consulting support, and a quarter began using job adverts to recruit new employees. There were also significant changes in businesses' behaviour around contracting (in particular a large increase in the number of businesses with a formal procedure for discipline and dismissals), staff training and development (for example, the adoption of a standard induction programme) and pay and performance (such as setting written objectives or targets or holding regular performance reviews).

The qualitative interviews demonstrate that participants varied widely in their needs, their expectations of the programme and the type of support they received. However, all were positive about their experience with the programme, and all the respondents in the final survey said that they would recommend the People Skills+ programme to other businesses. Two thirds said that they would consider investing more in HR and people management.

Policy implications

The positive changes that were reported by the SMEs that received support under the People Skills+ project suggest that this is a promising approach. The support provided by the consultants varied widely, suggesting that this could not have been replaced with a one-to-many model. There remain questions about the cost-effectiveness of providing individualised consulting support: this would be a key aspect to examine in any future evaluation.

Wider learning

Recruitment of SMEs

As noted above, only small numbers of SMEs responded to the offer of the People Skills+ programme in the messaging trials, whether sent by email or letters and flyers.

Emails sent by the regional Growth Hub to a sample of SMEs on its existing contact list were opened by 28% of recipients – but only 1% clicked on the link to start the diagnostic for People Skills+, and none of them completed the diagnostic. In the second trial, CIPD sent emails to a list of SME owners and managers provided by a data broker: 16% of the emails were opened, but the click-through rate was only 0.2%. Finally, letters or flyers promoting the programme were sent to 40,000 SMEs, but only 20 responded by completing the diagnostic, a rate of 0.05%.

The project team suggest that the communications may have been more successful if the programme had been better known or if the approaches had been combined with other forms of outreach. Alternatively, it is possible that SME managers are not convinced that HR or people management support would be of value to them, and the marketing materials were not sufficiently persuasive to overcome this.

Following the disappointing results of these messaging trials, the project team had success in recruiting participants by attending local business events. Promotion on social media also generated some interest, but at a high cost per lead. The project also advertised in the Greater Birmingham Chambers of Commerce online newsletter and magazine, but this did not result in any direct leads.

The key learning points identified by the team from this experience (combined with their experience piloting in other areas) are that it is important to coordinate with local partners who have strong networks of businesses in the area, and to effectively integrate the programme within the existing business support services, such as those provided by Growth Hubs. There is also a suggestion that the requirement to fill in the diagnostic survey (which took around 15 minutes to complete) may have been a

significant barrier for those who made it as far as the sign-up page.

Engaging Rural Micros

Research question	What are the most effective methods of engagement with rural micro businesses in Devon? What is the most appropriate method to stimulate positive attitudes/mindsets towards business development among rural micros and increase opportunity seeking and actions to develop, grow or increase productivity?
Project lead	Devon County Council
Delivery partners	TransForm Research, Business Information Point, Cosmic
Evaluators	Kevin Burchell and Laura Wallis, Plymouth Marjon University
Grant amount	£60,000 (initial research/proof of concept) £400,000 (full trial)
Number of SMEs participating:	
Target	255
Recruited	416 (initially signed up), 195 (completed baseline survey)
Location	Rural areas of Devon and Somerset
Business size	Micro-businesses (<10 employees)
Business sector	Health and social care, manufacturing, tourism, service and retail trades
Barriers addressed	Lack of awareness of support available, lack of technical skills, lack of knowledge about benefits, perceived high cost, lack of time, lack of growth mindset.
Interventions	Comparison of one-to-one advice on technology adoption with wider-ranging business counselling.
Evaluation design	RCT (as designed) Pre/post and qualitative evaluation of two separate interventions (as implemented)
Outcome areas	Technology adoption, wellbeing.
Evidence of impact	Positive feedback from participants on the 'person and the business' intervention and some participants in the technology intervention.
Readiness for scaling	Not clear how scalable the 'person and the business' intervention is. Demand for the technology intervention would be a constraint to scaling.
Potential for further testing	Potential for adapting and testing an approach to deliver the 'person and the business' intervention in a scalable and cost-effective way.
Further information	Trial registration , evaluation report

Rationale

Rural microbusinesses make up a larger share of economic activity in Devon than in many other areas of the country, but the County Council has found it particularly difficult to engage them in business support programmes. This project aimed to explore the specific challenges faced by rural microbusinesses, including what the barriers are to engagement and how best to enable them to increase their productivity.

The first phase of the project – funded as a proof of concept under the Business Basics Fund – involved interviews and focus groups with microbusiness owners and the preparation of case studies. This work identified several key barriers to achieving growth and increasing productivity, ranging from the poor use of technology to the regulatory difficulties involved in employing staff and the problems with attracting suitable candidates. The research also highlighted that many rural microbusiness owners are not necessarily motivated by growth, and that they frequently struggle with balancing their work with family life and taking time off. Most are unlikely to proactively seek out support, and they are not aware of the opportunities available from business support programmes.

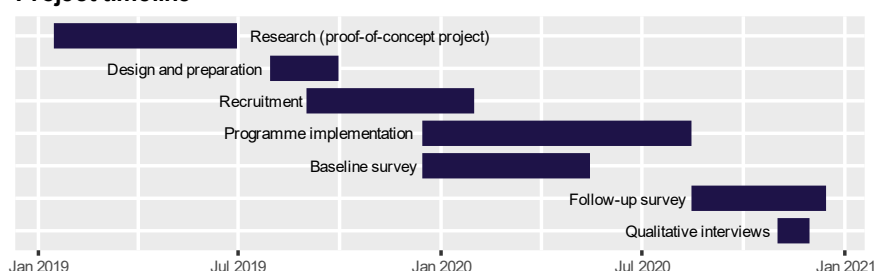
The preliminary research led to the design of two interventions aimed at microbusiness owners. Both were aimed at promoting positive attitudes towards business growth, but from different perspectives: one was focused on the possibilities presented by digital technology, while the other sought to support business owners in finding a balance between business objectives and personal life aspirations. These two interventions were tested in the full-scale project funded in the second round of the Business Basics Fund.

Intervention

Project participants were offered one of two support packages:

- Technology support package, a programme of one-to-one support from a digital technology specialist. This involved presenting owners with information about what specific technology solutions can achieve, then carrying out a diagnostic exercise for the specific business and identifying technologies that could benefit them. The range of technologies that were discussed was wide, including social-media marketing, accounting packages, communications, and customer relationship management software. Participants were entitled to apply for a grant to fund a trial period with a specific technology, although only a few of them took up this opportunity.
- ‘The person and the business’ support package, consisting of up to 12 hours of one-to-one support from a specialist in business counselling. The interactions were tailored to individual needs, but aimed overall to develop business owners’ soft skills and generate a positive attitude towards business growth and development. Topics covered in the sessions included goal setting, strategic planning, managing life/work boundaries and stress management, as well as discussions of specific questions faced by the needs of the individual business. The

Project timeline



aim was to find a way to balance business owners' personal lives with an ambition to grow their business.

Much of the support was planned to be delivered in person, but was switched to online delivery with the onset of the COVID-19 pandemic.

Evaluation design

The project was designed as an RCT. Businesses that signed up were randomly assigned either to a control group or to be offered the 'technology' package or the 'person and business package'. In April 2020, in view of the emergency resulting from the COVID-19 pandemic, the decision was taken to provide support also to the control group. Those who had originally been allocated to the control group were therefore randomly assigned to be offered one of the two support packages.

A baseline survey of project participants was carried out before randomisation, with a follow-up survey being conducted after they had completed (or stopped engaging with) their support package. Only 45% of those that entered the project and were offered one of the support packages completed the follow-up survey, a rate that was higher among participants in the 'person and business' package (54%) than the technology package (35%). In-depth qualitative interviews were also conducted with 16 participants from the 'person and business' package and with 9 from the technology package.

The implication of dropping the control group is that it is not possible to make strong claims about the impact of the two support packages. In principle the randomisation between the support packages would have allowed the evaluators to assess their effectiveness relative to each other – but the small sample sizes and high rates of attrition in the final survey reduce the potential for drawing clear conclusions from this

quantitative analysis. It is still possible to examine pre/post comparisons of outcomes for each of the two packages in isolation, though the fact that the outbreak of the pandemic happened between the time of the baseline and final surveys reduces the utility of these comparisons. The evaluation therefore draws more strongly on the qualitative interviews than had originally been expected.

Impacts

The experience of participants in the technology support package was mixed. Among those who responded to the final survey (who represented only a third of the participants), many said that they now had more a positive attitude toward the use of technology, and around 40% said that they had made some change in their business (such as actually trying out a new technology) as a result of the support. However, only half of the respondents said that they would recommend participation to other microbusinesses. In the final qualitative interviews, it was clear that many of those allocated to this support package did not feel that it was suitable for them – either because they were already making good use of digital technologies or because they felt that the technologies being discussed were not relevant or appropriate for them. Since only a third of those who were allocated to this support package participated in the final evaluation, it seems likely that these feelings were also widespread among the two thirds who did not.

In contrast, feedback from participants in the 'person and the business' support package was overwhelmingly positive. Large majorities of those who responded to the final survey said that their interactions with the business counsellors had given them increased confidence about managing their business, and nearly 60% said that they had made actual changes in their business as a result (including the adoption

of new technologies). Nearly half said that their time management had improved and that they now have better work/life balance. The qualitative interviews show that participants appreciated that the counsellors tailored the conversations to the individual's own needs rather than delivering a standardised package, and that they acted as a 'sounding board' to discuss ideas with. These elements were particularly important as participants were responding to the emerging COVID-19 crisis.

Policy implications

This project was originally envisaged as comparing two very different interventions that were aimed at a single goal, that of increasing productivity among microbusinesses. While it is not possible from the data available to know whether either will have long-term impacts on productivity, there are very encouraging signs from the 'person and the business' support package – not least that the support provided was highly valued by the participants. There are two constraints in drawing policy lessons from this intervention. Firstly, the positive results may have been driven by the personalities and experience of the 3 specific counsellors who implemented the 'person and the business' support package: since the type of support was tailored to the individual's requirements, there is little structure or process that other organisations can replicate. Secondly, an intervention that requires 12 hours of support from a highly experienced counsellor would be difficult to scale. Future testing could focus on assessing how to adjust the intensity of support (such as the number of hours) to balance the cost of delivery with the benefits to businesses.

The idea of the technology support package was that, by discussing the potential of digital technologies and providing individualised support in testing them, even

business owners who had not previously been interested in new technology may become more receptive. This is likely to have happened in some cases. However, many of those who were allocated to the technology support package believed that it was not relevant to them and were dissatisfied with their experience of the project. The principle of 'showcasing' technologies to business owners may have potential, but it may be received more positively if carried out as one element of a wider programme of support than if it forms the whole package of support available.

Wider learning

Recruitment of SMEs

The project team used a wide range of approaches to recruit rural microbusinesses for the trial. Significant numbers of businesses were recruited through email newsletters (particularly Devon County Council's own newsletters) and through social media (although the latter produced many approaches from businesses that were not eligible). Smaller numbers were recruited through postal mailings, print publications, business events and networking groups. However, the technique that proved most successful was for trading standards officers (TSOs) to visit rural microbusinesses in person and encourage them to participate. The success of this approach was in line with the findings from the proof-of-concept research that rural businesses prefer to engage face-to-face, and it made good use of the TSOs' experience of working directly with SMEs and their understanding of the challenges they face. Nearly two thirds of the eligible businesses that signed up came as a result of the TSOs' visits, with the cost per sign-up being comparable to social-media advertising. It should be noted that this approach was possible because Devon's economic development team is integrated with the trading standards service; this would be more difficult to replicate in

another local authority where these teams do not have a close relationship.

Trial design and attrition

Despite the initial success in signing up more than 400 eligible SMEs to participate in the trial, more than half either did not provide consent to participate in the trial when requested by the County Council or did not respond to the baseline survey. Once they had been given the details of their allocated support packages, large proportions (more than half of those allocated to the ‘technology’ intervention and more than a third allocated to ‘person and business’) either actively withdrew or did not respond further.

Some of the early-stage drop-outs appear to have been caused by bureaucratic problems with the process of providing consent. However, there is also evidence that the way the trial was designed contributed to the high attrition rate. Since participants were being allocated to one of

two very different support packages, the trial was described in the recruitment campaign in very general terms: the communications described it simply as a research project, and did not specify that the businesses would be offered a package of support that they would need to dedicate time to. The qualitative interviews reveal that many participants (particularly those offered the ‘technology’ package) felt that the package offered was not relevant to them. Some of the recruitment communications promised networking opportunities to participants, but these opportunities did not materialise since the group sessions were cancelled with the outbreak of the COVID-19 pandemic.

There is a difficult balance in implementing an RCT between providing enough information to encourage participants to sign up and not being able to be too specific about the type of support provided. This challenge is discussed further in Section 4 of the main report.

Leading to Grow

Research question	Does personalised, tailored support from a business expert to microbusiness owners reduce perceived constraints to growth, such that more growth-related intent and growth-related behaviours are exhibited by those businesses?
Project lead	Chartered Association of Business Schools
Evaluators	ALM Analytics & Consultancy Limited, Enterprise Research Centre
Grant amount	£400,000
Number of SMEs participating:	
Target	800
Recruited	289
Location	Local areas of 16 business schools across England
Business size	Microbusinesses
Business sector	All sectors
Barriers addressed	Lack of management capacity, lack of growth mindset, lack of awareness/understanding of potential benefits.
Intervention	Workshops on digital technologies and one-to-one advice from a business leader.
Evaluation design	RCT (as designed) Qualitative evaluation (as implemented)
Outcome areas	Technology adoption (as planned) Business resilience (revised focus)
Evidence of impact	No follow-up with participants, but business schools have documented some examples of positive impact on SMEs supported.
Readiness for scaling	Not applicable to the programme as implemented: the programme was adapted to react to the specific situation arising from the COVID-19 pandemic.
Potential for further testing	There is still potential for carrying out the trial as originally conceived, possibly with some experimentation on the optimal amount of contact time to provide.
Further information	Trial registration

Rationale

The Leading to Grow programme was designed to address some of the barriers to the growth of microbusinesses identified in earlier reports from BEIS and the Enterprise

Research Centre. A 2013 report noted that nearly three quarters of microbusinesses were constrained by the lack of a clear vision for growth, and two thirds faced

capacity constraints.⁶ The Leading to Grow programme sought to encourage business owners in their growth ambitions and to provide tailored advice that would allow them to make steps towards realising those ambitions. The content specifically focused on the potential of digital technologies to support business growth.

Intervention

The Leading to Grow programme was designed in collaboration with and implemented by 15 business schools across England. The programme was targeted at microbusinesses that do not typically engage with business support schemes.

The first stage of the programme consisted of a half-day workshop hosted by the local business school, showcasing the potential of digital technologies. These workshops were intended to be in-person events, so as to allow interaction and exchange of experiences between the participants. However, the later workshops were instead carried out as online events, following the outbreak of the COVID-19 pandemic. A total of 277 businesses participated in these workshops.

The second phase of the project involved receiving up to 4 hours of one-to-one advice from an 'Entrepreneur in Residence' (EiR), an experienced business leader connected with the business school. The original intention was for this support to be focused on the adoption of digital technologies, but in March 2020 this was changed so that EiRs focused instead on supporting businesses in responding to the emerging crisis. 195 businesses received support from one of the EiRs. (Other businesses

that were eligible for this support either could not be contacted once the lockdown began or were not confident that they were entitled to participate while key staff were furloughed.)

Several of the business schools also held online workshops for participants, to complement the direct support from EiRs. At the completion of the project, participants were also given the opportunity to join a final workshop to share experiences of responding to the crisis and discuss strategies for promoting business resilience.

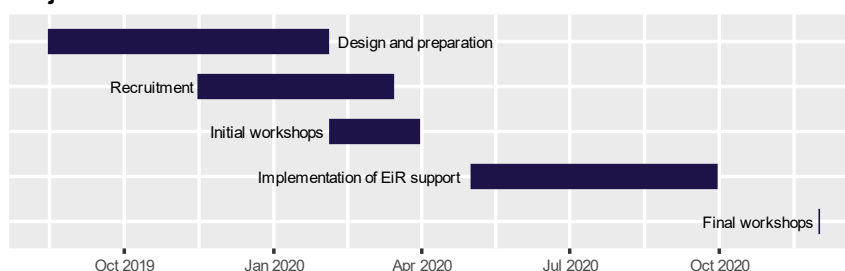
Evaluation design

The project was set up as an RCT. All participants were to be invited to join the initial workshops, but the support from the Entrepreneur in Residence would be provided only to the randomly selected treatment group.

With the outbreak of the COVID-19 pandemic, the RCT was abandoned, and many of the businesses that had been allocated to the control group were also offered support from EiRs. (The specific policy in this respect varied by business school: some of the business schools had reached their capacity limit, so were not able to offer EiR support to the control group.)

Baseline data was collected at the initial workshops on participant businesses' current use of digital technologies and their intentions to adopt new technologies in the

Project timeline



⁶ Allinson G and others (2013) '[Understanding Growth in Microbusinesses](#)' Department for Business, Innovation and Skills research paper 114

near future. Given the change in the project's aims and structure, no follow-up data was collected from the participant SMEs. Instead, the evaluation of the project is based on surveys of the EiRs.

Impacts

The EiRs reported that the businesses they engaged with during summer 2020 received the support very positively. They documented several examples of businesses that they assisted in pivoting in response to the pandemic, and others they supported in making improvements with marketing, communications, or management information systems. Most of the EiRs believed that the support they provided would result in improved confidence and greater adoption of technology among the SMEs because of their support.

On the other hand, a third of the EiRs said that at least one of the businesses they worked with is unlikely to benefit, due to the scale of the challenges they were facing or a reluctance to change. It is also important to note that most of the EiRs felt that 4 hours was insufficient to provide businesses with the support they needed. EiRs saw that digital adoption in particular required businesses to make substantial changes: the 4 hours of interaction was enough to diagnose the issues but not to help with implementation and addressing future barriers.

Policy implications

The original research question that was posed by the trial remains unanswered, and the trial protocol and research materials developed in this project could be used as the basis for an experiment in the future. If this takes place at some point, it would be useful to consider the feedback on whether 4 hours was the optimal allocation of support time. For example, a trial could be carried out with two treatment arms, one

involving a greater level of support being provided to businesses than the other.

For the lead delivery organisation, the Chartered Association of Business Schools, an important outcome of this project was that it demonstrated that a large group of business schools could work together at scale to support SMEs, including by agreeing on a common framework for the project and developing a common curriculum. A particular achievement was that the consortium was able to coordinate effectively in adapting the project quickly in response to the onset of the pandemic. Learning from this experience has since been put to use in implementing the Help to Grow: Management programme.

Wider learning

Recruitment of SMEs

Most of the business schools struggled to meet their recruitment targets for this project, even before the onset of the COVID-19 pandemic. The programme was open only to microbusinesses that had not received support from the business schools during the previous 12 months, which meant that business schools needed to reach beyond their existing networks to others that do not normally seek out advice.

The challenge of recruitment was exacerbated by the higher-than-expected number of no-shows at the initial workshops (exceeding 50% in some cases), by the distance of many of the potential participants from business schools, and by the fact that significant numbers of those that attended the workshops were not eligible for the programme. This may have highlighted a need for greater coordination and sharing of resources between business schools when implementing the programme.

The business schools that were most successful in recruiting and engaging SMEs

generally invested heavily in reaching out to potential audiences through multiple channels, had efficient sign-up processes, and followed up with potential participants by phone to ensure that they would attend the workshops. This connects to wider learning across the Business Basics programme about the dangers of overestimating the attractiveness of an intervention to SMEs and underestimating the 'frictions' of participation.

Coordination across business schools

One of the key achievements of this project (which has been built on under the [Small Business Leadership Programme](#) and then the Help to Grow: Management Course) was to coordinate 15 business schools to design and deliver a consistent programme of support. There are few opportunities to come together in this way and when it has happened it has [been at a smaller scale](#). However, the large number of actors involved did pose some challenges in delivery. Some of the challenges were

specifically because this was a research project, notably the complication of coordinating ethical approval between all the universities involved. On the other hand, most other challenges – such as the allocation of funds, ensuring consistency in reporting, and aligning with the individual universities' data-management policies – will apply equally to delivery of any programme across multiple business schools. While the business schools were aligned on the rationale and theory of change for the programme, there could have been more central coordination in the approach to recruitment, in forms and data flows, and in reporting. It would have been difficult to foresee the need for this investment or at least justify it given the scale of this trial. However, being able to gather such evidence will have proven valuable when there is the opportunity and ambition to sustain and grow similar activities, as proved to be the case for CABS and the participating business schools.

Adopting Operational Coaching as a management style to drive SME productivity

Research question	Does giving SMEs (the population) access to a blended learning programme in Operational Coaching (the STAR Manager programme) lead to greater adoption of coaching-related management behaviours that drive performance and productivity increases than having no access at all?
Project lead	Notion Limited
Evaluator	Michela Tinelli, London School of Economics
Grant amount	£315,000
Number of SMEs participating:	
Target	150
Recruited	62
Location	England (nationwide)
Business size	All SMEs
Business sector	All sectors
Barriers addressed	Lack of awareness/knowledge about benefits, perceived high cost.
Intervention	Self-guided online training on use of coaching behaviours.
Evaluation design	RCT
Outcome areas	Management practices
Evidence of impact	Strong evidence that training participants significantly increased the proportion of time they spend on coaching their staff.
Readiness for scaling	Ready for wider rollout, based on the evidence of effectiveness.
Potential for further testing	Potential future tests should focus on which elements of the programme are key to its success – in particular how much value is added by the peer-to-peer element (and whether this can be replicated effectively in an online setting) and the individual mentoring sessions.
Further information	Trial registration

Rationale

This project is based on the premise that the adoption of coaching behaviours by managers has a range of benefits, ultimately increasing business productivity. Executive coaching is traditionally provided

on a one-to-one basis by external specialists and so is normally restricted only to senior managers in larger businesses. Some existing programmes have sought to make coaching available more widely by training managers to provide coaching to

their employees – but Notion believes that these programmes have tended to result in coaching delivered in an overly formal way, as a sit-down process that is not appropriate for the realities of the workplace. The company developed a training programme that is aimed at enabling managers to apply Operational Coaching, in which coaching behaviours are integrated into their day-to-day management practices. To scale this programme, Notion then developed an online learning interface, STAR Manager, which was launched in 2019. STAR Manager has been marketed to and successfully used in large businesses, but until this project had not been tested in SMEs.

Intervention

Notion's STAR Coaching Model encourages managers to ask powerful questions. The model involves a 4-step process, based on the acronym 'STAR': Stop, Think (is this a coachable moment?), Ask powerful questions and listen actively, and Result (agreeing next steps, an outcome, or a way forward). The STAR Manager training programme consists of 20 modules of 20 to 30 minutes each, intended to be completed at a rate of one per week. The programme is delivered wholly online and involves participants completing a range of different activities. At the end of each module, participants are challenged to put what they have learned into practice in the workplace straight away, and then to reflect on the experience of doing so.

The first cohort of businesses in the Business Basics project began the STAR Manager programme in early 2020, so were part-way through the programme when the pandemic and the UK national lockdown came into effect in late March 2020. Despite concerns that

managers would be distracted from the programme by focusing on business survival, there were no drop-outs from the programme at this time, and a number of participants continued working on the programme while on furlough.

Second and third cohorts of SMEs were recruited into the trial during the first half of 2020, most of them during the period of the lockdown and severe disruption to business.

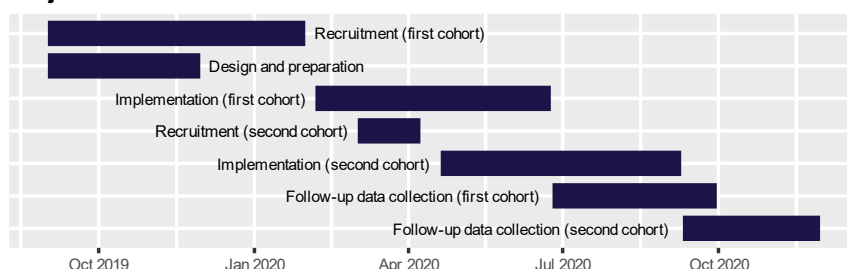
Since the STAR Manager programme was delivered online, implementation itself was not affected by the response to the pandemic.

Evaluation design

The project used a cluster-randomised controlled trial to assess the impact of the STAR Manager programme.

A total of 383 leaders and managers from 62 SMEs across England were recruited into the trial. 40 of the SMEs were allocated to the treatment group, with the nominated leaders and managers being given access to the STAR Manager programme. The remaining 22 SMEs were allocated to the control group, so were given access to the programme only after the follow up data collection was completed in late 2020. After being informed of when they were to be given access to the programme, the businesses were asked to pay a participation fee; 11 of the 62 businesses declined to pay the fee and so withdrew from the trial.

Project timeline



Each of the SMEs and each of the individual learners were asked to complete a baseline survey before randomisation and a follow-up survey after the end of the intervention. The analysis of impacts is based primarily on data from the 302 individuals from 49 businesses who completed the follow-up survey. This is a smaller sample size than the 1500 individuals from 150 businesses that had originally been envisaged, but it is sufficient to provide statistical power to detect moderate impacts from the intervention.

A potential threat to the validity of the results is that a higher proportion of businesses in the control group than in the treatment group withdrew from the trial when asked to pay the participation fee. As argued in the project's final report, it seems reasonable to assume that, on average, those SMEs that remained in the control group were more likely to be committed to the programme than those that remained in the treatment group, and so more likely to be convinced of the value of coaching. For this reason, the treatment/control differences derived from the survey data are, if anything, likely to be underestimates of the true difference.

An additional concern raised by the evaluation is that the cluster sizes (the number of individual programme participants per business) were highly variable, ranging from one to 38. However, the key finding of the evaluation is unchanged when the largest clusters are excluded from the analysis, providing confidence that this is a robust result.

The project report also considered changes in SME-level outcomes, including gross asset value, jobs created and staff turnover. Although there are positive trends in the data, the trial did not have sufficient statistical power to assess impact on these indicators definitively.

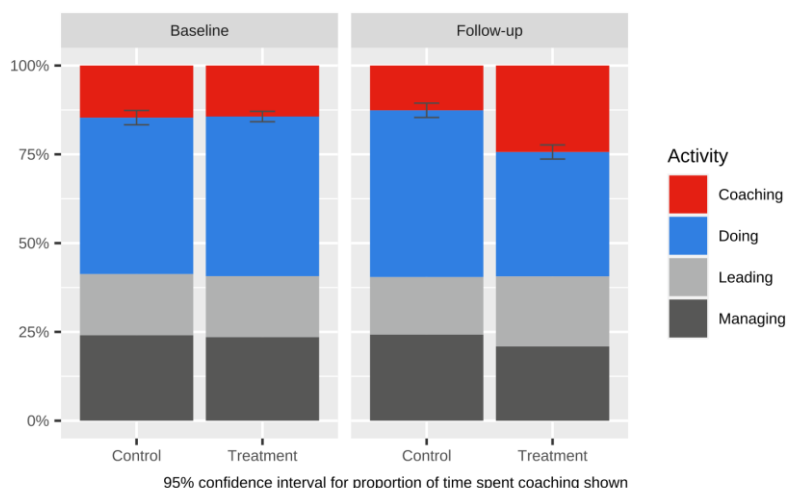
Impacts

As shown in Figure 2, SME managers who were given access to the STAR Manager programme made a large increase in the proportion of time they spend coaching, estimated at between 10 and 17 percentage points (with a mean estimate of 14 percentage points). This represents approximately a doubling of the proportion of time spent coaching, against a mean in the control group of 13%. The additional time spent coaching displaced time that managers were spending 'doing' work themselves.

One concern with this finding may be that it reflects participants reconsidering some of their existing activities as 'coaching' after having learned about the definition of coaching during the STAR Manager programme. However, participants were also asked the question about the proportion of their time spent coaching soon after they completed the first module of the programme, in which they were taught about the meaning of 'coaching' and 'managing'. At this stage there was no reported change in the time spent coaching; this suggests that the change observed in the final survey does reflect a real change in behaviour. In their responses to a separate survey question, programme participants were also much more likely than the control group to report that they had changed their management style during the 6-month period.

The trial also identified positive impacts on several secondary outcome measures. Participants' perceptions shifted away from regarding coaching as a remedial intervention to regarding it as developing staff by enabling them to draw on their own resources. There are indications of positive (though not statistically significant) increases in nine skill areas, including listening skills, using powerful questioning, demonstrating positive personal philosophies, and using an effective

Figure 2: Time allocation by SME managers, by activity



physiological and emotional state for coaching others. Feedback from learners about the value of the programme was also very positive.

Policy implications

This trial has demonstrated that SMEs managers who were given access to the STAR Manager programme approximately doubled the proportion of their time spent coaching others in the businesses, and correspondingly reduced the proportion of time they spend on day-to-day management. It seems likely that, over time, this adoption of coaching behaviours will have a beneficial effect on productivity in those businesses. As an online programme that does not require one-to-one human facilitation, the STAR Manager programme has the potential to be scaled at low cost.

Wider learning

Recruitment of SMEs

The original plan had been to recruit SMEs from the database of SMEs held by Coventry & Warwickshire Growth Hub. The

Growth Hub and LEPs featured the programme in newsletters and other mass communications, but in the event were reluctant to ask staff to promote the programme directly in conversations with SMEs.

Recruitment efforts were anyway disrupted by no-deal Brexit planning, the purdah period prior to the 2019 general election and the response to the COVID-19 pandemic.

In the end, most SMEs were recruited by cold-calling businesses from a list provided by a data broker. The project team believe that a ‘two-pronged’ approach – making contact by phone and email on the same day – was key to their success. Providing testimonials from previous participants appeared to be a powerful recruitment tool, as was emphasising what individuals would gain from the programme rather than focusing on the benefits to the business as a whole would.

Progression through training programme

The rates of participation and progression through the STAR Manager programme were higher than for some other online training programmes tested under Business Basics. The programmes consisted of 20 modules, intended to be completed at a rate of one per week. Seventy per cent of the treatment group reached module 4, and just over 25% completed all 20 modules by the end of the BBF project. Many of the participants continued to progress through the programme after that date, with more than a third of learners having completed all 20 modules by April 2021.

Cyber Well

Research question	Does the deployment of a cyber game with nudge learning increase the cyber and data knowledge resilience in SMEs? Does this style of teaching encourage attitudinal changes and increase productivity in SMEs related to cyber behaviours and certification in a more effective way than typical cyber ‘push-learning’ training?
Project lead	Bournemouth, Christchurch and Poole Council
Delivery partners	Dorset Cyber Alliance, LiMETOOLS Limited
Evaluator	John McAlaney, Bournemouth University
Grant amount	£223,000
Number of SMEs participating:	
Target	300
Recruited	67
Location	South West England
Business size	All SMEs
Business sector	All sectors
Barriers addressed	Cyber security risks, lack of technical skills.
Intervention	Self-guided online training on cyber security.
Evaluation design	RCT (as designed) Pre/post comparison with qualitative interviews (as implemented)
Outcome areas	Attitudes to and adoption of better cybersecurity practices.
Evidence of impact	Some indications of positive changes among businesses that received support; few indications of differences between the treatment and control groups.
Readiness for scaling	If the cost of delivery can be kept low, the programme can be cost-effective when rolled out at scale, even given low take-up rates.
Potential for further testing	Further evaluation during scaling would be valuable, though there is unlikely to be potential for an RCT. Experimentation could instead be used to test and adjust adaptations and enhancements to the core programme.
Further information	Trial registration

Rationale

The Cyber Well programme built on a series of pilot studies that identified that poor data management and cybersecurity risks pose a threat to SME productivity. Surveys of SMEs show that large amounts

of time and effort are spent reacting to threats and fixing problems, rather than dealing with risks proactively. Cyber Essentials accreditation is becoming a requirement in bidding for new business from larger institutions, but (as of 2019) is

only held by a third of SMEs. Despite the benefits, SME owners and managers often underestimate the risks and the potential benefits of improving their cybersecurity practices and gaining accreditation.

The project team observed that training courses on cybersecurity are typically delivered in a traditional format – with text-heavy presentation and a test at the end – that may not be conducive to retention of knowledge, nor persuasive enough to produce changes in behaviour. The team therefore sought to design a short training programme targeted at SMEs that applies insights from cognitive psychology (combining the use of memory, motivation, thinking, and reflection) to maximise knowledge retention and action. Video drama is used to enable a participant to learn by watching what others in their peer group do in a particular context. Spaced repetition is achieved by ‘nudging’ participants to carry out short activities between training sessions.

Intervention

The Cyber Well programme consisted of two core modules, each taking around one hour to complete. The second module was made available to participants 2 weeks after the first. A week after making each module available, a ‘nudge’ was sent to the participants to complete a further activity (taking roughly 15 minutes), to act as a refresher on what they had learned.

The training programme for the treatment group was based on a series of videos taking the format of a soap opera. The narrative featured several SME suppliers or clients of a large multinational corporation that has suffered a serious cyber-attack, exploring the risks to the businesses and how these can be mitigated. The content was delivered through an online interface

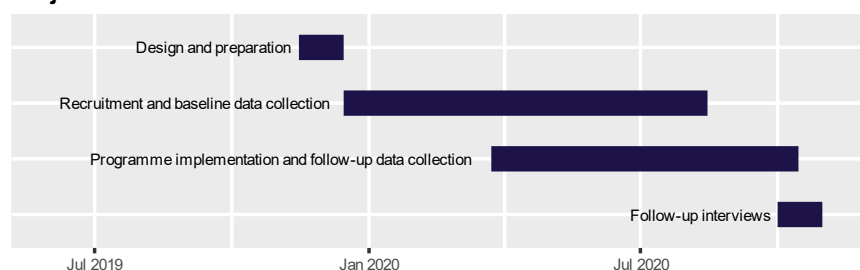
that also featured interactive quizzes and other activities aimed at improving learners’ retention. In contrast, the training programme for the control group was delivered in PowerPoint format; the same narrative structure was used as in the treatment group videos, but it was delivered in the form of comic strip storyboards, and the activities were less interactive. The textual content and the email notifications of modules and nudges were the same in the treatment and control versions.

Evaluation design

The project was designed as an RCT, with the treatment and control groups being given access to two different versions of the Cyber Well programme, as described above. All participants were required to carry out a baseline survey before participation in the course and were asked to complete follow-up surveys coming immediately after completion of the programme and again 2 months later.

166 individuals signed up for the programme, but only 67 completed the baseline survey and were randomised and given access to the Cyber Well programme. It is not known how many began using the Cyber Well training materials, but 38 of the 67 participants completed at least one of the modules or the ‘nudge’ exercises. Of these, 24 responded to the immediate post-training survey and 17 completed the 2-month follow-up. These numbers were judged to be too small to allow statistical analysis of outcomes to be carried out – either a comparison of the treatment and control groups or a pre/post comparison of

Project timeline



outcomes for the overall programme. For this reason, the quantitative data was supplemented by detailed qualitative interviews of 14 of the participants.

Impacts

While the number of respondents to the follow-up surveys does not allow for detailed statistical analysis, some general patterns can be observed. Those who completed the training increased their scores in the test of knowledge on cybersecurity, from an average of 8.5 out of 15 before the intervention to 10.3 out of 15 after the intervention. Most participants said that they now felt confident in answering questions about cyber security, in identifying phishing emails, and in where to obtain support if necessary. In the qualitative interviews, most participants said that they became more aware of cybersecurity risks as a result of the training, and have taken some steps to improve security – such as using multi-factor authentication for logins and adding passwords to personal devices. Fifteen SMEs are known to have gained Cyber Essentials accreditation after participating in the Cyber Well programme.

It is not clear from the data available whether the treatment had significantly greater impact than the version of the programme given to the control group. Some of the changes in attitudes observed in the surveys (particularly the willingness to seek external support) appear to be greater in the treatment group, and there was positive feedback about the level of interactivity on the platform from some of those in the treatment group who were interviewed. However, given the small numbers involved, there is considerable uncertainty about any treatment/control differences.

Policy implications

There are indications that the Cyber Well programme had a positive impact on

awareness and understanding of cybersecurity risks among those who participated in the training. The apparently low levels of demand for this type of training from SMEs is unfortunate, but if the programme were offered at sufficiently large scale, then it may be cost effective even with a low take-up rate.

The project has provided little evidence about the benefits of the video material and interactive elements that were provided to the treatment group. There remain good reasons to expect that these elements would increase participants' engagement with the material, so this would be worth testing again in future, whether that be in the context of cyber security or during online training for SMEs on other topics.

Wider learning

Recruitment of SMEs

Recruitment for the Cyber Well programme was more challenging than expected, even before the onset of the COVID-19 pandemic. A range of approaches was used to contact SMEs and promote participation in the Cyber Well programme, including distributing information through the networks of the council, LEPs and Growth Hubs, chambers of commerce, and the Dorset Cyber Alliance Business Forum, as well as promotion in the local press and radio and on social media. The most productive route was found to be sending emails from BCP Council's internal channels. Social media produced some sign-ups, but attending in-person networking events and cold calling businesses had little effect.

One approach that appears to have been effective was to offer businesses signing up the opportunity to enter a prize draw, to win a stay in a local hotel. The largest boost in sign-ups came after this prize was announced.

The project team expected that the large number of cyber-attacks seen after the widespread adoption of working from home in March 2020 would lead to increased demand for training on cybersecurity. Visits to the Cyber Well recruitment website peaked in April 2020, but this level of interest was not maintained. The need for SMEs to focus on crisis management and survival – combined with many staff being furloughed – appears to have crowded out time and attention that could have been devoted to this training programme.

The low take-up rate among businesses that were offered the chance to participate in this programme is consistent with a recent study from the Behavioural Insights Team in which businesses were offered free support on cyber security. That study found a very low response rate (of less than 1%) to the offer of a free security website scan. However, the response was higher when businesses were approached with a message encouraging them to think about the potential consequences of *not* taking action: ‘What would happen if your website was attacked?’⁷

Any future trial and intervention roll out would benefit from opening access to the training within supported SMEs. Only one participant per business was accepted onto the Cyber Well programme. Since most of the primary outcomes of the trial (retention of knowledge, attitudes, and engagement

with the course material) were being measured at an individual level, in principle multiple employees of a single SME could have been recruited. In order to avoid participants comparing experiences on the treatment and control arms, the random allocation to treatment or control could have been made at the SME level, in a similar way to the Notion project.

Training format

The programme was designed to allow a great deal of flexibility, with participants able to choose which topics they would like to learn about and which activities they would like to complete. However, the post-intervention interviews identified that some participants felt that the training sessions were overloaded with content, saying that there was too much repetition and that they took longer than an hour to complete. Participants generally preferred the 15-minute ‘nudge’ activities. This reinforces the need to invest in detailed piloting at the design stage.

Data collection burden

Participants who were interviewed at the end of the project reported some survey fatigue. As well as the baseline and two follow-up surveys, participants were asked for feedback at the end of each training session and the ‘nudge’ activities. This may have acted as a deterrent to progress through the training programme.

⁷ Bothen AL, ‘What would happen if your website was attacked?’ Behavioural Insights Team, 2021

Making Accountants Digital Enablers (MADE)

Research question	Does the facilitation of digital adoption in English SMEs by their accountants increase business productivity, and if so, how? (original research question) How do trusted advisers build relationship quality and adaptive capacity with their SME customers during a crisis? (revised research question)
Project lead	Northumbria University
Delivery partner	Sage (UK) Limited
Lead evaluator	Matt Sutherland, Northumbria University
Grant amount	£280,000
Number of SMEs participating:	
Target	1,950
Recruited	156
Location	England (nationwide)
Business size	All SMEs
Business sector	All sectors
Barriers addressed	Lack of trusted advice, lack of awareness/knowledge about benefits.
Intervention	Coaching accountants to support SME clients in digital adoption.
Evaluation design	RCT (as designed) Realist evaluation (as realised)
Outcome areas	Technology adoption
Evidence of impact	Little evidence: few of the accountants interviewed after the intervention had provided support to SME clients by that time.
Readiness for scaling	Evidence does not yet justify scaling.
Potential for further testing	The research findings support prior assumptions about the important connection for many SMEs with their accountant. Working with accountants remains a promising idea for testing, if reasonable numbers of accountants can be motivated to take on this additional role.
Further information	Trial registration

Rationale

The MADE programme is based on the premise that SMEs are more likely to make

productivity-enhancing improvements to their business if they are supported in doing so by a trusted intermediary. Given that the

majority of SMEs work with an external accountant, the programme proposed to partner with accountants in order to widen the types of support they are providing to their SME clients.

The project originally focused on training accountants to support SMEs in adopting new technologies. With the onset of the COVID-19 pandemic and low levels of recruitment to the original programme, the activities were refocused on researching how accountants could assist businesses in building adaptive capacity and responding to crises.

Intervention

The MADE programme was originally conceived as providing training for accountants on how to support their SME clients with adoption of digital technologies. The original intention of carrying out half-day training workshops had to be abandoned in March 2020, with the accountants instead given one-to-one coaching online. These sessions focused on how accountants could use the GROW coaching model in their interactions with clients (examining the goal, the reality, options, and a way forward), with the theme of the discussions being broadened from technology adoption specifically to building SMEs' adaptive capacity. Up to 3 coaching sessions were offered to accountants, though only small numbers took up the opportunity for the second and third sessions. The coaching sessions were complemented by an online portal with resources to use in interactions with SMEs.

Evaluation design

The project was designed as a cluster-randomised controlled trial. Accountants were to be randomly allocated to one of 3 treatment groups – each of which would receive training on promoting technology adoption among SMEs, at varying levels

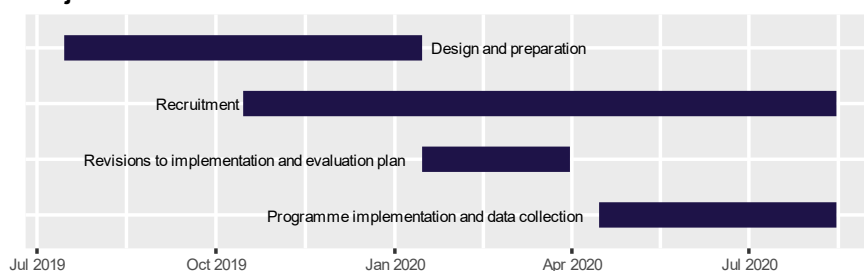
of intensity and breadth – or a control group that would receive a similar intervention later.

Since the numbers of both accountants and SMEs recruited were considerably smaller than expected, the RCT was redesigned to only test one form of training against the control. With the onset of COVID-19, the RCT was then abandoned before the project activities were launched.

The RCT was replaced with a realist evaluation, based on (a) pre-intervention surveys of SME characteristics and their level of 'digital savviness', and (b) qualitative information collected from the accountants in the course of the coaching sessions. Most of the information available comes from before the accountants provided support to the SMEs; only a small number of accountants participated in the second and third coaching sessions, and most of those had not yet carried out the conversations with SME clients that the project was encouraging. For this reason, the information available is more revealing about the nature of the relationship between accountants and their clients in general, rather than about the impact of the MADE programme specifically. The project team did not seek to interview the SMEs directly.

Recruitment of accountants proved to be much more difficult than expected, leading to delays in project timescales and the team having to explore alternative approaches. A total of 179 accountants originally registered their interest in the project, but most did not complete the application process. By the time the interventions were

Project timeline



launched in March 2020, many of those who were ready were now occupied with client enquiries about loan and job retention schemes, or were themselves furloughed. The intervention was therefore redesigned to focus on one-to-one coaching with the accountants.

Forty-two accountants participated in the initial coaching session held under the project, with 20 joining the second coaching session and 9 the third session. The main reasons for non-participation in the later sessions were again said to be the need to prioritise support to clients in the immediate response to the pandemic.

Following a realist approach, interview transcripts were coded by the researchers to identify combinations of contexts, mechanisms, and outcomes, with the aim of building an explanatory model for SMEs' adaptive capacity. Given that the accountants who participated in the coaching sessions were a highly self-selected group and no feedback was available from the SMEs, caution should be taken in generalising from these findings.

Impacts

Following the low recruitment and change in the research design, the project had little potential to provide causal evidence about the effects of the MADE project on the knowledge and behaviour of accountants. It appears that few of the accountants carried out coaching with their SME clients during the project period, so we should assume that the impact on SMEs was limited. However, several of the accountants who participated in the project were receptive to the idea of providing coaching to their clients and found the model discussed in the MADE project a useful structure. They saw that this could provide a framework for identifying opportunities that the accountant could help and help clients measure progress towards their goals for the business. (It is not clear how widely these

views are held among the accountants involved in the project, or among accountants more generally.)

Given that the reasons for not having carried out coaching with clients were related to the specific period chosen (dealing with the financial year end and the need to respond to the COVID-19 pandemic), it is possible that some of the accountants who received training under the project have applied the coaching practices they learned with SMEs after the end of the project.

Policy implications

This project has provided some indication that the idea of leveraging accountants' relationships with SMEs to provide advice and support may have potential. However, the project has not been able to demonstrate whether sufficiently large numbers of accountants are open to taking on this role, nor whether this would have significant impacts on their behaviours and hence on the businesses that they work with.

A future trial would be able to learn from the experience of this project so as to test these assumptions further. This would require tracking outcomes along the intervention logic to determine whether the intervention can improve the knowledge and capabilities of accountants, whether accountants change their approach to supporting SMEs, and the extent to which SMEs learn from these interactions and introduce positive changes.

Wider learning

Recruitment of SMEs

The project was implemented in collaboration with Sage, who were responsible for the recruitment of accountants. The implementers expected recruitment to be carried out in conjunction with professional bodies, in particular the Association of Chartered Certified

Accountants (ACCA). However, the professional bodies proved reluctant to participate in a research project, which limited the numbers of accountants who could be reached. The project participants were recruited from among Sage's clients.

Accountants as intermediaries

The coaching sessions with accountants doubled as interviews in which the researchers gained valuable insights about the nature of the relationship between SMEs and their accountants.

As noted above, some of the accountants that participated in the project were receptive to providing coaching to SME clients, moving from a reactive to a proactive approach. Some already use their status as trusted advisers to ask challenging questions of the business owner, which has allowed them to develop a closer relationship and build their reputation. This is more common in small accountancy practices, in which accountants have more regular contact with clients. More experienced accountants feel more confident in their ability to provide coaching but tend to spend less time interacting with clients.

The COVID-19 crisis has led SMEs to rely more on their accountants, and to contact them more often for advice. Some accountants have found themselves offering personal support and reassurance to clients. This has deepened the relationship and has motivated some accountants to learn about how to provide

coaching. One constraint is that SMEs are sometimes concerned about the cost of seeking advice from accountants: some accountants deal with this by offering a flat fee for their services.

On the other hand, some accountants included in the project were reluctant to take on coaching as an additional responsibility, seeing this as beyond their remit and beyond what clients expect of them. The project team's view is that, if the project were to be repeated, it should target mid-career accountants in medium-sized firms who may be more likely to be willing to broaden their horizons and engage in training and new activities.

Need for piloting and focus in trial design

The MADE project was designed as a large-scale research programme, with three different levels of intervention to be tested in a complicated RCT. Even before the outbreak of the COVID-19 crisis, it had become clear that this was proving too ambitious given the time and resources available. This experience reinforces the need both for piloting interventions and for keeping trials as simple and focused as possible. The difficulties in recruiting accountants and in motivating them to participate could have been identified in a smaller scale pilot, and approaches to overcome these barriers tested. This would then have allowed the project team to design the full study with a better understanding of the practical limitations and of what could be expected from the research.

Developing a management system to boost productivity via online and peer-to-peer learning among SMEs

Research question	Does peer-to-peer knowledge sharing and mentorship improve participants' intentions to adopt management practices, compared to those who only receive digital materials?
Project lead	University of Cambridge
Delivery partners	Behavioural Insights Team, Tech Nation
Evaluators	Stelios Kavadias, Jaideep Prabhu and Keivan Aghasi, University of Cambridge
Grant amount	£350,000
Number of SMEs participating:	
Target	700
Recruited	57
Location	England (nationwide)
Business size	SMEs with at least 15 employees
Business sector	All sectors
Barriers addressed	Lack of time, practical barriers to accessing training.
Intervention	Self-guided business training programme, with opportunity for interacting online with peers and a mentor.
Evaluation design	RCT (as designed) Qualitative evaluation (as implemented)
Outcome areas	Management practices
Evidence of impact	Little evidence about the impacts of the intervention.
Readiness for scaling	Not ready
Potential for further testing	If the weakness in implementation can be corrected and sufficient numbers of SMEs can be recruited, a further test would be possible.

Rationale

This project sought to address two practical barriers that prevent SME managers from engaging in training on management practices. Firstly, the rigid timetable of most training programmes makes it difficult for managers to participate fully, given that the

business places high and unpredictable demands on their time. Secondly, the need to travel to in-person training can be a deterrent, especially for those that are based far from locations where training takes place. The project tested the use of an online platform to provide training,

including asynchronous interaction with mentors and other participants.

Intervention

The intervention consisted of a 2-month digital training programme on management tools and practices, provided free of charge to SME managers. The programme was originally intended to be on general management tools and practices that have the potential to improve a business's productivity. With the onset of the COVID-19 pandemic, the training programme was refocused on enabling businesses adapt to the crisis and increase their resilience to future crises. In some cases, this meant finding strategies to ensure the survival of their business, deal with furloughing employees or switching to online working. Other businesses experienced a rapid increase in demand because of the crisis, so the support focused on enabling them to expand their operations and workforce.

Participants were provided with training material each week (both written and in the form of short videos), as well as the opportunity to interact online with a mentor and with other participants.

Evaluation design

The project was originally designed as a randomised controlled trial, testing the effectiveness of the mentoring and peer interaction on improving adoption of good management practices. However, the number of businesses that signed up to participate in the trial (57) was lower than anticipated, so the team determined that quantitative analysis of outcomes would not be possible. For that reason, the control group was abandoned, and all but one of the 10 groups of businesses enrolled in the project were given access to the mentoring and peer interaction, as well as to the videos and written materials.

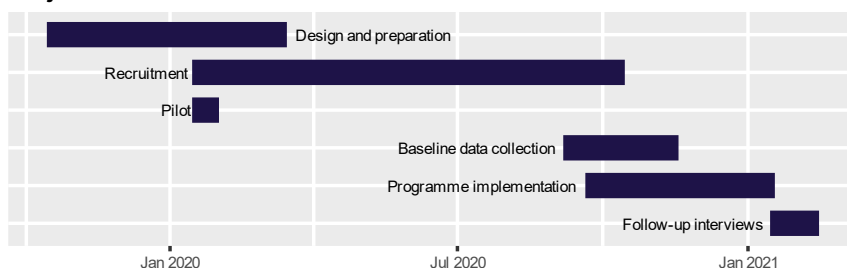
Baseline (pre-intervention) data was collected from businesses through a survey at the time of registration. Follow-up data collection consisted of a qualitative interview with a researcher. Only 14 of those who signed up for the trial agreed to be interviewed, of whom all but one had participated in the intervention.

A potential source of bias in the evaluation is that it was carried out by the same team who delivered the project. In particular, the lead researcher (who also carried out the qualitative interviews) also acted as the mentor to the first cohort of participants. However, the team's interest in this was primarily as a research project: they showed that they were prepared to critique the intervention, and do not appear to have been biased in their assessments of its effectiveness.

Impacts

The loss of the RCT design and the low rate of participation in the qualitative interviews mean that it was not possible to assess the impact of the mentorship and peer interaction, as envisaged in the research question. The qualitative interviews revealed some weaknesses in the implementation of the programme: the training platform could be accessed only via a smartphone and was seen as not being user-friendly, leading to engagement from participants falling rapidly after the first week or two of use. In addition, 3 of the 4 mentors engaged very little on the platform. Due to these weaknesses, the qualitative interviews did not produce evidence about the impact of the intervention, but instead

Project timeline



focused on what could be learned to improve implementation of projects like this in the future.

Policy implications

The researchers' overall conclusion from the programme is that asynchronous training can complement but not completely replace traditional training. However, given the weaknesses in the implementation of this project, this should not be treated as a strong conclusion: it is possible that an alternative implementation of asynchronous training could produce very different results.

The researchers identified 4 further insights to guide the implementation of future implementations of asynchronous training:

- Participants' motivation to engage in the training depends on the relevance to them of the topics covered.
- It is crucial that the platform itself functions effectively and efficiently for participants to spend time engaging with it.
- Peer groups will only function well when the participants have a similar 'status' (in terms of their position

within the business) and are from businesses of a similar size. For example, CEOs from medium-sized businesses did not feel that they had much to learn by interacting with middle managers from other businesses, or even with CEOs from smaller businesses.

- Making online peer interaction effective also requires observing 'social rituals' – specifically, for participants to introduce themselves to each other at the start of the programme.

Wider learning

Recruitment of SMEs

The project had little success in recruiting SMEs through social media or through newsletters sent by the Business School, Tech Nation or the Chartered Management Institute. Most of the trial participants were recruited through sending direct tailored emails to businesses. The researchers have had a more positive experience on another project in which a major bank invited their SME clients to participate – they would seek to use a channel like this in the future.

Evolution Invoice

Research question	How much more adoption of AI technology is observed in SMEs that receive behavioural support during a free introductory period, compared to SMEs that do not receive that support?
Project lead	Evolution Artificial Intelligence Limited
Evaluators	ALM Analytics & Consultancy Limited
Grant amount	£420,000
Number of SMEs participating:	
Target	1000
Recruited	1418 expressions of interest 472 registrations
Location	England (nationwide)
Business size	Up to 249 employees
Business sector	All sectors
Barriers addressed	Lack of awareness/understanding of potential benefits, perceived high cost of adoption.
Intervention	Use of email reminders to encourage usage of an invoice-processing system.
Evaluation design	RCT
Outcome areas	Technology adoption
Evidence of impact	No impact from the treatment on adoption or intensity of usage of Evolution Invoice. However, this appears to be primarily due to the availability of alternative products that reduced the scope for these interventions to deliver impact.
Readiness for scaling	Not ready: Evolution AI will focus on enterprise customers rather than on the SME market.
Potential for further testing	The question of whether behavioural approaches can be used to prompt adoption of digital technologies remains an important one to test in the future.
Further information	Trial registration , evaluation report

Rationale

This project experimented with how to encourage adoption by SMEs of an AI-based technology aimed at improving the efficiency of invoice processing. Invoice processing is seen to be a labour-intensive and error-prone process in many SMEs,

which leads to late payments and poor-quality financial management information. After carrying out preliminary research to understand SMEs' priorities, Evolution AI designed a trial that was intended to overcome two key barriers to adoption of invoice-processing technology: a lack of understanding of the potential benefits, and

a perception that the cost would be prohibitive.

Intervention

Evolution Invoice is a service which examines scans of invoices, uses AI to extract key information (about the payee, amount, due date and so on), and transfers the details to the business's accounting software. This technology had already been developed and was in use by larger corporate clients prior to this trial. Under this project, SMEs were provided with access to Evolution Invoice free of charge for up to 12 months. Any SME based in England was entitled to join the trial, although – to make sure that the trial was targeted at those with the potential to benefit – they were asked to confirm that invoice processing was an important burden for their business.

The project consisted of two phases. The first phase tested whether simple interventions informed by behavioural science could encourage SMEs to try out and become regular users of the Evolution Invoice system. The treatment group were sent weekly emails with reminders to use Evolution Invoice to upload invoices, whereas the control group received minimal contact from the company. Evolution AI planned to provide additional nudges to the treatment group – including sending email reminders according to the specific business's invoice processing schedule, providing a discussion forum for users to ask questions and interact with each other, and identifying industry champions to profile.

However, usage of the Evolution Invoice system never reached the critical mass that would allow these interventions to be carried out.

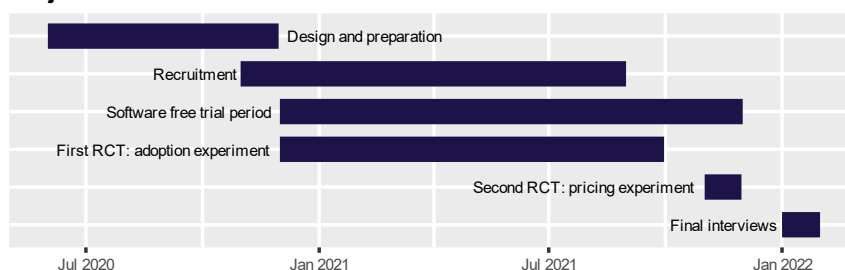
The second phase of the project was intended to test users' willingness to pay for continued access to the Evolution Invoice service after the free trial period.

Evaluation design

Two RCTs were designed, one for each of the two phases of the project. In the first phase, SMEs that had registered to use Evolution Invoice were randomly allocated either to a treatment group – who received frequent emails to encourage them to make use of the software and, under the original plan, would also have been subject to the other nudges – or to a control group, who received only a single email providing user documentation and inviting them to upload an invoice.⁸ The key outcome assessed in the trial was whether the SME became a regular user of Evolution Invoice by the end of the 10-month period over which the trial was carried out. No survey data was collected directly from SMEs.

The second phase of the project was an experiment on willingness to pay. SMEs that had become users of Evolution Invoice during the first phase were randomly allocated either to be given a further 6

Project timeline



⁸ In practice, randomisation was carried out at an earlier stage – the point at which businesses completed an initial sign-up form to show their interest in Evolution Invoice. However, the communications sent to the treatment and control groups did not differ until the point at which they had registered for use of the system.

months' use free of charge or were asked to pay (albeit at a 50% discount from the ticket price). Both groups were asked to provide their bank details as an indication of their commitment, although the first group would not be charged for another 6 months.

Qualitative interviews were carried out with some of those who had used Evolution Invoice, towards the end of the evaluation.

Impacts

A total of 1418 SMEs filled in an initial sign-up form, of which 472 (33%) completed the registration process to use Evolution Invoice. Most of these subsequently logged into the system, but only 176 (37% of the registered users) took practical steps to begin using it – such as by setting up a company or individual user account or by linking to their accounts system. Only 52 users (11% of the registered users) ever uploaded an invoice, and only 12 did so during more than one session. The threshold that was originally intended to designate adoption of the system for the purposes of this project – that is, uploading invoices at least twice, at least 30 days apart – was met by only 2 users.

The large drop-off in numbers between the expression of interest and registration stages appears to be a consequence of an unexpected delay in the launch of the trial. Shortly before the planned launch date, the accounting software Xero (which is used by many SMEs) changed their systems for interacting with third-party software, which meant that a critical part of the Evolution Invoice system had to be redesigned. Businesses that signed up in October and November 2020 were therefore placed on a waiting list before Evolution Invoice was opened up to them in December. Most (80%) of those that were asked to wait never returned to register for Evolution Invoice.

Among the 472 businesses that registered for Evolution Invoice, there is no indication

of any difference between the treatment and control groups in the proportions that went on to use the system. This appears to be because potential users were able to assess whether Evolution Invoice would be appropriate for them based on the emails they had received and the information available at the point of registration. By the time the treatment group started receiving additional email nudges in the weeks following registration, most of the potential users seem to have already decided whether or not they would try it out, so there was little potential for the treatment to have an effect.

Given that rates of adoption of Evolution Invoice were so low in the first stage, there was also little potential to find a result from the pricing experiment conducted in the second stage. Only one user provided bank details so that they could continue using Evolution Invoice after the initial 12-month period.

Feedback from users during the qualitative interviews revealed that this trial coincided with rapid expansion in the availability of invoice-processing services that compete with Evolution Invoice. In particular, Xero and Sage both acquired invoice-processing services and integrated them with their packages, providing a more convenient and – according to several users – more effective solution to the same problem. For this reason, it is not surprising that Evolution Invoice saw little demand from SMEs.

Policy implications

This was a rare example of a trial run solely by a commercial business to test their own product innovation that was also constructed in a way that would help answer a broader question of interest to policymakers. For the business, this was an opportunity to test the reaction of SMEs to this specific innovation, whether additional support would be worthwhile to encourage

adoption and to scale the benefits provided. Policymakers would then have been able to apply the findings to other technologies and contexts.

The trial was ultimately not successful in answering the core research question, but has nevertheless highlighted some important lessons. In particular, this experience has reinforced the observation made by Be the Business (2020) that technology solutions that work well in large firms may not be ideally suited to the SME market: a large company may be able to invest in a single tool like Evolution Invoice that addresses a single specific pain point (because it adds up to a large cost across the business), whereas an SME is more likely to seek an integrated solution that addresses several needs simultaneously. Related to this, it is crucial to be aware that the market can shift rapidly – as with the integration of invoice-reading functions into existing accounting software – in ways that can have major consequences for demand for a product or an intervention. Following the experience in this project, Evolution AI has decided to refocus its efforts on serving enterprise customers rather than SMEs.

The question of the extent to which email reminders and other behavioural nudges can be used to promote adoption of new technologies – and how best to do this – remains an important one to address in future trials.

Wider learning

Recruitment of SMEs

Evolution AI tried approaching SMEs through advertising on social media and online searches, as well as direct contacts by phone or email. 85% of the SMEs that expressed an interest in the trial found out about it through Facebook adverts, either after having viewed an advert themselves or another user having shared an advert with them. The cost per EOI for this Facebook advertising was around £15. In

contrast, advertising on LinkedIn produced very few EOIs and at much higher cost, apparently because it is a highly competitive forum for business-to-business marketing. Paying for adverts against relevant Google searches also had some success, at a cost per EOI of £24.

The project team had much less success with making direct contact with potential users of the software. Cold calling 140 SMEs did not produce any leads, so this activity was abandoned. There was also very little response to bulk emails, even if they were personalised to the recipient's job title and/or business sector. Even emails to businesses that had been referred by others that had already signed up had only a 1% conversion rate to EOIs.

Self-selection into the trial

Although the registration website made it clear that Evolution Invoice was aimed at businesses for which invoice processing was a particular pain point, it appears that many of those that signed up were sole traders with few outgoings, for whom the Evolution Invoice software would not have been appropriate. In this trial it was of little consequence that unsuitable businesses signed up, since there was no marginal cost to sending them automated emails. However, it is important to be aware for other business-support offerings that are offered free of charge that SMEs cannot necessarily be expected to self-select into packages of support that are appropriate for them. This reinforces the need for targeting recruitment efforts to suitable businesses, and/or finding ways to filter out those that are unsuitable at the sign-up stage. Policymakers will not always know whether businesses that drop out later in the process made the right decision in doing so (because they were unlikely to benefit from the intervention), or whether they could have benefited if they had continued.

Identification of businesses

In order to reduce friction in the initial sign-up process that could deter businesses from signing up, they were not requested to provide company identifiers. However, Evolution AI was subsequently able to obtain identifiers for 60% of the 1418 participants in the trial, by matching the

business names or email domains provided at sign-up against the Companies House database and with manual searching. Work by Nesta and the Innovation Growth Lab has also revealed that it is possible to use modern data-science approaches to generate data on other business characteristics, such as the sector in which the business is operating.⁹

⁹ See, for example, Mateos-Garcia J and Richardson G (2022), [‘A bottom up industrial taxonomy for the UK: Refinements and an application’](#) Economic Statistics Centre of Excellence discussion paper number 2022-29

Techknowledgey Transfer

Research question	For SMEs that do not extensively use existing technologies in key business and administrative functions, does the delivery of a dedicated student project aimed at developing and embedding specific technology usage improve adoption rates when compared to less interactive levels of support?
Project lead	Petroc
Delivery partners	Applegate Marketplace, Maynard Johns Chartered Accountants, Lineal Software Solutions, Barr Media
Evaluators	Kada Research Limited
Grant amount	£385,000
Number of SMEs participating:	
Target	200
Recruited	67
Location	North Devon and Torridge districts
Business size	Up to 249 employees
Business sector	All sectors
Barriers addressed	Lack of management capacity, lack of knowledge/awareness of technologies, resource constraints, lack of technical skills, lack of confidence in ability to implement.
Interventions	Workshops on specific technologies; further education students supporting SMEs with a technology-focused project.
Evaluation design	RCT (as designed) Pre/post comparison with qualitative assessment (as implemented)
Outcome areas	Technology adoption
Evidence of impact	Positive feedback from a small number of participants, and indications of positive impact in pre/post comparison
Readiness for scaling	Ready for testing at larger scale, given the promising findings from this project.
Potential for further testing	High potential for further testing of impacts both on SMEs and on the students themselves.
Further information	Trial registration , evaluation report

Rationale

Knowledge Transfer Partnerships is a longstanding programme (managed by Innovate UK KTN) in which recent university graduates or postgraduates work

together with a business and academic researchers on an important project for that business. The further education (FE) college Petroc sought to extend this idea to the FE sector (that is, post-secondary

studies that are not taken as part of an undergraduate or graduate degree). Under this project, further education students were to work with SMEs to carry out technology adoption projects, with support from college staff and delivery partners.

This project targeted the districts of North Devon and Torridge, rural areas heavily dependent on agriculture and tourism. Petroc's engagement with local businesses identified that there are large numbers of micro and small businesses with low usage of digital technologies. Lack of confidence in the use of technology and lack of relevant skills were seen to be an important barrier to adoption among business owners, as were lack of time and resources to devote to investing in technology. Engaging with students – who tend to be more comfortable with digital technology – would address the lack of confidence and skills, while also dedicating their time to the project. Of course, this would also be valuable work experience for the students themselves.

Further education colleges have often been seen solely as education providers. From a programme perspective, this was seen as a valuable opportunity to support an FE college to deliver business support. There has been wider policy interest in exploring an expanded role for FE colleges in supporting business innovation.¹⁰

Intervention

On joining the Techknowledge Transfer project, a member of Petroc staff carried out a diagnostic interview, using a standard questionnaire to assess the businesses' current use of technology and its needs.

Businesses were then invited to participate in one or two 'masterclasses', online workshops of approximately 2 hours' duration, each covering a specific area of technology. The masterclasses covered themes such as social media marketing, use of data analysis in marketing or in improving website performance, digital accounting systems and cyber-security.

On completion of at least one masterclass, some of the SMEs were then invited to participate in the main Techknowledge Transfer intervention and receive a student placement. Students were recruited from administration, accountancy, and business-related courses at Petroc and were selected through an application and interview process. A mentor from the college or one of the delivery partners was allocated to each student. The SME, student and mentor together agreed on the objectives, plan, and timetable for the placement. Students met together with the mentor regularly to review progress during the period of the placement. As a consequence of the COVID-19 pandemic, most of the interaction between students and businesses took place online. Placements typically lasted for 12 weeks, with a time commitment from the student of 30 to 40 hours. Unlike in Knowledge Transfer Partnerships, businesses did not pay for the student's time.

Project timeline



¹⁰ See Johnson D and Vorley T (2021) ['Further education colleges as engines of innovation? A rethink'](#) UK Research and Innovation, and Vorley T and others (2021) ['Rethinking the role of further education colleges in innovation ecosystems'](#) Innovation Caucus

Evaluation design

This project was designed as an RCT. All SMEs in the trial would be required to participate in the diagnostic process and in one or two masterclasses; approximately half the businesses were then randomly selected to be allocated a student placement.¹¹ The remainder would function as the control group, and would not be offered any further support.

Three primary outcome measures were examined: the actual adoption of specific technologies within the business, any steps towards adoption taken by the business, and the time and resources invested in adoption. Baseline data collection was incorporated into the initial diagnostic interview carried out by Petroc staff, with a follow-up survey to be conducted by the evaluators several months later.

The project originally intended to recruit 200 businesses. However, recruitment proved more difficult than expected, and only 67 businesses signed up for the trial. Of these, 49 attended at least one masterclass. The project team and evaluators recognised that this was too small a number to proceed with the RCT, and so switched to carrying out a pre/post evaluation. Following this, the opportunity to receive a student placement was opened up to some of those that had originally been allocated to the control group.

The evaluators carried out a final telephone survey, reaching 36 of the 67 participant SMEs. In addition to answering questions to measure their progress against the key outcome measures, 9 of the businesses also responded to more detailed qualitative questions about their experience with the

project, and 5 went on to have a more in-depth interview with the evaluators.¹²

Impacts

Feedback received from the 9 businesses that responded to the qualitative questions in the final interviews was generally very positive. Despite disappointing attendance at the masterclasses, they were seen by participants as valuable both in building confidence and pointing to practical actions that participants could take. (It should be noted that there may be some response bias in these findings: the businesses that had particularly positive experiences with the project may have been more willing to talk about it during the final interviews.)

In total, 33 of the 67 SMEs that were recruited for the trial received a student placement, including 8 of the 9 that provided detailed feedback during the final interviews. Again, the interviewees were mostly positive about the experience. They were able to point to specific impacts that the students had had on the business – mostly relating to establishing or improving their social media presence or introducing online tools for interacting with clients – and some also mentioned that the students had helped them to overcome a lack of self-confidence or lack of understanding about digital tools. The added value of the mentor in guiding the student's work was also highlighted in these interviews. Only 2 of the 9 businesses that responded to these questions had less positive experiences, in one case with a student who was not committed to the project, and in another case where the business owner felt that they were helping the student to learn about technology, rather than the other way around.

¹¹ For practical reasons the random allocation was in fact carried out at an earlier stage, but the results were not communicated to businesses until they had completed at least one masterclass.

¹² The evaluators also recruited a sample of SMEs that were not engaged in the project, intending that

these would act as a quasi-experimental comparison group to assess the impact of the project interventions as a whole (including the masterclasses). This approach was later dropped, and the final survey was not carried out with this group.

Nearly a third of the businesses that were offered the opportunity for a student placement declined. The high rate of refusals was unexpected by the implementation team, and was attributed by businesses mainly to workload pressures, particularly at a time when the economy was reopening from COVID-19-related lockdowns. Feedback also suggested that providing businesses with more information in advance about what was expected of them and the role of the student would be helpful.

There were substantial increases between the baseline and final survey in the adoption of many forms of digital technology and related practices, among the 36 businesses that responded to the final survey. Given that this was a period of several months, and that the economic context was changing rapidly at the time (with reopening after COVID-19-related lockdowns), these changes cannot be attributed exclusively to the impacts of the project. The clearest case in which such an attribution does seem justified is in the proportion of businesses having a social media marketing strategy: this increased from 22% at baseline to 75% in the final survey. The majority of respondents also said that they had taken actions as a result of the support received under this project: 75% reported having browsed for or considered technology options, and 44% said that they had integrated a new technology into their business. Another positive indication is a large drop in the number of businesses citing lack of confidence or lack of skills as barriers to implementing technology solutions between the two surveys. Again, there is potential for response bias in these responses, but they do at least suggest that a significant number of participants

experienced a positive impact from the project.

Policy implications

The pandemic undoubtedly made recruitment and delivery of this project much more difficult than expected. However, despite the lower-than-expected levels of recruitment and the reluctance of some participants to accept a student placement, the experience of the SMEs that took part was generally very positive. The survey results also suggest that the intervention was successful in building confidence in the use of technology among SME owners and led to practical action being taken towards adoption and/or improvements in the use of technology (particularly social media). This project should therefore be seen as a promising pilot of the Techknowledge Transfer approach. Petroc has since used the learning generated from this project to launch a similar initiative, supported by the UK government's Community Renewal Fund.

A recent report by the Innovation Caucus has highlighted the role that further education colleges can play in promoting innovation and productivity in their local areas.¹³ The approach adopted in this project provides a very promising approach to this, and there is clear potential for this to be applied in other colleges. A scale-up to additional colleges could be used as an opportunity for a larger-scale experimental study of the effectiveness of the approach, examining outcomes both for the SMEs supported and for the students themselves.

Wider learning

Recruitment of SMEs

Petroc used a variety of approaches to recruit businesses to the project, including a

¹³ Vorley T and others (2021) '[Rethinking the role of further education colleges in innovation ecosystems](#)' Innovation Caucus

social-media campaign, presenting at online and in-person networking events and business group meetings, visiting businesses with flyers, and hosting a breakfast event. Direct approaches from Petroc staff were found to be the most productive route, although significant numbers of participants were also recruited through business networks and through word of mouth.

Creating capacity

This project highlights the potential for a mutually beneficial connection between businesses and education providers. A lack of time and a focus on immediate issues rather than long-term gains are some of the major barriers to innovation amongst SMEs. For this project students were seen as helping to build the capacity and commitment to change within the SMEs – an approach that has proven successful in other contexts and could be explored further.

Manufacturing Connect Lancashire

Research question	To what extent does introducing peer-to-peer support within the 'Advanced Sprint Process' increase intention to adopt business technologies among SME manufacturing businesses in North West England (in the maturity range 3 to 15 years), over and above the level generated by standard delivery?
Project lead	Edge Hill University
Delivery partners	Advanced Manufacturing Research Centre, University of Sheffield
Evaluators	Lawrence Green, Qi Cao and Sabaa Jahangir, Manchester Metropolitan University
Grant amount	£385,000
Number of SMEs participating:	
Target	160
Recruited	109
Location	North West England
Business size	Up to 249 employees
Business sector	Manufacturing
Barriers addressed	Lack of awareness/knowledge of potential benefits, perceived high cost, risk aversion, lack of support in implementation.
Interventions	Facilitated in-person workshops with peer interaction, compared to provision of self-guided materials.
Evaluation design	RCT (on impact of peer-to-peer element) Pre/post comparison and qualitative assessment (for overall impact of intervention)
Outcome areas	Technology adoption
Evidence of impact	Positive feedback from the majority of participants and indications of impact on actual adoption decisions. Indications that the peer-to-peer element encouraged completion of the programme.
Readiness for scaling	Ready for wider rollout, dependent on their being sufficient demand from potential participants
Potential for further testing	The original research question has not been clearly answered. Wider rollout could incorporate further experiments on this point or to optimise other features of programme delivery.
Further information	Trial registration

Rationale

This project was designed to address low take-up of digital technologies such as enterprise resource planning (ERP) and customer relationship management (CRM) systems by manufacturing SMEs in the North West of England. The project partners see several factors as leading to low rates of take-up, including lack of awareness of the technologies, scepticism about the potential benefits, concerns about disruption to the business during implementation, and a lack of support available for implementation.

To address these barriers, Edge Hill University adapted its existing Advanced Sprint Process, which had been developed while working with manufacturing SMEs over the previous several years. A key element of the programme is seen to be the use of peer-to-peer interaction during delivery, allowing participants to benefit from each other's experience and from that of similar firms that have already been through the adoption journey. However, delivering this aspect of the intervention takes significant investment of time and resources from both organisers and participants. Under this project, the project team sought to validate their hypothesis that this peer-to-peer element has a significant positive impact on outcomes from the programme.

Intervention

The Manufacturing Connect Lancashire (MC_L) programme is designed as a 3-stage intervention, delivered over several weeks. The intervention involves:

- Business profiling, an interview with one of the project delivery team in which participants are asked a series of diagnostic questions about their current use of

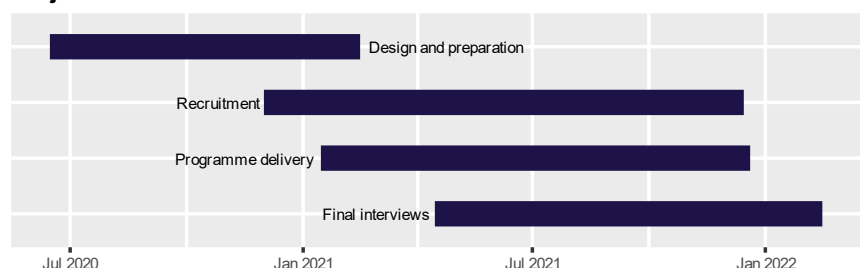
technologies, their awareness and knowledge of productivity-enhancing technologies, and the barriers they face in adoption.

- 'Connect to Grow', a module which introduces participants to productivity-enhancing technologies and discusses the potential benefits.
- 'Growth Demonstrator', a module which focuses on setting out a pathway towards implementation of the relevant technologies.

This trial tested two alternative approaches to delivering the Connect to Grow and Growth Demonstrator stages of this programme. The treatment group was invited to participate in two interactive online workshops, each lasting approximately two hours. An important emphasis of these workshops was to provide an opportunity for discussion and exchange of experiences between participants, advisers, technology suppliers and SMEs that already use the technologies being discussed. Participants were consulted on the material covered in the sessions, ensuring that the content reflected their priorities.

In contrast, the control group received the materials for the Connect to Grow and Growth Demonstrator stages through an online interface, which incorporated written materials, presentations, and videos. The content of this material was the same as that covered in the workshops with the treatment group. The control group were able to decide when and how to engage with these resources, but they had no

Project timeline



opportunity to discuss or ask questions of their peers or others.

It is important to note that, due to the difference in delivery modalities, the impact being tested in this trial is not of peer interaction alone. Rather, the comparison is between being offered the chance to participate in the live sessions – which incorporated facilitated delivery of the material and time for questions to the advisers and other experts as well as discussion between peers – against being provided the materials for self-guided use only.

Evaluation design

Over the course of the project, SMEs were recruited into one of 7 cohorts. Within each cohort, participants were randomly allocated to either the treatment group or the control group.¹⁴

Against the original target of 160 SMEs, a total of 109 were recruited into the programme. Of these, 51 were allocated to the treatment group and 58 to the control group. This sample size implied that the minimum detectable effect size from the evaluation (with 80% confidence) was approximately 0.5 of a standard deviation on each of the outcome measures, a moderately large effect. With an observed completion rate in the control group of 45%, this implied that the completion rate in the treatment group would have to be approximately 71% for the evaluation to be confident of detecting it.

¹⁴ In the first cohort, recruitment staff were aware of which treatment group each business would be allocated to before they had completed the registration process. While staff were careful not to reveal this to the businesses, it is possible that this may have resulted in some difference between the treatment and control groups in which businesses ended up being recruited into the programme. From the second cohort onwards, the process was changed to blind the recruitment staff to treatment allocation until after registration had been completed.

Participants were surveyed at the time of registering for the programme about their intention to adopt new technologies (the primary outcome measure), as well as their level of confidence in adopting and their proposed timescale for adoption. These survey questions were repeated after each of the 3 stages of the programme, though only among those who had chosen to participate in each of the respective stages.

The original plan was to repeat the survey of all project participants after the end of the intervention. However, because recruitment for the trial did not meet the original targets, it was recognised that the potential for quantitative outcome analysis of outcomes would be limited. Instead, the evaluators carried out qualitative interviews with the project participants, 2 to 3 months after the end of the intervention. Just under half of the trial participants (53 of the 109) agreed to participate in these interviews, including several who did not complete the programme.¹⁵

An important secondary research questions for the trial was the effect of the treatment on progression through the MC_L process. Since data was available on which participants had taken part in the Connect to Grow and Growth Demonstrator stages, analysis of this outcome does not rely on the survey data.

Impacts

65% of the SMEs that registered for the trial completed the Connect to Grow stage, and 50% went on to complete the Growth Demonstrator stage. The proportion

Due to the small number of businesses involved and the low likelihood of this having affected recruitment decisions, this factor is not thought to be a major source of bias in the results.

¹⁵ The evaluators test that participation in the final interview is not statistically significantly predicted by treatment status, nor by the baseline turnover or business size. However, it is possible that there are important differences between those in the treatment and control groups who took part in the final interview in terms of unobservable characteristics.

completing the Growth Demonstrator is notably higher in the treatment group (57%) than in the control group (45%). This difference is not statistically significant at conventional levels (the confidence interval for the difference between the two groups ranges from -7 to +31 percentage points). However, bearing in mind the small sample size in this trial, this provides at least some indication that the treatment was successful in encouraging participants to complete the programme.

Among those who did complete the programme, their level of confidence in adopting technology clearly increased over time, by a sizable 13 percentage points between the baseline survey and the Growth Demonstrator stage. Given the relatively short timelines between the 4 rounds of surveying, it seems reasonable to assume that much of this change is a result of participating in the project rather than of other contextual factors. By the Growth Demonstrator stage, participants also anticipated adopting technology about one month sooner than they had done at baseline. However, on average their self-assessed likelihood of adopting actually decreased. The evaluators suggest that this may be a result of participants becoming more aware of the barriers to adoption and being able to give a more accurate estimate of their likelihood of adopting.

The final qualitative interviews revealed that the majority of the MC_L participants had well-developed intentions to adopt new technologies. 13 of the 53 interviewees had either adopted a new technology already or were well advanced in the process of doing so. Of these, more than half said that MC_L had been a major driver of that decision, and the remainder also said that the programme had a significant impact.

Participants commented that the programme had helped them in setting out a business case for adoption, for building connections with vendors or other support organisations, and for highlighting sources of funding. At least 3 of the participants went on to apply for Made Smarter funding.

The evaluation did not produce clear evidence about the impact of the treatment itself on intentions to adopt. From the transcripts of the interviews, the lead evaluator assigned each of the participant a score on their intention to adopt, on a scale from 1 to 5. The treatment group scored slightly more positively, with an average of 3.8 points compared to 3.4 among the control group.¹⁶ However, the businesses that reported that MC_L had been a major driver towards adoption were split equally between the treatment and control group.

Participants' reported satisfaction with the programme was also similar between the treatment and control groups. Indeed, even those in the control group commented on the high quality of the programme materials and the value of the videos in presenting real-world case studies of adoption. On the other hand, the treatment group cited the peer-to-peer element as one of the most valuable elements of the programme, and the delivery team responded by providing additional networking time in some cohorts. Many of the control group participants in the final interviews suggested (unprompted) that having an opportunity for discussion with peers or vendors would bring additional value to the programme.

Policy implications

The MC_L programme was very well received by the majority of participants. Participants reported having gained in confidence in their capacity to adopt new

¹⁶ There is potential for bias in this comparison, principally the participation rate in the final interviews was among the treatment group was higher than among the control group.

technologies, and several cited the programme as a key driver of their decisions to move forward with adoption. While this is not experimental evidence of impact, it is reasonably convincing, and provides the basis for a wider rollout of the programme. Such a rollout should incorporate the learning from this project, and ideally include a robust evaluation design to provide stronger evidence about the programme's overall effectiveness.

A key consideration is whether the level of demand from SMEs will constrain any scale up. The UK manufacturing sector was facing particularly severe challenges at the time that this project was implemented (including the constraints to in-person working and staff absences caused by the COVID-19 pandemic, as well as supply-chain disruptions), which exacerbated the difficulty of recruiting businesses to participate. One positive sign is that recruitment was less challenging in the later cohorts – once the pandemic restrictions had been eased – than earlier in the project. It is also possible that those who have had a positive experience with the programme may spread the word within their networks and so generate interest from other businesses. In any case, there seems high potential for the MC_L programme to be expanded to manufacturing SMEs in other regions of the country, beyond the North West.

The evidence about the impact of the facilitated workshops and peer-to-peer interaction on the effectiveness of the programme is more equivocal. It is likely that these elements played a role in encouraging more participants to complete the programme, though this cannot be stated with high confidence. It is clear that even the control intervention was highly valued by participants. Nevertheless, the fact that the peer-to-peer element was seen by participants as particularly valuable and that the same idea was proposed by many

of the control participants should be taken seriously. We would encourage the partners to continue experimenting with the optimal balance between facilitated and non-facilitated delivery in future iterations of the programme.

Wider learning

Recruitment of SMEs

Since this project was targeting a specific business profile (manufacturing SMEs based in the North West of England), the project team started with a finite list of known eligible businesses. Recruitment was largely based on a direct, personalised approach with businesses from these lists. An alternative approach, spreading messages about the project through partners and business networks, was found to be much less effective, and was later dropped in favour of the direct approach (the higher marginal cost of each contact being offset by the improved conversion rate). The team noted that a key driver of success in the recruitment process was for the recruiter to identify from their discussion with the business a specific issue that the business was dealing with that could be solved through better use of technology. This meant that the participants were motivated by clear objectives, rather than relying on the more abstract concept of increasing long-term productivity.

The design of the RCT used in this project added some additional challenges. Participants noted that the description of the programme they were given at the recruitment stage was too vague. This was a consequence of not being able to give participants information in advance about whether they would be invited to join the workshops or would follow the self-guided route. Approaches to this problem are discussed in Section 5 of the main report.

Survey fatigue

The most common criticism made by participants in the final interviews was that the surveys were repeated at each stage of the programme. The data collected in the Business Profiling and Connect to Grow stages was used to determine the most appropriate content for the following stage, but otherwise the data was used primarily for monitoring changes over time. (It should

be noted that this was not required by the RCT design, which ideally would have been based on a comparison of the baseline data with that from a final survey of all the trial participants, rather than only those who reached the later stages.) The project team have since made plans to streamline data collection for future implementations of the programme.

Evolve Digital

Research question	For small businesses that do not employ more than two productivity-enhancing digital technologies, does providing them with 42 hours of facilitated peer-based learning generate greater intention to adopt than solely providing access to online materials for self-guided learning?
Project lead	Start and Grow UK
Delivery partners	Lancaster University Management School, Business West, TEDCO, NBV, Business South
Evaluators	Halima Jibril and Stephen Roper, Enterprise Research Centre, and Mona Mensmann, University of Cologne
Grant amount	£400,000
Number of SMEs participating:	
Target	280
Recruited	199 (plus 14 who participated in the programme outside the RCT)
Location	England (nationwide)
Business size	Micro and small businesses (1 to 49 employees)
Business sector	All sectors
Barriers addressed	Lack of technical skills, complexity of implementation, lack of confidence in ability to implement.
Interventions	Facilitated online workshops with peer interaction, compared to provision of self-guided materials.
Evaluation design	RCT (a complementary quasi-experimental study was carried out, but is not analysed in the evaluation report)
Outcome areas	Technology adoption
Evidence of impact	Good evidence of positive impact on the primary outcome measures, technology self-efficacy and intentions to make use of digital technologies, as well as on some secondary measures.
Readiness for scaling	Ready for wider implementation, perhaps as a precursor to programmes that provide practical support in selecting and adopting new technologies.
Potential for further testing	High potential to use a scale-up to test the longer-term impacts (including on digital adoption itself) and to optimise delivery.
Further information	Trial registration , evaluation report , summary of findings

Rationale

This project involved applying techniques developed by Lancaster University

Management School (LUMS) in supporting leadership development among manufacturing and engineering SMEs to

smaller, family-run businesses. LUMS's leadership-learning model involves integrating a variety of learning environments into a single programme, including workshops with expert speakers, opportunities for discussion and reflection with peers, and design sprints. The results of programmes such as these suggested that such a programme run over several months would enable leaders of small businesses to feel more informed about digital technologies and more confident in making investments and leading implementation.

Intervention

Evolve Digital was aimed at small family-run businesses with low current levels of digital adoption. The programme involved a series of 7 workshops, run over 11 weeks with a fixed cohort of participants. The workshops included presentations, expert speakers, small group discussions, and mini-design sprints. The whole programme was designed to maximise the opportunity for interaction between participants on the subjects discussed. Although the aim was to promote digital adoption, the programme encouraged participants to approach this from a perspective of the business as a whole, with discussion and reflection on business strategy and leadership more broadly. There were 42 hours of contact time in total.

Based on experience from LUMS's existing programmes, Evolve Digital as originally conceived would have launched with a 2-day residential event for each cohort, enabling the participants to get to know each other and form a good basis for interaction throughout the programme.

With the outbreak of the COVID-19 pandemic, implementation moved fully online. The implementers were concerned that this would reduce the value of the peer interaction throughout the programme. On the other hand, eliminating the need for participants to travel to a central location for in-person sessions may have opened up participation to a wider range of businesses.

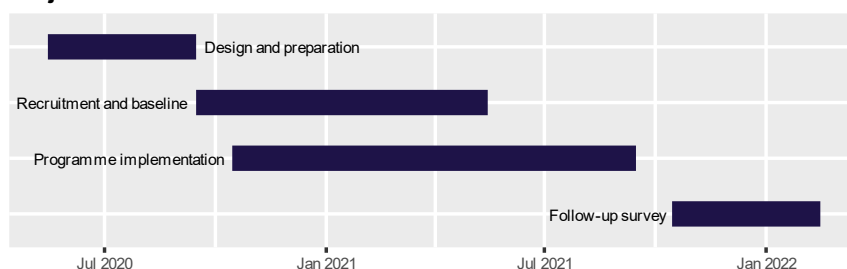
Learning materials (including videos and quizzes) to support the sessions were made available on an online platform. The control group also had access to these materials but did not participate in the online sessions or interact with facilitators.

Evaluation design

This project was designed as an RCT, with participants being randomly assigned either to participate in the full Evolve Digital programme or to the control group.

Anticipating that most businesses would not reach the point of actual adoption of new technologies during the lifetime of the trial, the evaluators instead focused on measuring changes in psychological factors that may make future adoption more likely. The Technology Acceptance Model (see Figure 3),¹⁷ which has been shown to be a good model of adoption decisions in various settings, was used to identify the outcome measures of interest. Two primary outcome measures were selected: technology use self-efficacy (a measure of individuals' confidence in their ability to make use of technology) and intentions to adopt digital

Project timeline



¹⁷ Davis FD and others (1989) [‘User acceptance of computer technology: A comparison of two theoretical models’](#) Management Science: volume 35, issue 8, pages 982-1003

technologies in the following 6 months. Trial participants were surveyed at baseline about these and other outcomes identified from the Technology Acceptance Model (Figure 3), with the surveys being repeated 6 months after the end of the treatment period.

The response rate to the 6-month follow-up survey was low, at 53%, and was considerably higher in the treatment group than the control group (59% v. 45%). Examination of the baseline characteristics among those that did respond shows little evidence that this would bias the treatment/control comparison, although it is possible that there may be unobserved differences between those who responded in the two groups. The low survey response rate also reduces the sample size available for analysis, meaning that there is considerable uncertainty around the estimates of the impact of the intervention.

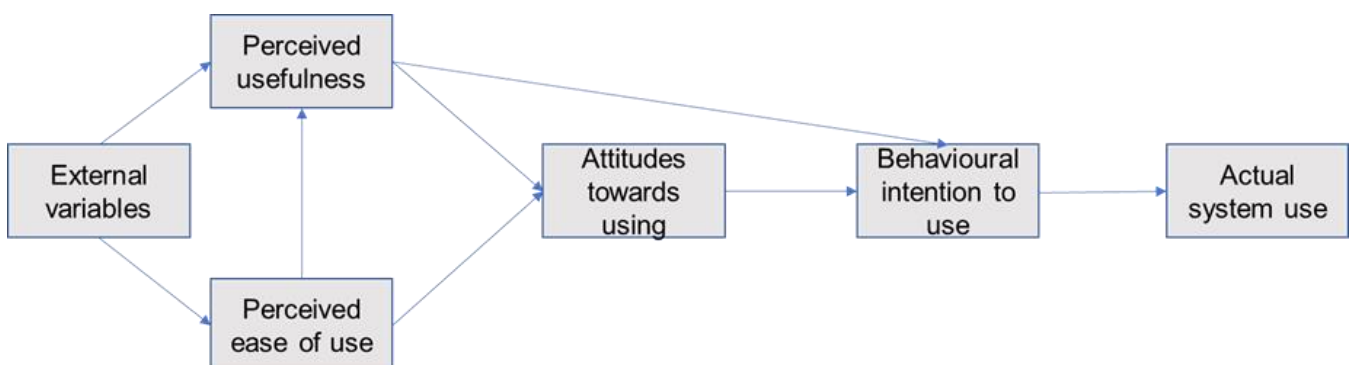
Businesses were recruited for the trial based on geographic cohorts, with randomisation being stratified by cohort. In one region (the East Midlands), too few SMEs applied to the programme to make randomisation possible: these businesses were therefore excluded from the trial and were all offered a place on the Evolve Digital programme.

Impacts

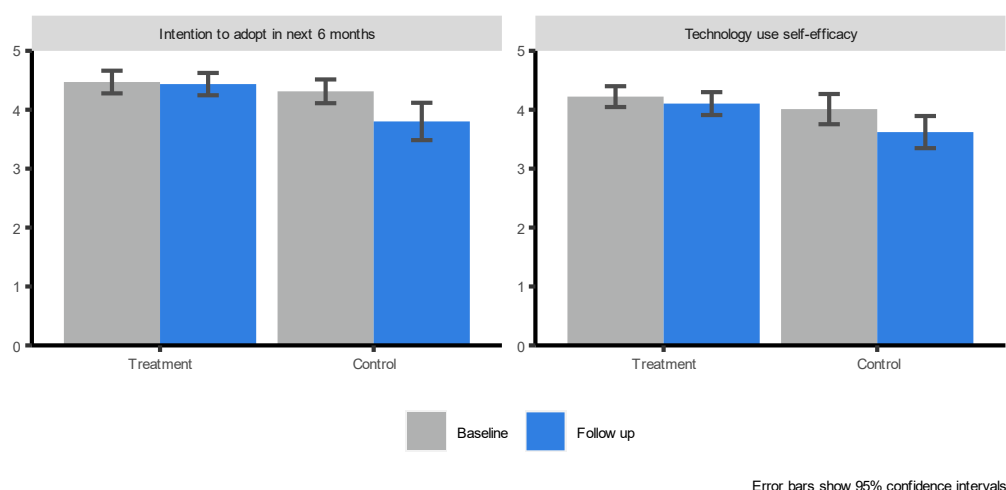
The level of participation in the Evolve Digital programme among those assigned to the treatment group was in line with the implementers' expectations. The majority (56%) attended 6 or 7 of the 7 online sessions; only 26% did not attend at all or joined only one session.¹⁸ Data was also gathered on whether the control group accessed the written materials online: 63% of them did so for at least some of the materials, but only 18% accessed all the materials available to them.

Data from the follow-up survey (shown in Figure 4) provides evidence that the Evolve Digital programme had a positive impact on the two primary outcome measures, technology use self-efficacy and intentions to adopt digital technologies. On both measures, the final survey data show a difference between the treatment and control groups of 0.5 points on a 4-point scale, with 95% confidence intervals ranging from 0.1 to 0.8 points (in the case of self-efficacy) or 0.2 to 0.9 points (for intention to adopt). There also appear to be positive differences in terms of two of the secondary outcome measures – perceived usefulness and attitudes towards digital technologies. There is no clear difference between the treatment and control groups for the remaining secondary outcome measures, perceived ease of use of digital technologies or the number of digital technologies actually in use by the

Figure 3: Technology Acceptance Model



¹⁸ These figures include the cohort in the East Midlands, which did not form part of the RCT.

Figure 4: Impact on primary outcome measures for Evolve Digital project

business. However, as noted above, the small sample size means that the confidence intervals are wide. For example, the 95% confidence interval for the treatment/control difference in the number of digital technologies used ranges from -0.4 to $+0.5$ technologies on an 8-point scale.

One caveat to these results is that the treatment/control differences in self-efficacy, adoption intentions and perceived usefulness are accounted for by the control group decreasing their scores between the baseline and follow-up surveys, while the scores of the treatment group were mostly unchanged. This may suggest that the limited intervention given to the control group led to them having greater reservations about the adoption of technologies – perhaps because the information provided to them was sufficient to reveal that the adoption process is more complicated than they had previously realised.¹⁹ On the other hand, perceived ease of use and the number of technologies in use actually increased among the control group. Another complicating factor in interpreting the results is that many businesses already had high scores for

¹⁹ One consideration is whether there had been a general decrease among the relevant SME population in these measures over the period of implementation of the project. In fact there is good evidence against this: the project team also

most of these indicators in the baseline survey (for example, nearly half of the sample already had the maximum score for intentions at baseline), so there was little potential for detecting progress among the treatment group.

Overall, it seems likely that the programme had a positive impact on these outcomes among the treatment group, rather than merely a negative impact among the control group.

These findings of positive changes from the programme are echoed in the qualitative interviews that were conducted with 7 (self-selected) treatment group businesses after the follow-on survey. These interviews particularly highlighted the value of interacting with other SMEs facing similar problems. Suggestions for improvement for the future centred around ensuring that businesses had the right expectations when signing up – for example, that the programme would not discuss the details of selecting specific technology systems.

Policy implications

Evolve Digital appears to have been successful in enabling leaders of small businesses to overcome barriers at the beginning of the technology adoption process – particularly in gaining confidence that they would be able to make effective use of digital technologies. The fact that this impact was achieved despite the switch from in-person to online delivery is particularly positive. There is potential for

surveyed a sample of similar businesses that were not engaged in the RCT as a potential quasi-experimental comparison group. Among these comparison population, no such decrease is observed in their scores over time.

this programme to be rolled out more widely to SMEs with little experience in technology adoption, perhaps as a precursor to programmes such as Made Smarter.

A scale-up of Evolve Digital would provide an opportunity both to test its impact further and also to conduct targeted experiments to optimise its delivery. For example, the implementers may wish to compare in-person to online implementation of the programme. With online delivery, there may be potential for organising cohorts of businesses in similar sectors, something that participants commented would add value to the peer interactions.

Wider learning

Recruitment of SMEs

Several approaches were used to recruit businesses for this trial. The most productive approach was to ask business advisors to identify family-owned businesses that would be suitable. A smaller number of businesses were recruited through mailings to the delivery organisation's existing networks or to lists purchased from third parties, through business-support networks and Growth Hubs, and through social media promotion and online advertising.

Be the Business Digital

Research question	How does Be the Business Digital and support from Lloyds Bank relationship managers affect the progress towards adopting software for SMEs in England?
Project lead	Be the Business
Delivery partner	Lloyds Bank
Evaluators	Behavioural Insights Team
Grant amount	£265,000
Number of SMEs participating:	
Target	500
Recruited	160
Location	England (nationwide)
Business size	10 to 249 employees
Business sector	All sectors
Barriers addressed	Lack of awareness of technologies, lack of awareness/knowledge about benefits, lack of access to trusted advice, lack of technical skills.
Interventions	Use of bank relationship managers to encourage usage of an informational website.
Evaluation design	RCT (as designed) Pre/post comparison (as implemented)
Outcome areas	Technology adoption
Evidence of impact	No evidence of positive changes in outcomes as a result of accessing the website material.
Readiness for scaling	Not ready
Potential for further testing	Little potential for further testing in current form, though the website could be a useful tool for use in other business support programmes.
Further information	Trial registration , evaluation report

Rationale

The creation of the Be the Business Digital website was inspired by a series of interviews and workshops with SMEs around England about the barriers they face in adopting new technologies. They identified that many SMEs are unaware of

the technologies that are available and the benefits they could have, and do not have access to reliable information. For these SMEs, providing a good source of impartial information could move them towards thinking about digital adoption. A second group of SMEs were found to have some level of awareness of the potential of

technologies but were unsure how to proceed, requiring support in developing a business case, selecting a product and supplier, and implementing and embedding the system in their business. SMEs are conscious of the informational asymmetry between them and the vendors, and many have had bad experiences with attempts at technology adoption in the past.²⁰ Providing clear information and guidance on the adoption journey was thought to be a good way to begin addressing these barriers. Doing so through a website would be a highly scalable way to support SMEs in moving towards digital adoption.

Intervention

Be the Business Digital provides advice to SMEs on the adoption of digital technologies. The site provides guidelines on how to make decisions around technology and practical advice on implementation, as well as featuring case studies from other SMEs. The content is focused on 5 types of back-office system: customer relationship management (CRM) systems, enterprise resource planning (ERP) systems, human resource (HR) systems, digital accounting software, and project management software.

The site had already been launched and was publicly accessible prior to this trial. For this trial, Be the Business worked with Lloyds Bank to encourage SMEs to make use of the site. Under the original plan, there would have been two different levels of intervention. In one arm of the trial, Lloyds

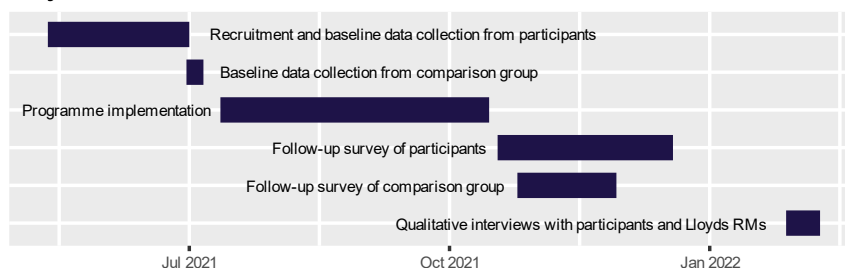
relationship managers (RMs) would have simply sent their SME clients emails encouraging them to make use of the site. This would provide an indication of the impact that the website could have when used independently by SMEs. In the other arm, RMs would also discuss the site during a routine meeting with their SME clients for approximately 10 minutes, and work with them to create an action plan for the SME to follow. The aim of this was to assess whether providing this additional support would enable SMEs to make more effective use of its content.

After the RCT design was abandoned (see below), the plan was changed so that all SMEs included in the trial were to receive the stronger version of the intervention, with RMs supporting them in using the Be the Business Digital site.

Evaluation design

This project was designed as a cluster-randomised controlled trial, with Lloyds RMs being randomly allocated either to carry out one of the interventions with the SME clients they had recruited to the trial, or to a control group who would not inform the SMEs about Be the Business Digital. The trial protocol set out two variations in the trial design. The preferred design was to implement a 3-arm trial in which the two

Project timeline



²⁰ The barriers discussed here have much in common with those identified in Be the Business's later research, discussed in Be the Business. ['The UK's technology moment – why 2020 can be the year that changed our trajectory on tech'](#), 2021.

levels of intervention discussed above would be compared to the control group. If the levels of recruitment were too low to provide sufficient statistical power for this design, a two-arm alternative was set out, under which the ‘encouragement only’ arm would be dropped.

In the event, levels of participation in this project fell well short of Be the Business’s and Lloyds’ expectations. The original target (in order to run the 3-arm trial) was to sign up 100 Lloyds RMs, who would in turn recruit a total of 500 of their SME clients. In the event, only 58 RMs agreed to participate, and they recruited only 160 SMEs between them, making it infeasible to proceed even with the two-arm trial (15 of the 58 RMs did not recruit any SMEs at all). Instead, all RMs were asked to implement the intervention with the SMEs they had recruited, and the evaluation design was changed to rely on a pre/post comparison.

Data was collected on businesses’ current use of digital technologies and any steps they had recently taken towards adopting new technologies, at baseline and in a follow-up survey. These surveys also asked them to estimate the likelihood that they would adopt any of the 5 types of software that Be the Business Digital focuses on, in the next 12 months. Unfortunately the response rate to the final survey was very low: only 33 of the 160 SMEs responded.

In addition to the pre/post analysis, the evaluators attempted to carry out a quasi-experimental analysis by surveying a group of comparison businesses, which were recruited from an existing interview panel. 404 such businesses were surveyed at

baseline, of which 188 went on to complete the follow-up survey. However, the profile of the comparison group was found to be substantially different to that of the group that received the intervention, consisting mostly of businesses that were smaller and younger. It is also highly likely that the participants and the comparison group differed in important unobservable characteristics, such as their motivations and interest in digital technology. For this reason, we do not believe that the quasi-experimental analysis adds significantly to the pre/post comparison.

Impacts

The level of engagement of RMs and of SMEs in the project activities did not meet the project team’s expectations. Only 11 of the 43 RMs that had recruited SMEs into the project returned the tracking forms as requested by the project team. Most of those reported having sent emails to the SMEs about Be the Business Digital and to have mentioned the site during routine meetings with them. However, interviews with several RMs revealed that many were unable to provide additional support to the SMEs because of conflicting work pressures, or because they did not feel they had the necessary expertise. 64 unique visitors are known to have browsed the Be the Business Digital site during the project period, but this number is assumed to include some of the RMs as well as SMEs. Of the 31 SMEs that responded to the follow-up survey, only 3 reported having used the site.²¹ None of the website users used the feature to create an action plan for adoption.

²¹ 12% of the comparison sample – who were not informed about Be the Business Digital – also reported in the follow-up survey that they had visited the site. The evaluators believe that this is likely to

reflect untruthful answers or a lack of attention in completing the survey: in either case, this further calls into question the quality of the survey data available to assess impacts.

Given the low levels of engagement in the activities, we would not expect to find evidence of positive impacts on technology adoption. In fact, both the pre/post comparison and the quasi-experimental analysis show that the businesses who responded to the survey took fewer steps towards adoption and were less likely to have started using a new software system during the project period than in the baseline period. (There was no clear change in their intentions to adopt new technology over the following 12 months.) The evaluators suggest that this may be due to a seasonal effect: the period being asked about in the baseline survey included the start of the new financial year, while the follow-up survey was asking about actions taken largely over the summer months.

Policy implications

The experience in this project may be taken to imply that there is little demand among SMEs for a website providing guidance about technology adoption. However, that may be too strong a conclusion to draw. Under this trial, SMEs were being directed towards the Be the Business Digital site without first having expressed a need for

support in this area. In contrast, the site is intended for SMEs to use as a resource at their own convenience, whenever they are looking for advice on digital adoption. Of course, it would be much more difficult to assess the impact of the site when being used in normal use in this way.

This project encountered similar difficulties to the 'Making Accountants Digital Enablers' project in using intermediaries to provide support to SMEs on technology adoption. In both cases many of the intermediaries (accountants in the MADE project, RMs in this case) felt that they did not have the required expertise to advise on digital technology, did not see this as their role, and/or struggled to balance this responsibility with their existing workload. Again, the situation would probably be different if the client had approached them asking for support in this area. However, SMEs will not make these demands if they do not see banking providers or accountants as the most appropriate source of support. Equally, banking providers or accountants are unlikely to invest in learning about these topics if they do not believe that there is demand from clients for this type of support.

Adoption of Digital Automation Practices and Technology (ADAPT)

(Later renamed as Adoption of Digital Automated Payment Technology)

Research question	For SMEs in East Cheshire that do not currently use and have not previously used digitally automated accounting and payment technologies, does participation in an interactive peer-to-peer good practice webinar event lead to greater awareness, understanding and progress towards adoption of these 'new to firm' technologies, compared to only accessing a written 'good practice information guide' on digital accounting and payment technology adoption?
Project lead	Cheshire East Council
Delivery partners	RedEye International and Siemens plc (proof-of-concept project only) Barclays Bank and CIRCLE Leadership (full trial only)
Evaluators	SQW (full trial only)
Grant amount	£58,000 (proof of concept) £325,000 (full trial)
Number of SMEs participating:	
Target	230 (30 in the proof of concept, 200 in the full trial)
Recruited	241 (30 in the proof of concept, 211 in the full trial)
Location	East Cheshire
Business size	Up to 249 employees
Business sector	All sectors
Barriers addressed	Lack of awareness of benefits, perceived high cost of adoption.
Interventions	Exposure visits to and online events with frontier firms, informational website.
Evaluation design	RCT
Outcome areas	Technology adoption
Evidence of impact	<p>Positive feedback and indications of positive changes in awareness/understanding of technologies for participants in the proof of concept (though this was not designed to demonstrate causal impact).</p> <p>Positive changes over time in awareness/understanding and steps towards adoption in the full-scale trial, though it is not clear how much of this can be attributed to the interventions. Little indication that the treatment (webinars) resulted in more positive impact than the written information provided to all trial participants online.</p>

Readiness for scaling	Not ready: the intervention as originally conceived could not be tested in the full-scale trial, and the intervention that was tested was not shown to have significant impact.
Potential for further testing	High potential for a larger-scale test of the original intervention, facilitated exposure visits to large businesses.
Further information	Trial registration

Rationale

The ADAPT project was prompted by the observation that the use of advanced technology is fundamental to the success of some large businesses in the East Cheshire area, but that there is limited knowledge and understanding of these technologies among local SMEs. By arranging exposure visits for groups of SME managers to some of those leading businesses, the project team hoped to improve their understanding of the potential of modern technologies, and of the investment case and the risks involved.

The proof-of-concept project focused on the use of technologies in marketing and in manufacturing. In line with BEIS’s priorities for round 3 of the Business Basics Programme, the full-scale trial focused instead on promoting the adoption of digital accounting and payment technologies.

Proof of concept

Intervention

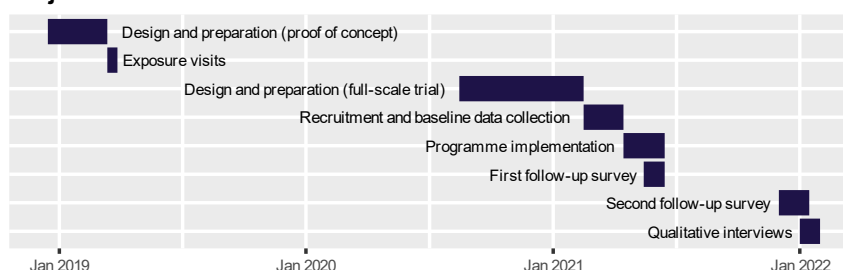
Under the proof-of-concept project, a series of exposure visits were arranged for SMEs in the Cheshire East area to one of two businesses: a large digital marketing company (RedEye International) to discuss

marketing automation, and one to a large manufacturer (Siemens) to discuss manufacturing automation. A total of 30 SMEs participated, 15 visiting each of the two businesses. Each visit lasted for a whole day and included presentations from experts within the larger businesses and opportunities for discussion and exchange of experiences between the participants.

Evaluation design

Participants were asked to rate their awareness and understanding of automation technologies and their level of interest in these technologies, both before and after the exposure visits. They were also asked specifically about how the visits had affected their views and plans for using these technologies. All 30 participants completed these surveys, and several also participated in qualitative interviews about the experience.²²

Project timeline



²² Survey data was also collected from a group of five SME leaders who had expressed and interest but who had not been invited to participate in the

exposure visits. These data confirm that there was little change in the indicators before and after the intervention among this comparison group.

Impacts

All 30 participants stated in the follow-up survey that the visit had changed their view about the value of automation technologies for their business. The pre/post data shows that participants had increased in terms of their awareness and understanding of automation technologies after the exposure visits, that they were more convinced of the value of these technologies for their businesses, and that they were actively seeking more information. However, they also became more aware of some of the challenges – particularly in the skills needed for implementation. There was no change, therefore, in the overall likelihood that they would adopt a solution in the next 12 months.

Full-scale trial

Intervention

The original plan for the full-scale trial was to arrange exposure visits to Barclays Bank's Global Technology Centre, in which SME leaders would spend a full day learning about the benefits of digital payment technologies. With the onset of the COVID-19 pandemic, these visits had to be replaced with online events. The events were designed to replicate the proof-of-concept visits as far as possible, including presentations from Barclays staff and facilitated peer-to-peer networking discussions. The sessions were designed for small groups of SMEs (around 10 attending each), and to last between 2 and 2½ hours in total. In the event, rates of participation in these events did not meet expectations. In response to this, the events were shortened to last 1½ hours, and a recording was made available for those who were not able to attend. Those who viewed the recording were also invited to join a live

question-and-answer session with Barclays staff.

The project team also created an online portal to provide SMEs with advice on the use of digital accountancy and payment technologies. Access to this portal was provided to all participants in the trial, including the control group.

The project was aimed at SMEs in East Cheshire that had no experience of using digital accountancy or payment technologies. After difficulties with recruiting sufficient numbers of SMEs, the eligibility criteria were later expanded to include businesses with some prior experience.

Evaluation design

This project was designed as an RCT. All participants were given access to the online information portal, and approximately half were randomly selected to be invited to the webinars with Barclays Bank. Data was collected on participants' awareness and understanding of digital accounting and payment technologies and on any steps they had taken towards adopting these technologies, at baseline and in two follow-up surveys. The first follow-up survey was carried out immediately after the implementation of the webinars, and the second approximately 6 months later.

The evaluation suffered from low response rates to the follow-up surveys. In total 36% of the treatment group responded to either or both of the two follow-up surveys, as did

46% of the control group.²³ In order to maximise the sample available for analysis, the evaluators decided to combine data from the two surveys into a single set of outcome measures.²⁴ However, the resulting sample of 86 SMEs still resulted in a minimum effect size that the evaluation could be 80% confident of detecting was 0.7 of a standard deviation. This is quite a large effect, probably larger than would be expected from participation in a single online event.

Another concern arising from the low survey response rates is the potential for attrition bias. The evaluators did not find evidence that participation in the surveys was correlated with any of the characteristics that were collected in the baseline survey, but it is possible that there were differences in unobservable characteristics between those who responded in the treatment and control groups. For this reason, the evaluators calculated upper and lower bounds for the estimated treatment effects, as a check on the robustness of the results.

Qualitative interviews were also used to compile case studies of several trial participants from both the treatment and control group. These cases were selected to include some of the most successful and least successful participants, in terms of the changes in their levels of awareness or

understanding, or in the steps they had taken towards adoption.

Impacts

Participation in the webinars fell short of expectations. Only 27% of the treatment group attended one of the webinars live, and 30% watched the recording. A major factor in this is thought to be the timing of the webinars, which coincided with the easing of lockdown restrictions in England: of those who gave reasons for not taking up the invitation, the majority said that they were too busy with reviving their businesses. The online portal was used by 60% of the treatment group and 48% of the control group.

In the follow-up surveys, respondents' awareness and understanding of the technologies and the number of steps taken towards adoption were found to have increased slightly from before the intervention was implemented. On average, businesses were found to have completed half of the adoption journey for a single technology. While lack of awareness of technologies was cited as the most important barrier to adoption in the baseline survey, only one respondent mentioned this in the final follow-up survey. In the context of an increase in adoption of these types of technologies that happened as a result of the COVID-19 pandemic, it is not clear how much of this change can be attributed to the

²³ This was in spite of switching from online to telephone surveying and making at least 8 attempts to contact each participant, as well as (in the first follow-up survey) entering respondents into a prize draw. Note the reason that the response rate was higher among the control group than the treatment group was that the treatment group had received frequent communications from the project team during the intervention phase, which had prompted some to decline further contact. The control group had been contacted less frequently and so more of them were remaining to be contacted at the time the survey was implemented.

²⁴ This was a change from the original trial protocol.

project activities. However, feedback from users about the content of the portal and the level of detail provided was positive, and the majority said that the information had had some influence on their understanding of the benefits of the technologies – though only a minority said it had influenced their decisions on adoption.

The changes in awareness and understanding and the number of steps made towards adoption were very similar between those in the treatment and control groups.²⁵ This suggests that the webinars did not have a noticeable additional impact, beyond that provided by the online portal. Only half of those who attended the webinars said that the events had influenced their understanding of the benefits of the technologies. However, it is notable that the feedback about the content of the online portal was more positive from those in the treatment group than the control group, suggesting that there may have been some complementarity between them.

Policy implications

The original proof-of-concept project produced promising indications of change as a result of the exposure visits: participants were more open to the use of technologies, and also had a better understanding of both the potential benefits and the constraints they faced in adoption. Given that the full-scale trial ended up testing quite a different intervention – shorter online events – there remains

potential for the exposure visits to be tested at scale in the future.

There appear to be three key reasons for the disappointing findings in the full-scale trial. Firstly, the webinars with Barclays ended up being quite different in nature to the original concept of a whole-day exposure visit. The length of these events – and the ambitions of what to include – were scaled down further during rollout, in order to try to improve attendance rates. In the end more of the treatment group watched a recording than attended a live event, so did not have an opportunity to benefit from peer interaction. At the same time, to make the trial more attractive to potential participants, the online information portal (which was available to both the treatment and control groups) was developed further, and may have provided as much benefit as was available from the webinars.

A third reason for the lack of impact from the webinars is likely to lie in the changing context at the time of implementation. The COVID-19 pandemic had already accelerated adoption of digital technologies, including accounting and payment technologies. It therefore became more difficult to recruit SMEs with no experience of these technologies. As a consequence, some of the businesses that were recruited did have some existing experience of the technologies – and some then found that the material presented in the webinars was too basic for them.

²⁵ This result holds even under various robustness tests, including bounding the treatment effect to account for the high attrition rate, examining the effect on compilers alone, and carrying out the analysis using data only from one of the two follow-up surveys. In each case, the estimated treatment effects are small and the 95% confidence intervals include zero.

In the end, the most useful insight to have been generated by the trial was one that it did not initially set out to test: that written guidance on an online portal can be effective in building an understanding of digital technologies. The high quality of the materials produced for this trial could form a useful model in designing future online resources for SMEs.

Wider learning

Recruitment of SMEs

Recruitment for the full-scale trial was led by CIRCLE Leadership, a specialist business engagement consultancy, who had strong established networks with SMEs in the East Cheshire area. Most (nearly

80%) of the project participants were recruited through making direct contact by email or phone with SMEs from these existing contact lists. The team believe that the combination of a personalised approach and being persistent were crucial in encouraging SMEs to sign up. The partners also invested significant efforts in promoting the project through social media, on their websites and in a press release from the Council, though these resulted in much smaller numbers of SMEs being recruited.

Feedback from the staff involved in recruitment suggests that the fact that both the local authority and a global bank were involved was a key benefit in attracting SMEs to the project.

Local Productivity Club

Research question	Does participation in a local productivity club – including workshops with peers and mentoring from a consultant – lead to improvements in business practices among small businesses in the manufacturing and services sectors?
Project lead	WLP (Anglia Business Growth Consultants Limited)
Delivery partners	College of West Anglia, Borough Council of King's Lynn & West Norfolk
Grant amount	£59,000
Number of SMEs participating:	
Target	8
Recruited	4
Location	Borough of King's Lynn & West Norfolk
Business size	All SMEs
Business sector	Manufacturing and services
Barriers addressed	Lack of time
Intervention	Business training programme with one-to-one consultant support.
Evaluation design	Pre/post comparison
Outcome areas	Management practices
Evidence of impact	Positive feedback received from participants. (Project was not designed to demonstrate causal impact.)
Potential for further testing	Little potential for this specific programme, but the use of peer pressure and social commitment to training are of interest for testing in the future.
Further information	Evaluation report

Rationale

WLP and the Borough Council of King's Lynn & West Norfolk have been organising networking and training events for local manufacturing SMEs since 2004. They have observed that participation from larger SMEs has often been good, small businesses struggle to attend regular events due to competing priorities. Under this project, the partners tested engaging small businesses through a more structured and time-limited programme which included

direct support from a consultant as well as joint sessions with other businesses. By setting up the regular group meetings as a “club”, the project team intended that participants would feel social pressure from their peers both to attend regularly and to deliver on the actions they had committed to.

Intervention

The productivity club was implemented as a series of 7 two-hour sessions held once

every two weeks over a 12-week period. The sessions covered topics such as managing change, gathering feedback, lean manufacturing, and improvement planning. The aim of each session was to provide an actionable takeaway that participants could implement within their businesses in the following two weeks, with support from the consultants. The final session involved each business drawing up a plan of action to apply what they had learned.

Evaluation design

Participants were asked to complete surveys before and after participating in the 12-week programme. These surveys included questions about the business's governance, quality control, employee engagement and process controls, as well as about productivity based both on gross margin and on turnover. Due to time constraints, the follow-up data on productivity related to the 3-month period during which the project was being implemented, so do not fully reflect any impacts that may have resulted from changes made because of their participation.

Impacts

Participation in the productivity club sessions was good: while one of the 4 companies stopped attending part-way through the programme (apparently for reasons unrelated to the programme), the other 3 businesses participated in most of the sessions. Two of the 3 participants noted in the final survey that they would be willing to pay for participation in the future.

The 3 participants all took specific steps towards improving productivity in their businesses during the productivity club process – particularly in the use of process mapping – and set out plans for further

improvements. Their scores in the benchmark questions on business practices increased considerably after their participation in the productivity club (though it should be noted that these are self-reported assessments, and at least in one case this was affected by a change in understanding of the questions). It is not possible to identify any pattern in the productivity figures of the 3 businesses, but this is to be expected with such a small sample and over a short time span.

Potential for further testing

While the 3 businesses that fully participated appear to have found the process beneficial, it is not clear that the distinctive feature of this project – the “club” structure – was successful in generating change through peer pressure. In contrast, other Business Basics projects have produced anecdotal evidence that social commitment can reinforce attendance and lead to productive exchange of experiences.

The project team in this case decided that the practical barriers to scaling up the local productivity club programme sufficient to test it in an RCT would be too great. However, the use of peer exchange and social commitment to change would certainly be interesting to test in future trials.

Wider learning

Recruitment of SMEs

Recruitment was carried out primarily by contacting businesses that had previously interacted with one of the 3 delivery partners. Of 123 businesses contacted by email, 9 expressed an interest and 4 ended up participating in the club. Some effort was also made to recruit through networking

events and through advertising in the local press, but this was done at too late a stage to be effective.

Digitally Enabled Business Clinic

Research question	Is a Digitally Enabled Business Clinic an effective model to improve SME productivity?
Project lead	WLP (Anglia Business Growth Consultants Limited)
Delivery partners	Northumbria University
Grant amount	£44,000
Number of SMEs participating:	30–40
Target	47
Recruited	
Location	North East England
Business size	All SMEs
Business sector	All sectors
Barriers addressed	Lack of time, lack of technical skills, perceived complexity, risk aversion.
Intervention	Teams of university students working with SMEs on a specific project.
Evaluation design	Pre/post and qualitative assessment
Outcome areas	Management practices, technology adoption
Evidence of impact	Positive feedback from the majority of participants in the programme. (Project was not designed to demonstrate causal impact.)
Potential for further testing	Key point to be tested if the intervention is replicated at other universities is the level of demand from SMEs. A full evaluation of impacts may be appropriate at a later stage.
Further information	Evaluation report

Rationale

This project involved piloting an adaptation of Northumbria University’s existing Business Clinic initiative, in which small teams of business school students support SMEs on a defined project. The aim is for the students to support the SMEs in moving towards adoption of a new practice, new technology or new business strategy that they would otherwise not have the time or skills to implement. At the same time, the students gain experience of working with an SME on real-world problems.

While SMEs receive support free of charge, there are significant overhead costs involved in the operation of the Business Clinic – including administrative staff, infrastructure, and marketing facilities. This project piloted the online delivery of the Business Clinic approach, with the aim of creating a more scalable model that could be replicated by other universities.

Intervention

Groups of 3 or 4 final-year undergraduate and postgraduate students at Northumbria

University's business school were allocated to support SMEs over a 12-week period. The business problem that the students were to work on was defined collaboratively, based on the SMEs' needs. The work was structured according to a standard timetable, with defined tasks and outputs for each week. Students were provided with consultancy training and were mentored by academic staff over the course of their assignments.

Evaluation design

28 of the 47 participants were interviewed at the start and end of the DEBC process. The initial interviews focused on participants' expectations and objectives from the project, with the final interviews reviewing progress against these objectives and discussing plans for further implementation.

Many of the SMEs and the student teams also completed quantitative surveys after the DEBC process. The SMEs answered questions about the expected effect of the intervention on their productivity, while the students were asked about the effect of the project on their development and competitiveness in the job market.

Impacts

In the final interviews, almost all participants said that they were likely to adopt new technologies, make changes to business practices (such as the use of social media or a change in recruitment strategy) or make other innovations as a result of recommendations by the students. The majority of participants reported that they had made some progress against the objectives they defined at the start of the project, with a few making very substantial improvements.

Overall, three quarters reported that the project was likely to have a positive impact on the business's productivity and financial performance. In cases in which participants

did not feel that the project would have a positive impact for them, this was due in some cases to lack of confidence in the recommendations made, and in other cases to a lack of time or capacity to make innovations. The participants that were less satisfied with the outputs of the student project recommended that communications between the student teams and the SMEs could be improved and/or that they would benefit from having a stronger understanding of the business's existing operations. These points are more difficult to overcome when interacting remotely rather than in person, but have nevertheless been taken on board by the project team for future iterations.

Potential for further testing

This project was successful in demonstrating that the Business Clinic approach could be successfully delivered in an online environment, and that the majority of the SMEs participating were satisfied with the result. The project team believes that this model can be replicated at low cost in other universities. Given that the students involved expressed very high levels of satisfaction with the scheme and believe that it has boosted their employability, other universities may well be interested in adopting the DEBC approach. The main point to be tested in replicating it elsewhere is likely to be the willingness of SMEs to engage, given that universities are often seen as inaccessible or providing advice that is not adapted to a real-world environment.

If the DEBC model is to be rolled out in other universities, it would certainly need piloting and adaptation over the first two or 3 cycles. If universities or funders are interested in evaluating the impacts on SMEs, this would be most appropriate later, once the delivery approach has stabilised.

Wider learning

Recruitment of SMEs

Recruitment was carried out purely online, with a variety of approaches tested. Display adverts reached 2.4 million users who were identified as SMEs and those interested in business consultancy services. This produced a click-through rate of 0.14% (implying that it had successfully promoted awareness of the Northumbria University/DEBC brand) but no approaches

for further information. 'Retargeting' adverts were aimed at those that had previously interacted with the business support pages of the university website; this activity was thought to show promise but was launched at too late a stage to produce results. Finally, promotion was carried out in conjunction with Bdaily, an online business news publisher, through emails to their subscribers, an online banner advert and a featured article.

Cloud Accounting

Research question	Does the provision of facilitated support improve the adoption of cloud-based accounting packages, by community-sector SMEs?
Project lead	Locality
Grant amount	£32,000
Number of SMEs participating:	
Target	4–6
Recruited	7
Location	England (nationwide)
Business size	All SMEs
Business sector	Community/voluntary organisations
Barriers addressed	Lack of time, lack of technical skills, perceived complexity, risk aversion.
Intervention	One-to-one support on implementation of digital accounting software.
Evaluation design	Qualitative assessment
Outcome areas	Technology adoption
Evidence of impact	Positive feedback from participants. (Project was not designed to demonstrate causal impact.)
Potential for further testing	Locality has proposed that a larger-scale, longer-term package of support would be more impactful. This would require piloting again at small-scale before being made more widely available.
Further information	Evaluation report

Rationale

Adoption of cloud-based accounting systems in community organisations lags behind the private sector. In the context of increasing pressures on their funding and time, many such organisations have not been able to proactively invest in improving their financial systems. A survey of Locality member organisations showed that the majority were aware that their financial management systems were not performing well, but also revealed high levels of concern about switching to a cloud-based system. By providing practical support in implementing modern accounting systems,

Locality sought to improve the quality of their financial management, so increasing efficiency and organisational resilience.

Intervention

Participating organisations were invited to complete an initial diagnostic questionnaire, which was reviewed by specialists to assess that they were suitable for support and to identify the barriers to adoption facing the organisation. Locality staff and external specialists then worked with the organisation to set out a plan for implementation of a cloud-based accounting system, including specifying an

implementation date and any preparatory work that needed to be done. The specialists provided training on the set-up and use of the system in advance of the implementation. They also provided further support 2 or 3 weeks later, to resolve any problems encountered.

Evaluation design

Evaluation was carried out primarily through a qualitative questionnaire, completed by organisations that received support under the project. Locality staff involved in implementing the project also completed a questionnaire to provide their perspective.

Impacts

Most participants reported that the project hastened their decision to move to a cloud-based accounting system. Their concerns about the complexity and risks involved in the change were generally not borne out in practice. Some participants reported immediate benefits in terms of control over financial process, time efficiencies and the quality of financial management information available. In smaller organisations with fewer staff resources, these benefits were not yet clear by the time of the evaluation questionnaire but were expected to become evident within months. Most participants

also reported that the project had increased their organisational resilience.

Potential for further testing

A clear message from the post-project questionnaire of participants was that the adoption of a cloud-based accounting system had been a smoother process than they had expected. One way to encourage wider adoption, then, may simply be to communicate this to Locality's wider membership, perhaps by asking participants in this project to share their experience about the process they went through and the benefits it has brought them.

Nevertheless, Locality believes that community organisations (particularly small organisations) will continue to lack the appropriate skills, so there is potential for targeted technical support to have a significant impact on adoption. The organisation has proposed a larger-scale package of support to its members over a 2-to-3-year period, which would provide assistance in adopting other digital systems (such as electronic point-of-sale or booking systems), as well as in making better use of digital systems to improve the quality of financial processes and financial management information.

Dairy Forward

Research question	Does access to a platform providing information about the benefits of resource-productivity technologies increase SME dairy businesses' appetite to invest in relevant technologies?
Project lead	Food Forward Limited
Delivery partner	University of Surrey
Grant amount	£60,000
Number of SMEs participating:	
Target	32–36
Recruited	20
Location	England (nationwide)
Business size	All SMEs
Business sector	Dairy sector
Barriers addressed	Lack of awareness of technologies, lack of awareness/knowledge about potential benefits.
Intervention	Report for SMEs on current resource use and information on technologies to improve resource efficiency.
Evaluation design	Pre/post analysis and qualitative evaluation
Outcome areas	Technology adoption
Evidence of impact	Positive feedback and some indication of changed investment decisions from some participants. (Project was not designed to demonstrate causal impact.)
Potential for further testing	Some elements of the planned intervention are still to be piloted. Challenges to scalability of the intervention, particularly in processing information from utility providers, will need to be overcome before larger-scale testing.
Further information	Evaluation report

Rationale

The project team have observed that there is potential in the UK dairy industry for large improvements in resource productivity (that is, in the volume of output achieved for a given input of water or energy, or for a given level of waste generated). For example, many food businesses could benefit from using technologies like industrial batteries, low-waste cleaning

systems, solar power, or water recycling. However, there is little awareness of these technologies and their potential benefits among businesses. In addition, most food businesses do not systematically measure their water or energy use or their waste generation, so do not have the data necessary to inform decisions about investment in these technologies.

The project sought to overcome these informational barriers by providing dairy businesses with an accessible summary of data on their current level of resource productivity, as well as information about technologies that were available to the businesses and about the potential impacts. The original vision was to provide information about peers' investments or intentions to invest in such technology, to test whether having a sense of being part of a wider movement would bolster businesses' willingness to invest. However, this last step was dropped as not being feasible during the initial pilot.

Intervention

Project participants were given support in compiling data on their energy and water use and waste generation together and the associated costs (including providing Food Forward with authority to obtain this from the utility companies where necessary). They were then presented with a summary of this information in a digestible format, showing usage per unit of input and output. Some groups were also provided with information about technologies that could increase their resource efficiency – including case studies of other businesses that had implemented the technologies.

Evaluation design

The 20 SMEs enrolled in the project were split into 4 groups. Allocation of businesses between the groups was made for convenience, rather than at random. The first group was designated as a comparison group and received no intervention. The other 3 groups were all invited to submit their energy, water and waste data and were given access to the dashboard enabling them to view a summary of this data, as well as being given information about resource-productive technologies. Two of the groups were additionally given access to data about the monetary value of their resource consumption.

All project participants were asked to complete surveys at the start and end of the project about their appetite for investment in any of 21 specific resource-productive technologies. Fifteen of the 20 participants participated in the final survey. Qualitative interviews were also carried out with some participants at the end of the project.

Impacts

Participants in the 3 intervention groups gave more definitive answers about their potential investment in the resource-productive technologies in the final survey than they did at the start. In large part this involved them making decisions *not* to invest in specific technologies: the number of technologies they were investigating or had positively decided to invest in was little changed between the two surveys. In contrast, the comparison group were seeking information in fewer of the technologies by the end of the project, but had not made many active decisions not to invest. (The report includes some analysis of how the intervention groups increased their interest in specific technologies, relative to the comparison group – but we would be cautious about over-interpreting these differences, given the very small sample sizes involved.)

The qualitative interviews suggested that those in the intervention groups found the information provided valuable, and that they would like to continue having access. These interviews also confirmed that project participants were motivated to make resource-productive investments, both because of the potential for making cost savings and because of the branding potential of reducing their environmental impact.

Potential for further testing

Dairy Forward was an ambitious initiative, and it did not prove possible to test all the elements during the project's lifetime. However, the project produced evidence for

some elements of the underlying theory of change – including the interest of dairy-sector SMEs in the information provided and their stated willingness to invest in resource-productive technologies. The evidence suggests that providing access to information enabled SMEs to rule out inappropriate investments, which is beneficial in itself.

An important practical challenge in this project was processing data from the utility companies, and this is likely to represent a significant barrier to developing a scalable service. If this challenge can be overcome, there is certainly potential for the intervention to be tested at larger scale.

Wider learning

Recruitment of SMEs

The original plan was to recruit SMEs at an annual dairy industry event, though initial delays prevented this. Instead, businesses were recruited through a combination of mailings and emails to relevant businesses, coverage in an industry newsletter and in other relevant press, and an alternative industry event. The most effective recruitment channel was the promotion of the project by an industry association among its members.

Productivity in Professional Services

Research question	Does introducing an online career development programme improve productivity among SMEs in the professional services sector?
Project lead	The Career Innovation Company
Evaluators	Institute for Employment Studies
Grant amount	£59,000
Number of SMEs participating:	
Target	15-30
Recruited	11
Location	England (nationwide)
Business size	All SMEs
Business sector	Professional services
Barriers addressed	Employee engagement, managers' confidence
Intervention	Online self-guided training on career development for SME employees and managers.
Evaluation design	Feedback surveys and qualitative interviews.
Outcome areas	Employee engagement
Evidence of impact	Positive feedback from some participants (including employees and managers), but high attrition over the course of the programme. (Project was not designed to demonstrate causal impact.)
Potential for further testing	Testing should focus on how to adapt the programme to improve participation and completion rates.
Further information	Evaluation report

Rationale

Professional services firms – including lawyers, accountants, and management consultants – have been identified as one source of the shortfall in productivity growth in the UK in recent years. The Career Innovation Company believes that this sector particularly suffers from poor levels of employee motivation, and a disconnect between the goals of employees and those of the business. This is exacerbated by the problem that SMEs typically underinvest in staff training and development. The company had already developed and tested

a programme of career coaching for employees in larger businesses: by offering this to SMEs in the professional services sector, the aim was to improve employee engagement, motivation and productivity.

Intervention

'Be Bold in Your Career' is an e-learning programme for employees developed by The Career Innovation Company, which is intended to provide the benefits of career coaching but delivered in a scalable way. The course encourages participants to plan intentionally for their career development, to

develop a network of career supporters (including peers and mentors), and to have discussions about their career with their managers and others. The course consists of 4 modules, each involving a webinar and related content, which participants follow over a 10-week period.

For the purposes of this project, the Career Innovation Company complemented the 'Be Bold' programme with a second online programme, 'Unlocking Potential'. This was aimed specifically at SME managers, setting out the case for supporting employees in their professional and career development and providing guidance on how to have conversations on these subjects. The content included two webinars, 4 tailored briefings sent by email, and a manager-only discussion forum.

Evaluation design

The evaluation of this pilot project was largely based on feedback submitted by participants after the webinars and at the end of the programme. A total of 170 responses were recorded to polls at the end of the webinars, but only 18 'Be Bold' participants and 8 'Unlocking Potential' participants responded to the end-of-course survey (representing 12% and 18% of the total numbers of participants, respectively). In addition, in-depth interviews were carried out with 12 of the participants, as well as with stakeholders such as professional bodies, LEPs and business schools.

Impacts

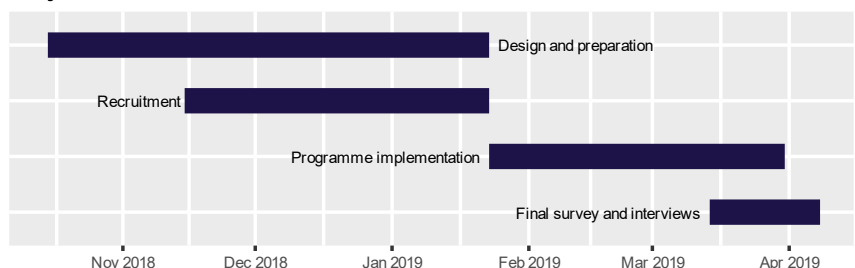
Many of those who responded to the final survey and took part in interviews reported that the programme had boosted their confidence and that they felt a greater sense of control over their career development. In line with the programme design, participants said they had more understanding of the importance of personal

networks and how to build them. A smaller proportion reported having greater clarity over their career direction, though it seems likely that this would take longer to emerge. Employees and managers both talked about being more willing and open to have discussions about career development, and cited examples of this leading to individuals taking on new responsibilities or moving to new opportunities within the business.

However, it is important to note that most of the programme participants did not respond to the final survey or to the request for an interview, so we do not know how representative the positive experiences reported are. The high rates of drop-off in participation over the two programmes is a less positive indicator. Of 197 employees and managers who signed up to follow either the 'Be Bold' or 'Unlocking Potential' course (or both), only 69% began the programme, and only 31% were considered to have 'completed' (in the sense that they made use of at least half of the resources available). Participation in the 'Be Bold' webinars fell from 71 individuals at the first event to only 4 at the last one (although it is possible that others viewed the recordings of the webinars later).

One important further impact mentioned in the interviews is that offering the programme signals to employees that the business is interested in supporting their career development – something that may itself contribute to staff motivation and retention.

Project timeline



Potential for further testing

It is clear from the qualitative interviews that some participants highly valued the 'Be Bold' and 'Unlocking Potential' programmes and had realised tangible benefits from them. On the other hand, it also appears that the majority of those who signed up for the programmes were not sufficiently motivated by the initial stages to follow them through to completion. Given that the programmes are delivered fully online with low marginal cost, it may be cost-effective to offer them at a larger scale even if only a minority will benefit.

This project helped to identify ways in which the content of the programme could be adapted, and The Career Innovation Company reports that completion rates have since increased. However, these more recent efforts have focused on larger businesses: the Company does not have

plans to try engaging more SMEs in this programme, because of the overheads involved.

Wider learning

Recruitment of SMEs

The project team sought to recruit SMEs via intermediaries such as professional organisations and banks. However, procedural and administrative barriers made it difficult to establish partnerships with these organisations within the time constraints of this project. The key partnership that the team were able to develop was with the Law Society, where staff made direct contact with firms that they knew were looking to grow and improve their productivity. Nine of the 11 SMEs that participated in the project were law firms recruited via the Law Society.

Data-led approach to improving productivity via tailored messaging

Research question	Can publicly available data sources be combined with data derived from SME websites to identify and target SMEs that are likely to have low productivity? Does targeted messaging prompt low-productivity SMEs to take action to understand their productivity?
Project lead	Leeds City Region Enterprise Partnership/West Yorkshire Combined Authority
Grant amount	£59,000
Number of SMEs participating: Target Recruited	Not applicable
Location	Leeds City Region
Business size	SMEs with 3 or more employees
Business sector	All sectors
Barriers addressed	Lack of awareness of low productivity as a problem, lack of awareness of support available.
Intervention	Not applicable: project was testing the potential to improve the targeting of future interventions.
Evaluation design	Proof-of-concept/feasibility study for machine learning model RCT for messaging trial
Outcome areas	Data availability
Evidence of impact	No evidence from the messaging trial: sample size was very small. (Project was not designed to demonstrate causal impact.)
Potential for further testing	The use of novel data sources and machine-learning approaches to identify low-productivity SMEs remains an idea with great potential, which can be tested and applied further in the future.
Further information	Evaluation report

Rationale

This project was designed to investigate the potential to utilise new data methods to help address 3 common problems for efforts to encourage SMES to improve their productivity. Firstly, SMEs tend to overestimate their performance relative to their peers and so do not realise that they

have potential to improve their productivity. Secondly, even if motivated to make changes, SMEs may not be aware of what support is available. Finally, policymakers seeking to address these barriers are not able to identify and reach SMEs that could benefit. This phenomenon has been documented among SMEs nationally, and has been observed by the project

implementers specifically among SMEs in Leeds City Region.

The aim of this project was to explore the potential use of novel data sources and methods (such as machine learning models) to identify SMEs that are likely to have low productivity, and whether this approach would make it possible to target such SMEs with messages prompting them to seek information about their productivity.

Implementation

The West Yorkshire Combined Authority had already established its own database of SMEs in the region prior to the project. Information had been sourced from a range of public and commercial data sources, including:

- Productivity: estimated GVA per employee, from company accounts)
- Innovation: R&D spend recorded in accounts, and grants received from Innovate UK
- Exporting: from HMRC’s published list of non-EU exporters
- Identification of high-growth business, based on ScaleUp Institute data and/or company accounts.

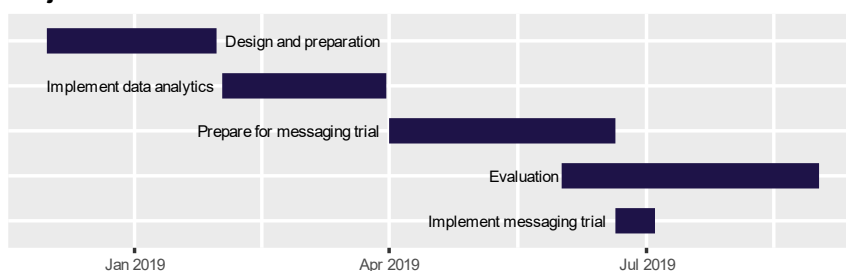
However, the Combined Authority’s database was limited in its coverage of the businesses in the region and in only containing rough and partial measures for productivity and its drivers. There are over 135,000 SMES in the Leeds City Region (most of which are very small businesses), but there was only sufficient data to estimate productivity for around 2,200 of these. One problem was that most SMEs only register very limited accounts with Companies House. The other data sources also excluded SMEs and relevant activities. For example, formal R&D only

represents one type of innovation activity and is not normally a useful indicator in smaller businesses.

Under the first phase of the project, the Combined Authority’s database was to be matched with the substantial database of content obtained from company websites by the machine learning specialists Glass.ai. Compared to the existing work by the Combined Authority, the database created by Glass.ai offered the potential to capture a much wider range of business activities and from a much larger sample of businesses. However, in order to reach those with low productivity, the decision was taken to focus only on enhancing the breadth of information for SMEs for which the Combined Authority had already been able to estimate productivity.

Of the nearly 2,200 SMEs with productivity data, it was possible to match 1,360 to the Glass.ai database. Glass.ai analysed text on company websites to identify the presence of words that were associated with drivers of productivity: exporting, innovation, awards, patents and certification. They were then able to examine which of these were associated with SMEs being in the upper or lower ends of the productivity distribution within their sector. The analysis indicates the potential value of this data for directing policy action and has provided the basis for further work within the Combined Authority. The immediate value was, however, limited by the small sample size, lack of longitudinal data and not having the scope to test with a new sample.

Project timeline



The project's second phase consisted of a small pilot to explore the potential effectiveness of targeting low productivity SMEs with behaviourally-informed messages that were aimed at increasing their engagement with business support. Emails were sent to businesses, encouraging them to make use of the Office for National Statistics' benchmarking tool to assess their productivity and compare it with others in their sector. This was chosen as an action that would help to address the problem that SMEs are not aware of how their productivity compares to their peers.

The decision was taken to make this a very limited pilot, focusing only on 236 low-productivity SMEs that had been identified in the first phase and for which email addresses were available. Two alternative messages were used in the first line of the email, testing a message based on the idea that their peers may be a source of inspiration ("Some businesses in the Leeds City Region are among the most productive businesses in the UK. Are you one of those businesses?") against one based on the principle of loss aversion ("Don't fall behind your competitors").

In the event, only 17% of the recipients opened the email, and 2% (4 individuals) clicked through to the ONS tool. Three of the 4 recipients who clicked through had received the message with the loss-aversion framing, but the difference is too small to conclude that this message was more effective than the other one.

Potential for further testing

This project, given its small scale, was only able to take some first steps to explore the potential value of information that can be obtained from business websites and through utilising textual analysis. There are opportunities to develop the work further,

taking advantage of subsequent advances in data analytics for business growth and innovation. For example, Nesta researchers have since used business website data to better understand business activities and through this exposure to the COVID-19 pandemic.²⁶

In future testing, it may not be necessary to limit the sample by focusing only on businesses for which there is complete data. For example, it could have been possible to train the machine-learning model on the sample of businesses for which the Combined Authority had the complete data to compare against known productivity levels, and then test it on the wider dataset. Similarly, the messaging trials could have involved a much larger number of businesses, such as all of those SMEs that had been identified by the model as likely to have low productivity.

The messaging trials may also have proved more effective if tied to a more substantive offer of support such as innovation funding or a business training programme, rather than the simple online tool used for this pilot.

Wider learning

Messaging around productivity

The project team identified that the concept of 'productivity' is not widely used or understood by SMEs and would seem too abstract to use in communications. While the messaging that was tested in this project did refer to productivity, the team highlighted that a better way to motivate SMEs may be to refer to more tangible activities – such as exporting or adopting new technologies – which are nevertheless known to be associated with productivity.

²⁶ Bishop A and Mateos-Garcia J (2020) '[Measuring the economic impact of Covid-19 in the UK with business website data](#)'

Productivity support

The Combined Authority has continued work to deliver support to raise productivity that builds on the learning from this project. Having delivered two rounds of a 'Productivity Pilot', they are looking at establishing a larger Business Productivity Programme that will combine expert analysis of current productivity performance

and characteristics with business-led productivity action plans on how they can improve their productivity performance. They are also continuing to explore how firm-level data and innovative machine learning techniques can help target future business support interventions in the region, and the role of behavioural insights in communications.

Technology foresight for growth and productivity

Research question	Can managers of SMEs in the digital health sector use a technology foresight process to improve their investments in new technologies and their long term productivity?
Project lead	Kingston University London
Grant amount	£48,000
Number of SMEs participating:	
Target	15
Recruited	14
Location	Greater London
Business size	All SMEs
Business sector	Digital health sector
Barriers addressed	Lack of awareness of technologies, lack of awareness/knowledge of potential benefits, risk aversion, lack of access to trusted advice.
Intervention	Technology foresight process, assessing the suitability of digital technologies for SMEs.
Evaluation design	Ex-post feedback from participants
Outcome areas	Technology adoption
Evidence of impact	Positive feedback from some participants, but high attrition through the process. (Project was not designed to demonstrate causal impact.)
Potential for further testing	Further testing at a small scale would be required, to examine how much influence the process is on managers' adoption decisions.
Further information	Evaluation report

Rationale

Businesses are often deterred from investing in emerging technologies by uncertainty about the potential impacts on their business. This uncertainty is particularly acute for SMEs because they tend to have less access to knowledge than larger businesses do about the way that new technologies are evolving. There are significant costs to identifying and engaging with experts who could provide information, and those experts also face search costs to

find and establish beneficial collaborations. At the same time, SMEs in specialist sectors often operate in clusters of interconnected businesses, in which it may be necessary for various actors to adopt a technology for its potential to be realised.

This project involved working with a group of SMEs in one such cluster – digital health services – and using a ‘technology foresight’ approach to align on the challenges and opportunities presented by

new technologies and to coordinate their steps towards adoption.

Intervention

The project team worked with the Digital Health London Accelerator to recruit 14 London-based SMEs that are active in the digital healthcare sector. Concurrently, they reviewed the scientific literature and sector-specific news sources to identify a list of 26 technologies that were thought to have potential for driving growth in the sector, particularly among SMEs.

The specific approach to technology foresight used in this project is known as the 'Delphi' method. Each of the SME participants was asked to rate each of the 26 technologies for attractiveness (taking account of the potential benefits of each, as well as the probability that those benefits will be realised) and for feasibility of adoption by SMEs. Ratings were also provided by 6 independent subject-matter experts. The aggregated ratings were then shared with the participants, who were asked to provide any feedback and to revise their ratings accordingly. All 14 of the SMEs provided initial ratings. Nine of those provided ratings and the second stage, but only 4 altered any of their original ratings, so there was little change in the aggregate scores allocated to the different technologies. Overall, this process found broad consensus between the SMEs and the experts on 4 technologies that were seen as both highly attractive and feasible to adopt: artificial intelligence, big data, smart devices and internet of things.

In the final phase of the project, the SME participants and the technology experts were invited to take part in two workshops. The first workshop involved reviewing the outcomes of the Delphi process and coming to a joint view about the barriers and

enablers of technology innovation in the sector. The second workshop explored options for SMEs to coordinate in taking action to adopt and further develop suitable technologies.

Evaluation design

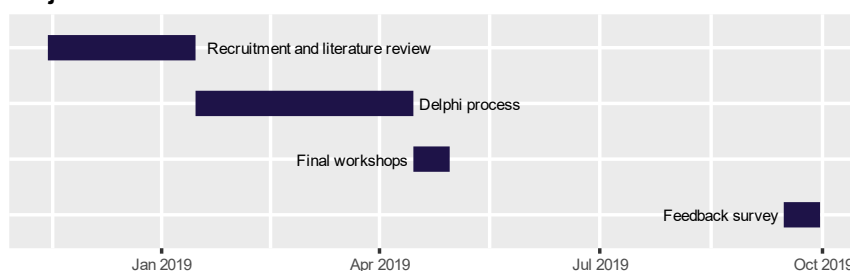
Feedback from the SME managers who participated in the project was collected at the final workshop. A second feedback survey was sent to all participants several months later; 11 of the 14 SME managers responded to this survey.

Impacts

The feedback surveys confirmed that the SME managers had a good understanding of the technology foresight process and were well equipped to participate. Six of the 11 respondents said that they had already invested in one of the 4 technologies highlighted during the foresight process, and most were considering investing in the coming years. Most respondents (8 of the 11) said that they had found the foresight process at least somewhat helpful, particularly in helping to assess technologies and identify next steps. Although few of them changed the ratings they gave to the technologies between the first and second stages of the process, it appears that having access to the aggregated scores at least increased their confidence that their judgements about the most appropriate technologies were correct.

The fact that only 5 of the 14 SMEs were represented at the final workshops may seem a negative indicator about the value participants gained from the process.

Project timeline



However, the project team believe that this was more due to difficulties with scheduling the workshops. For contractual reasons, the Delphi process had to be carried out within a two-month period, which was seen as putting excessive pressure on the participants and not allowing enough time for reflection.

Potential for further testing

The project team concluded from this experience that an SME would not have the capacity or resources to lead a technology foresight process, so outside organisations can play a valuable role in funding and coordinating the work. However, we believe that more testing and evaluation at small scale would be required to understand better how much value participants gain from this process and how it affects their decisions about the adoption of new

technologies. Some SMEs appear to have gained new insight from the process, while others had their existing beliefs confirmed: it would be valuable to investigate the impacts on these two different groups, and – at a later stage – to consider how to identify and target those who have most potential to benefit.

Another area to explore would be the extent that participating in the Delphi process derives benefits to SMEs over the access to the outputs produced. Much of the benefit could come from the exchanges with the technological experts and greater engagement from being an active participant. On the other hand, perhaps similar benefits can be obtained at lower cost by providing SMEs with access to the outputs once they are finalised.

Ideact: Design thinking training for SMEs

Research question	For low/mid-productivity engineering and industrial SMEs, is a design thinking training programme more impactful in changing perceptions of innovativeness than an conventional SME business support training program?
Project lead	Tenshi Consulting
Delivery partners	Imperial College London, Lloyd's Register Foundation, Coast to Capital Local Enterprise Partnership
Grant amount	£59,000
Number of SMEs participating:	
Target	20
Recruited	10 who completed the programme (plus more in subsequent cohorts, not covered by the BBF funding)
Location	South East England
Business size	All SMEs
Business sector	All sectors
Barriers addressed	Lack of awareness/knowledge about benefits.
Intervention	Facilitated training programme on design thinking.
Evaluation design	Qualitative assessment and pre/post comparison of self-assessed outcomes
Outcome areas	Openness to use of design thinking.
Evidence of impact	Positive feedback from participants. (Project was not designed to demonstrate causal impact.)
Potential for further testing	High potential. This is a promising intervention and is amenable to testing through an RCT.
Further information	Evaluation report

Rationale

Design thinking is an approach to solving problems creatively and generating new products, services, and systems. It involves putting the experience of the user at the centre and iterating between phases of discovery, coming up with ideas, prototyping and testing, problem solving and implementation. The use of design thinking in large businesses has been found to lead to innovative thinking, creative confidence, and the adoption of human-

centred solutions, with a consequent positive impact on productivity. A few policy interventions intended to encourage adoption among SMEs have been delivered in the UK, such as the Design Council's 'Designing Demand'. However, there has as yet been little attempt to provide widespread training on design thinking for SMEs nor to robustly evaluate its impact. Although there appears to be potential for SMEs to benefit, SME owners and managers are less likely to have had

exposure to design thinking and therefore to seek out opportunities for training.

Intervention

The Ideact training programme consisted of 12 modules, run over 12 consecutive weeks. Each week participants were expected to complete between two and 4 hours of reading and viewing training videos, and to participate in a one-hour session of face-to-face coaching and peer-to-peer discussion. The programme emphasised learning by doing, with participants applying design thinking approaches to a project relevant to their business. Since it was launched after the onset of the COVID-19 pandemic, the course was held fully online.

The original plan was to charge a fee of £600 for participation in the programme (this being the fee charged by the Coast to Coast LEP (C2C) for an alternative business training course). Due to reservations about this from C2C and after experiencing difficulties with recruitment, the decision was made to drop the course fee and instead offer the opportunity to purchase a certificate at the end of the course for £50.

Evaluation design

This was developed as a small exploratory pilot to investigate the potential of the proposed intervention and whether its evaluation through an RCT is feasible, and how this would be best delivered. The project leads noted the lack of existing information to determine the practicality and feasibility of a larger trial or outcome measures to provide the basis for estimation of necessary sample sizes.

The evaluation of the pilot was carried out through a focus group of participants on the Ideact training, held by the facilitators as part of

the final session. This was complemented by data from questionnaires carried out before and after the programme, covering participants' self-assessments of the innovativeness of their business and their openness to applying design thinking.

The pilot also involved providing a programme of traditional business training to a comparison group. Participants were recruited separately for each of the two programmes, using marketing messages that were specific to those programmes, so we should not expect the characteristics of the participants or their businesses to have been similar before the programme. In any case, the comparison group was not used as a benchmark for understanding the impact of the intervention in the final project report.

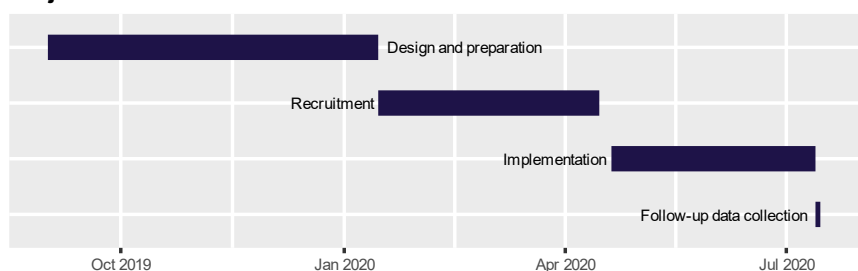
Impacts

Feedback from participants who completed the Ideact programme was generally very positive, both about the utility of the tools and techniques taught and about the structure of the course. Respondents' self-assessments at the end of the course suggest that their perceptions of how innovative their businesses are had increased significantly. Participants in a further two cohorts of the Ideact programme (not funded by BBF, and not all of whom were from SMEs) also noted that the programme had increased their levels of confidence and resilience.

Potential for further testing

The Ideact programme was successfully delivered to a cohort of SME participants,

Project timeline



who provided very positive feedback on the structure and content of the course. This is a promising programme that has clear potential to be tested at a larger scale. Conducting a full-scale trial would involve significant preparatory work, to understand how best to attract SMEs to participate in the programme, whether to charge them a fee for participation, and what outcome measures to use. However, this would be a worthwhile investment, given that there has as yet been no rigorous study of the impacts of the use of design thinking among SMEs but apparently growing interest in its policy application.

Wider learning

Recruitment of SMEs

The intervention was originally targeted at engineering and industrial SMEs with low or middling productivity, which were intended to be recruited by the Coast to Capital LEP (C2C). In the event, C2C's existing database proved not to be suitable for this purpose, so the recruitment criteria were loosened (such that any SME in south-east England was eligible) and the channels were expanded to cover promotion at live events, social media, and through direct email marketing. Even after making these adjustments, only small numbers of SMEs signed up, even before the onset of the COVID-19 crisis. Significant efforts would be needed to communicate the potential benefits of design thinking to SMEs to attract sufficient participants for a larger-scale trial.

Digital Benchmark Index

Research question	Can benchmarking be an effective means to motivate the adoption of new-to-firm digital technology?
Project lead	Winning Moves
Delivery partners	Aston University; Birmingham & Solihull, Sheffield City Region and North East Growth Hubs
Grant amount	£39,000
Number of SMEs participating:	
Target	90
Recruited	98
Location	Birmingham & Solihull, Sheffield and North East England
Business size	Up to 249 employees
Business sector	All sectors
Barriers addressed	Lack of awareness/knowledge of benefits, lack of access to trusted advice, resource constraints.
Intervention	Diagnostic and benchmarking on technology adoption.
Evaluation design	Ex-post survey only
Outcome areas	Technology adoption
Evidence of impact	Positive feedback from many participants, although the majority did not respond to the survey. (Project was not designed to demonstrate causal impact.)
Potential for further testing	High potential. This is a promising intervention and is suitable for testing in an RCT. This pilot has demonstrated that there is demand from SMEs and that Growth Hubs are positive about delivering it.

Rationale

Winning Moves has long provided a Benchmark Index service to enterprise development bodies, business support organisations, and direct to SMEs, helping them businesses to understand where they are succeeding and where there is potential for them to make improvements that will lead to increased productivity and growth. This project was designed to harness the potential of benchmarking to drive adoption of digital technologies. Specifically, it was hoped that a benchmarking exercise would address low levels of awareness about

digital technologies among SME owners and managers, while overcoming their doubts about the risks and potential return on investment available.

The Digital Benchmarking Index was designed to be implemented by generalist advisers rather than technology specialists, giving it the potential to be implemented at scale.

Intervention

Prior to this project, Winning Moves had carried out research into how SMEs can use digital technology effectively and

identified 5 key drivers of digital transformation within a business: value drivers, value creators, value capture, value delivery and value protection. The Digital Benchmarking Index developed for this project involved asking businesses a series of questions about their systems, processes, and behaviours in each of these 5 dimensions. Responses to these questions allow the businesses' level of digital maturity in each dimension to be rated on a 4 point scale – either 'accidental', 'experimental', 'active' or 'optimised'. Where possible, information from the questionnaire is also used to make an assessment of potential financial gains/losses from taking action.

The Digital Benchmark Index was implemented in the course of an interview with an adviser from the local Growth Hub. The adviser used the responses to complete a structured questionnaire and generate a benchmarking report. This report was then discussed in a follow-up meeting with the business. The aim of these meetings was to draw up an action plan for the business to move towards adoption of appropriate technologies. If appropriate, advisers could also introduce the businesses to technology providers, or provide further assistance in the adoption process.

A total of 98 SMEs were recruited for the project, across the areas served by the three Growth Hubs. The project was targeted primarily at microbusinesses, with around two thirds of those that provided data on their business size falling into this category. There were some differences in the profile of businesses recruited in the three regions, but this is likely to reflect the existing networks of the Growth Hubs.

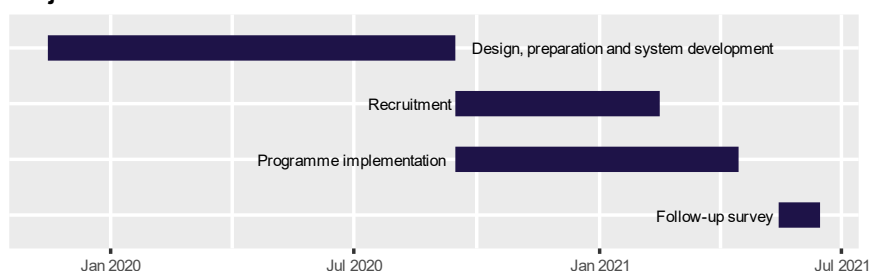
Evaluation design

The evaluation of the Digital Benchmark Index was based on a single survey carried out around 2 months after the intervention, asking participant SMEs about their level of knowledge of digital technology, their current usage and plans to adopt digital technologies, and their satisfaction with the process. Unfortunately, only 30 of the 98 participants completed this final survey, even after the survey was scaled down and switched from being conducted by telephone rather than online (in particular, only 3 of the 20 participants from the Sheffield City Region replied). It was only possible to compare the responses with baseline data in one respect, the respondents' self-evaluation of their knowledge about digital technologies. Qualitative interviews were also carried out with several of the Growth Hub advisers who implemented the Digital Benchmark Index.

Impacts

Among the 30 participants who completed the final survey, the majority provided positive feedback about the Digital Benchmark Index and its impact on their business. For example, most said that their level of knowledge about specific digital technologies had increased since they participated in the project, and two thirds said that they would recommend the process to others. 24 of the 30 respondents said that they had either taken steps towards adopting or upgrading at least one technology in their business or were planning to do so. In subsequent interviews,

Project timeline



the Growth Hub advisers also cited cases of SMEs going on to adopt new technology, and most believed that this would not have happened without this project. On the other hand, around a third of the SMEs that responded to the survey felt neutral or less positive about the benefits of the Digital Benchmark Index. In any case, given that only a minority of the project participants completed the final survey, these results should be interpreted with caution: it is possible that those who had strong opinions (either positive or negative) about the process were more likely to have responded to the survey.

There was no consensus between the Growth Hub advisers on which types of business are most suited to the Digital Business Index, but they noted that it would be useful to customise the questionnaire for businesses of different sizes.

Potential for further testing

This project was successful in demonstrating that the Digital Benchmark Index could be implemented at scale by generalist advisers, and that it was received positively by many of the businesses

served. There is also an initial indication that many of the participants took some action towards digital adoption as a result. Given that the Digital Breakthrough South East project also produced positive indications about the potential of benchmarking to drive digital adoption, we believe that it would be useful to subject this to a larger-scale test, comparing the use of benchmarking with existing forms of advice provided by Growth Hubs.

Winning Moves have proposed two extensions to build on the experience of this project by testing the use of benchmarking in two larger-scale experiments. One would test the benefits of following up on the Digital Benchmark Index process with an intensive programme of training and support to participant businesses in digital adoption. The second proposal would test the use of benchmarking to other areas (such as strategic development, talent acquisition and exporting), comparing the benchmarking process to a standard diagnostic review from a Growth Hub. These are both potentially fruitful areas for investigation.

Investing in SME productivity growth by developing their performance management capability

Research question	Can a set of mixed intensity interventions assist manufacturing SMEs develop feasible productivity improvement plans and associated performance management practices?
Project lead	Leeds Beckett University
Delivery partners	Kirk Newsholme, Lloyds Bank, Fluere Limited
Grant amount	£60,000
Number of SMEs participating:	
Target	20
Recruited	18
Location	Yorkshire
Business size	Any SME
Business sector	Manufacturing
Barriers addressed	Lack of performance management capability.
Intervention	Workshops and one-to-one support on improving productivity.
Evaluation design	Qualitative assessment
Outcome areas	Performance management capacity
Evidence of impact	Positive feedback from participants, but high attrition through the process. Only one SME produced a workable productivity improvement plan. (Project was not designed to demonstrate causal impact.)
Potential for further testing	Intervention requires adaptation to fit better with the capacity of typical manufacturing SMEs before being tested again.

Rationale

This project was driven by the observation that performance management in SMEs tends to be weak, meaning that businesses do not have a good overview of their productivity and are not able to analyse what steps they can take to improve it. The project sought to build SMEs' capabilities in 4 areas: understanding the nature of productivity and how to measure it, identifying business processes that impact

productivity, generating management information, and using that information to carry out strategic planning for improvements in productivity. The first two areas were addressed through a diagnostic process led by expert facilitators, who then supported businesses in learning how to produce management information and to put it to use in drawing up a strategic plan. The programme was designed so that the SMEs took more responsibility for the

actions and more ownership of the decisions as the process went on.

Intervention

The programme was designed and implemented by a consortium of private sector companies with a commercial interest in promoting SME productivity (a high-street bank, an accountancy firm and a management consulting firm), along with staff from Leeds Beckett University. Eighteen manufacturing SMEs were recruited onto the programme, selected by the delivery partners from among their existing clients. Priority was given in this selection process to SMEs that were thought to have high potential to benefit – that is, those with below-average productivity but with high willingness to engage in the programme.

The intervention was delivered through a mixture of workshops, site visits and one-to-one discussions with expert facilitators. After an orientation workshop to introduce the concept of multi-factor productivity, the facilitators carried out site visits to each participating SME, working with them on assessing their existing business processes and on planning how to collect data to establish a measure of productivity. A second workshop focused on the analysis and visualisation of productivity data, following which the experts met with the individual SMEs again to guide them on preparing a productivity improvement plan. SMEs were given several weeks to complete these plans, which they then submitted to the experts for review and feedback. A final workshop included a further opportunity to discuss the implementation of the improvement plans, as well as to reflect on learning throughout the programme.

The initial stages of the process were carried out in person in early 2020.

Implementation was then paused during the peak of the COVID-19 crisis, before resuming with the second round of interactions with the experts and the final workshops carried out remotely.

A key focus of the project was on developing the tools to be used in the interactions with participants, including a diagnostic scorecard, data extraction protocol and a checklist for assessing the quality of the productivity improvement plans.

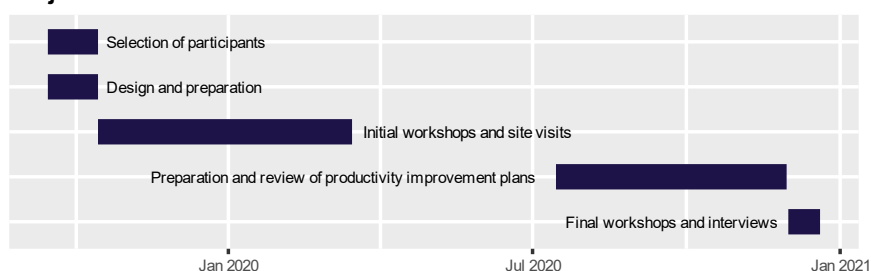
Evaluation design

The evaluation focused on the design and implementation of the intervention, applying a case-study approach to review the appropriateness and success of each of the activities throughout the project's lifetime. Detailed interviews were conducted at the end of the project with the 5 SMEs that participated in all the stages, as well as with the implementing partners.

Impacts

Despite having been carefully selected based on their willingness and capacity to engage in the programme, there was significant attrition during the process. 18 SMEs began the programme, but only 10 participated in the second workshop, and only 5 reached the stage of preparing productivity improvement plans. Three of the 13 businesses that withdrew cited the pandemic as a reason; the others had other priorities or felt that the project did not align with their goals. Among the 5 SMEs that participated in the whole process, only one or two staff members were involved, which

Project timeline



was again below the expectations of the delivery partners.

Of the 5 productivity improvement plans submitted by SMEs, only one was considered by the expert advisers to be 'feasible', in that they would themselves approve taking action on the steps defined. The 4 other plans were seen to be lacking in various respects, particularly in having a clear description of the methods for improvement, the use of visualisation, and project management processes.

More positively, representatives of the 5 businesses did feel that they had made progress in terms of performance management capability as a result of the project. They all said that they intended to continue with efforts to improve productivity that they had initiated with this project. Some of the businesses were concerned about their internal capacity to make improvements, but expressed willingness to pay for productivity coaching.

Potential for further testing

This was an early-stage test of a new initiative for working with manufacturing SMEs. The results show that some businesses were able to make effective use of the support to begin the process of improving their productivity, but further work is needed on the design of the intervention to ensure that the contents are better aligned with the capacity and current capabilities of SMEs. For example, participants and the implementing partners noted that integrating more feedback loops into the intervention could have improved the outcomes. A possible approach for the future suggested by the implementers would be to start with a larger pool of SMEs that are interested in the programme and use the initial stages of the intervention to identify those that are ready to benefit. A revised programme should be subject to another small pilot before any potential scale-up.

Lifestyle behaviour change interventions for employee health and SME productivity

Research question	Can SME productivity be increased by using a tailored (evidence-based) one-to-one approach for improving staff health and wellbeing?
Project lead	Sheffield Hallam University
Grant amount	£48,000
Number of SMEs participating:	
Target	9–12 SMEs (51 individuals)
Recruited	10 SMEs (50 individuals)
Location	Sheffield City Region
Business size	Small businesses (<50 employees)
Business sector	Manufacturing
Barriers addressed	Employee health and wellbeing.
Intervention	Health and lifestyle assessment for employees.
Evaluation design	Pre/post and qualitative assessment
Outcome areas	Health and wellbeing, employee productivity.
Evidence of impact	Positive feedback from participants. (Project was not designed to demonstrate causal impact.)
Potential for further testing	High potential. This is a promising intervention and is amenable to testing through an RCT.

Rationale

Research suggests that the health and wellbeing of employees is an important contributor to business productivity, but SMEs do not tend to invest in formal wellbeing programmes for their staff. This project sought to test whether a health and lifestyle assessment would result in improved staff wellbeing and productivity.

Intervention

Employees of manufacturing SMEs in the Sheffield City Region were offered a health and lifestyle screening carried out by the Sport and Physical Activity Research Centre at Sheffield Hallam University. Two

versions of the screening were tested: a 30-minute session involved measuring the individual's anthropometric characteristics, blood pressure, lipid profile, blood glucose and resting heart rate, while a 60-minute version additionally included a test of lung function and aerobic capacity.

Approximately half the time in the sessions was used to provide personalised feedback, to set goals for change, and to provide guidance on techniques for achieving and maintaining behaviour change. Participants then received a reminder of these goals 2 weeks after the appointment.

Evaluation design

The project was originally designed as a small-scale pilot of a randomised experiment. SMEs recruited into the project were randomly assigned into three groups. Employees of SMEs in the first two groups received a health and lifestyle screening of 30 minutes or 60 minutes respectively. Screenings were held either at their place of work or at a university site. The third group, the control group, did not receive a screening or any in-person contact with the project team, but were provided with information in the form of leaflets from the British Heart Foundation.

All project participants completed a baseline survey about their health, lifestyle and indicators of workplace productivity. The plan had been for participants to complete a second survey 6 months later, and for participants in the two treatment groups to receive another screening to observe changes in their health-related indicators. Because of the COVID-19 pandemic, this follow-up data collection was delayed until 9 months after the intervention, and for safety reasons could be carried out only at a specific university location. By this time the project team were unable to contact many of the original project participants (in some cases because their company had ceased trading), so only 4 of the original participants were available for the follow-up health screening. An additional 4 members of the control group carried out the follow-up survey.

Impacts

The very small sample size with the follow-up data means that it is not possible to evaluate the impact of the intervention. However, qualitative feedback from those who participated in the follow-up phase suggests that the initial sessions

prompted them to make lifestyle changes which allowed them to cope better with the effects of the lockdown during early 2020.

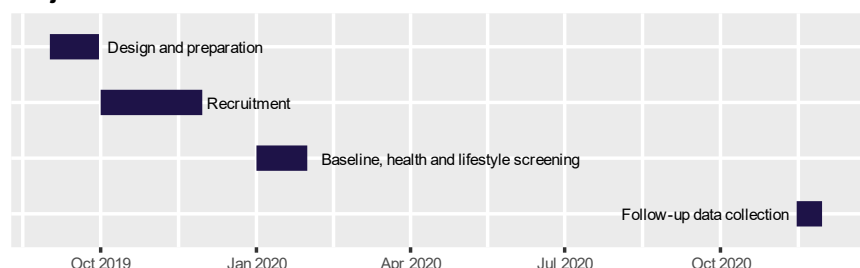
One concern with workplace wellbeing programmes is that they tend to attract those who are already relatively healthy, rather than those most in need. The data from the initial health assessments suggest that this was not the case in this project. For example, two thirds of those assessed were either overweight or obese, and a quarter had high systolic blood pressure. This implies that the intervention at least attracted those who have the potential to benefit.

Potential for further testing

This project demonstrated that it is feasible to carry out the health and lifestyle intervention with employees of small businesses. While it was not possible to assess the impact of the intervention, the characteristics of employees who underwent the initial health and lifestyle screening suggests that they have potential to benefit from the intervention.

This intervention is clearly suitable for testing in a randomised trial, and it seems likely that the increasing public awareness of health and wellbeing resulting from the COVID-19 crisis will increase the demand for such an intervention. A trial could apply a similar structure and similar outcome measures to those used in this proof-of-concept project, with the key point to consider being how to motivate the control group to stay in the project and provide follow-up data.

Project timeline



Wider learning

Recruitment of SMEs

Mailings were sent to networks of manufacturing SMEs in the region, including Sheffield Hallam University's existing network as well as those of the Manufacturing Research Centre, the Manufacturing Breakfast Club, and other organisations. Mailings were sent to 641 businesses, with 84 being followed up by phone, and 10 eventually recruited. The project was also promoted in the Sheffield Chamber of Commerce's newsletter and website and on social media: these are thought to have raised awareness of the

project among SMEs, but did not directly result in any businesses being recruited.

Control group attrition

After being informed of the random allocation, 3 of the 4 companies in the control group (13 of the 19 individuals) withdrew from the study. Following this experience, the project team decided to provide the remaining control group participants with a £10 gift voucher as an incentive for completion of the baseline and follow-up surveys. Four of the 6 individuals then completed both surveys.

Tech Check

Research question	Can a service be developed which has valuable impact on farms by increasing their adoption of technology and therefore business productivity? Can this service be economically viable by returning appropriate value to the farm and to the service provider?
Project lead	Yagro Limited
Grant amount	£59,000
Number of SMEs participating:	
Target	125
Recruited	73
Location	England (nationwide)
Business size	All SMEs
Business sector	Agriculture
Barriers addressed	Lack of awareness/knowledge about benefits, lack of technical skills.
Interventions	Diagnostic survey, one-to-one support, workshops and online resources on technology adoption.
Evaluation design	Pre/post comparison, with qualitative comparison of the 3 treatments
Outcome areas	Technology adoption
Evidence of impact	Indications of positive changes in awareness of technologies and in steps towards adoption. (Project was not designed to demonstrate causal impact.)
Potential for further testing	Potential for two of the interventions carried out under this project to be tested at larger scale: (a) the full digital approach, and (b) the informational workshops, involving interaction with peers and with technology experts.
Further information	Evaluation report

Rationale

In addition to the barriers discussed throughout this report, farming SMEs often face a number of additional challenges to adoption of new technologies. By their nature, farming businesses are geographically spread out, with few opportunities for exchange of ideas and little movement of employees between

them: this means that innovations and best practices do not spread easily. Since they are located in rural areas, they tend to have relatively poor connectivity, whether by broadband or mobile. In addition, the farming workforce tends to be older than in other industries, and most farmers would not consider themselves as 'digital natives'. Yagro designed a technology audit service

– known as Tech Check – to help farms discover, understand, and adopt possible technology solutions to improve their productivity.

Intervention

The Tech Check process began by collecting information from farming SMEs about their current use of technology, either through an online survey or a telephone interview. The participants were then provided with a report about their audit and were invited to receive advice on specific technology areas from subject-matter experts. Seven different technology areas were covered – procurement, benchmarking, grain marketing, precision farming, finance, crop management, and compliance. Yagro recruited specialist consultants to provide advice in all but the last two of these areas.

Three different approaches to implementing the Tech Check were tested:

- Traditional approach: The technology audit was completed in person or over the phone, with subsequent one-to-one calls to discuss the report with a Yagro representative and to receive advice from the technology experts. Participants were entitled to speak to as many of the experts as relevant to their needs: on average they consulted 2.3 of the 5 experts.
- Digital-enabled approach: The technology audit was completed online and the report delivered by email. The participants were then invited to a half-day workshop with the technology experts.

- Full digital approach: The technology audit was completed online and the report delivered by email. The participants were then given access to online videos from the technology experts.

Evaluation design

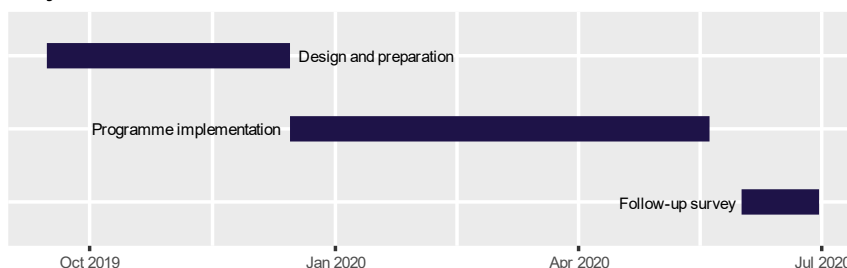
The evaluation is based primarily on a comparison of participants' survey responses before and after the Tech Check intervention. Comparisons of outcomes have also been made between the 3 approaches. However, since participants were allocated to the approaches based on logistical convenience (and in some cases were able to choose which approach they wished to follow), caution must be taken in interpreting comparisons of outcomes between the 3 approaches.

Participants were asked to complete surveys 3 times: before beginning the programme, immediately after the Tech Check intervention was complete, and again a few months later.

Impacts

The pre/post comparison shows a modest increase in participants' assessments of their awareness of the various technologies and in their ability to make informed decisions about adoption, but little change in the perceived usefulness of the technologies. Those in the digitally enabled group were particularly likely to say that the Tech Check intervention had changed their

Project timeline



views about the adoption of technologies, with about 70% saying that they would implement at least some of the recommendations of the audit. Among those in the full digital group, a substantial number (around 40%) said that the intervention had not had a significant impact on their views and that they were not likely to implement the recommendations. By the time of the final survey, there had been some progress in adoption of new technologies, particularly among those in the traditional and digitally enabled groups.

In the final survey, participants were asked which of the 3 approaches would be most appealing to them if they had the opportunity again. Many of those in the traditional approach said that they would select the full digital service, suggesting that they believed that the in-person aspects of the intervention added little value. In contrast, all those who attended the workshops in the digitally enabled group said that they would make the same choice again, and did not feel that a fully online approach could replace this. It appears, then, that the workshops provided as part of the digitally enabled service were particularly valued by participants. Informal feedback suggests that participants particularly valued the opportunity in the workshops to exchange with other farmers about their experience with adoption of new technologies.

In the full digital group, only just over half of those who responded to the post-intervention survey said that they logged in to the platform to view the videos at all, and only a quarter did so more than once. (We would assume that the rates among those who did not respond to the survey are even lower than this.) The participants were free to view the videos at a time convenient to

them, but it appears that the lack of a deadline led to this being continually deprioritised by many of the participants. The in-person workshops or telephone calls used in the traditional and digitally enabled channels may have reinforced participation by creating a social commitment.

Potential for further testing

Two aspects of the Tech Check project are of interest for further testing. Firstly, if the full digital approach can be fully automated and hence delivered at low marginal cost, then it would be worth testing at larger scale. This could be cost-effective even if a minority of the participants do not feel that it was of value – although learning how to target the most appropriate participants would of course be beneficial.

The workshops carried out under the digitally enabled approach seem to have been valued highly by participants, probably as much because they provided an opportunity to exchange experience with peers as the contact with experts. This suggests that providing opportunities for exchange between peers may be an impactful intervention in itself – and this may well apply beyond the farming sector.

Wider learning

Recruitment of SMEs

The project team sought to recruit farming SMEs through advertising in the farming press, social media, and farming industry networks, as well as through direct approaches to SMEs. However, most of the businesses that participated in the project were recruited from Yagro's existing contacts list. Paid advertising was a particularly ineffective approach: a full-page front-cover advertisement in 'Farmers Weekly' (a magazine with a circulation of

38,000) generated only one business signing up to the project, as did an email

sent to 7,000 farms by the 'Farmers Guardian'.

Digital Breakthrough South East

Research question	How should Digital Breakthrough processes and tools be optimised to overcome the organisational and personal barriers at the earliest stage of planning for adoption of data and digital technologies?
Project lead	EDGE Digital Manufacturing Limited
Grant amount	£60,000
Number of SMEs participating:	
Target	40
Recruited	39
Location	England (nationwide, expanded from original focus on the South East)
Business size	All SMEs
Business sector	Manufacturing
Barriers addressed	Lack of awareness/understanding of potential benefits, lack of management capacity, high perceived cost, lack of technical skills.
Intervention	Diagnostic process and small-group workshops.
Evaluation design	Difference-in-difference (as designed) Pre/post and qualitative satisfaction survey (as implemented)
Outcome areas	Technology adoption
Evidence of impact	Modest attrition rate and positive feedback from participants. (Project was not designed to demonstrate causal impact.)
Potential for further testing	High potential. This is a promising intervention and is amenable to testing through an RCT, possibly as a supplement to an existing programme.
Further information	Evaluation report

Rationale

Digital Breakthrough is a programme that has been developed by EDGE Digital Manufacturing over several years, designed to address the barriers to adoption of new technologies identified in the Made Smarter Review. While many SME managers in the manufacturing sector see the potential for new technologies to improve productivity, they often de-prioritise or delay taking action because of the complex strategic and operational difficulties involved in adoption.

EDGE Digital Manufacturing's experience suggests that businesses are more likely to take up the opportunities available if they can be supported to develop an integrated digital strategy and roadmap.

Intervention

This project involved scaling up delivery of the Digital Breakthrough programme to a cohort of manufacturing SMEs in South East England. The programme involved 5 main stages:

1. Briefing to clarify the aims of the programme and raise awareness of relevant technologies
2. Diagnostic survey to assess the digital readiness of participant companies
3. Digital Business Strategy, a collaborative half-day workshop involving employees of a single company or multiple companies
4. Digital Roadmapping, a second half-day workshop, involving employees of a single company only
5. Referrals to other organisations for further support in adoption of digital technologies.

An important element of the programme was that stakeholders from across the business should be involved in developing the strategy. On average, 3 individuals from each business directly participated in the programme activities.

The original plan for the DBSE project was to test the use of on-site against online delivery. However, this plan was disrupted by the COVID-19 pandemic: the first on-site workshops took place in March 2020, but implementation then had to be paused before resuming fully online later in the year.

Evaluation design

The project was designed as a difference-in-difference evaluation, with a control group of non-participants and 4 treatment groups, testing single versus multi-company online events (for the Digital Briefing and Digital Strategy

workshop) and on-site versus online events (for the Digital Roadmap workshop). The allocation of participants between versions of the treatment depended on when they were recruited into the project.

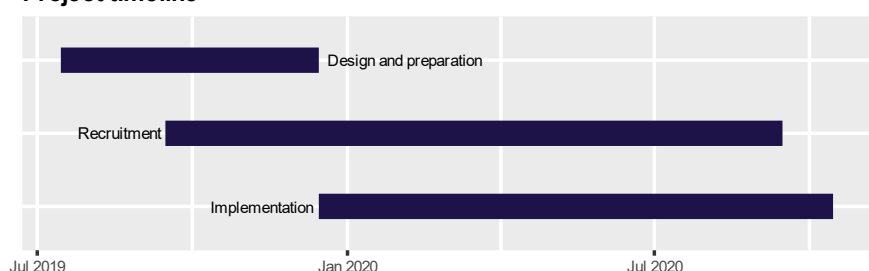
The use of the control group was abandoned at the onset of the pandemic, and the intervention switched to being delivered fully online. At that time only 3 businesses had participated in an on-site Digital Roadmap workshop. However, the split between single versus multi-company events for the Digital Briefing and Digital Strategy workshops was retained throughout the project.

Participants were surveyed after the programme about their satisfaction and feedback on the intervention. A small number of participants also repeated the Digital Readiness Level assessment, providing data on the change over time.

Impacts

Feedback from the participants in the Digital Breakthrough process was generally positive, with all participants reporting that it had increased their willingness to use data and digital technologies. Participants from 7 companies (those that finished the programme relatively early) retook the Digital Readiness Level assessment around 3 months after the programme. The scores had increased in each case, with an average increase of 75%. More than 80% of the DBSE completers, as well as a few of

Project timeline



the non-completers, went on to engage with EDGE Digital Manufacturing in support of their digital transformation objectives.

Some participants apparently hoped to receive more specialist advice to fix a specific problem with an existing technology, something that was not within the remit of this programme. The implementers will seek to make this clearer in the introductory stages in the future.

Potential for further testing

The Digital Breakthrough programme was successfully delivered to a range of manufacturing SMEs, who provided largely positive feedback on the experience. Following this project, EDGE Digital Manufacturing has also partnered with Worcestershire County Council to include the DBSE approach in a digital adoption programme. There is potential for DBSE to be tested at larger scale, perhaps as a supplement to an existing service or programme promoting digital adoption, such as Made Smarter or Be the Business Digital. Careful consideration would need to be given as to whether participants should be required to pay for part of the cost of delivery in a scaled-up programme.

Wider learning

Recruitment of SMEs

The implementer relied on their network of associates and institutions – such as universities, LEPs and trade associations – to reach SMEs. The project was also promoted through events organised by these partners, online webinars, and a limited recruitment campaign, which resulted in modest numbers of SMEs being recruited.

Peer-to-peer interaction

Participants expressed mixed views on whether the Digital Strategy workshops are best carried out with participants from multiple businesses or restricted to a single business. Some welcomed the opportunity for exchanging experiences between peers, but others were concerned that they would not be able to be as open about their needs in front of other businesses, and that their own needs are very specific. The project team believe that the optimal approach would have been to split this workshop, starting with a single-company session and then following up with a session attended by multiple companies; this would then be followed by the Digital Roadmapping session again with participants from a single company. A scaled-up programme would provide potential for scheduling sessions with multiple companies that are not direct competitors but that have enough similarity of interests to make for productive discussions.

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