

SQW

Impact of BtB SME support

Econometric evidence

August 2024



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Impacts of Be the Business in three figures:

By end of 2023

c. 2,600

SMEs supported

on key high and medium-intensity BtB programmes

which created

c. 9.5k

additional jobs

further 5.5k expected over next 3 years

and generated

£515m

additional GVA

with c. £400m more expected over next 3 years

Summary – impacts of BtB on growth of supported SMEs

- **Net impacts of BtB support on employment, turnover and labour productivity (turnover per employee) of SMEs were assessed via a Difference-in-Differences analysis (DiD)**
 - DiD compares the trends observed among beneficiaries over time to a comparison group. Only the growth that is not seen in among the comparators is attributed to the programme
 - We analysed three alternative high-quality comparison groups selected from the wider business population using Propensity Score Matching (PSM) – a statistical matching technique that allowed us to pick businesses with similar observable characteristics (incl. sector, location, age, pre-support growth and funding from Innovate UK)*
- On average, BtB beneficiaries **experienced statistically significantly higher turnover and employment growth** than they would have had without the support, starting from the year of support and for up to 3 years after that
 - Average **additional employment effects range between c. 3% and c. 7%**, and peak in the year following support
 - Average **additional turnover effects are between c. 3% and c. 10%, and peak three years after support**
- According to programme-level analysis, all BtB programmes had positive statistically significant impacts on employment and turnover of beneficiaries
- The findings are robust to changes in comparison groups
- All statistical models used in the analysis accounted for differences in pre-existing trends which may have remained after statistical matching between beneficiaries and comparison groups and for variation in general macroeconomic conditions over time

*See slide 14 and Annex B for more information on the comparison groups

Summary – impacts on SME productivity

- **The time profile of employment and turnover effects provides evidence of positive productivity impacts materialising, on average, 3 years after participating in BtB programmes**
- Descriptively, average productivity levels (turnover per employee) of beneficiaries lie 4% - 5% higher than the counterfactual trajectory
- **Analysis in relation to one of the comparison groups suggested statistically significant differences in productivity of over 5% (in years 3 and 4 after BtB support)**
- When we investigated the effects on beneficiaries that participated in more than one programme (or repeated the programme), we found :
 - no further turnover effect from the second instance of support (on top of the effect from the first one)
 - repeat beneficiaries tend to revert to the same rate of employment growth as their comparators
- In the longer run, this pattern can be expected to lead to larger productivity improvements among repeat beneficiaries (since turnover growth will likely be achieved with relatively lower levels inputs, including labour)*

* See slide 19 for a more detailed discussion of impacts of repeat support

Summary – aggregate economics effects

- To provide **indicative estimates of aggregate economic effects from BtB programmes to date**, we
 - extrapolated the estimated average effects on employment and turnover to the whole pool of SMEs supported by high/moderate intensity programmes over the period between 2017 and end of 2023 – **c. 2,600 SME in total** – taking into account the average pre-support size of SMEs and growth they would have experienced even in absence of support*
 - accounted for the time profile of programme starts (between 2017 and 2023), and the fact that for later starts the benefits have not been fully realised yet (expected benefits were discounted at 3.5% per year, as per the Green Book guidance)
 - considered sector composition of beneficiaries and the weighted average ratio of Gross Value Added (GVA) to turnover in those sectors (0.43)**
- Estimated net additional impacts, based on the results of econometric analysis, are:

	Realised	Expected	Total
Additional employment	c. 9,500	c. 5,600	c. 15,100
Additional turnover (real terms, £2023/24)	c. £1,191m	c. 916m	c. £2,107m
Additional GVA (real terms, £2023/24)	c. £516m	c. £397m	c. £913m

* High/moderate intensity programmes are 12-month and 12-week Mentoring, Boards, Productivity through People, Sparks

**Based on the estimates from the [Annual Business Survey](#)

Background and context

About Be the Business

- Be the Business (BtB), a business-led initiative set up in 2017, aims to **improve the business performance and productivity** of small and medium-sized enterprises (SMEs)
- Over the years BtB has offered a suite of programmes, targeted at improving SMEs' management and leadership (M&L) practices and digital capabilities. These include:
 - **Productivity through People (PtP)**: a ten-month industry-led programme delivered in partnership with UK business schools
 - **Mentoring – 12 months**: a large-scale mentoring programme, supporting relationships between ambitious SME leaders and business leaders and sector experts from top-tier firms*
 - **Mentoring – 12 weeks**: a shorter mentoring scheme, initially launched in response to the Covid-19 pandemic and focussed on increasing resilience and ability to operate in uncertain environments**
 - **Advisory Boards**: a programme providing SMEs with access to an external non-executive Board, which offers tailored advice over four quarterly online meetings
 - **Sparks**: a facilitated peer-learning programme consisting of three 75-minute online workshops
- Since its inception, by the end of December 2023, BtB has supported **c. 2,600 businesses** across UK's regions and sectors of the economy (though its high and medium-intensity programmes)

*12-month Mentoring was formerly known as Mentoring for growth

**12-week Mentoring was initially launched in response to the challenges of Covid-19 under the Rapid Response Mentoring name

Quasi-experimental evidence of BtB impacts

- SQW, the evaluation partner of Be the Business (BtB), undertook **econometric analysis of impacts of BtB programmes on business performance and productivity of SME beneficiaries**
- We followed a **Difference-in-Differences methodology** to estimate average **net impacts on turnover, employment and productivity** (proxied with the ratio of the two) of beneficiaries using administrative data from the Business Structure Database (BSD)*
- The analysis focused on:
 - **Impacts of all BtB activity**, i.e. the effects across all programmes
 - **Programme-level impacts**, considering the effects of Productivity through People (PtP), Mentoring – 12 months, Mentoring – 12 weeks and Advisory Boards separately
- Effects from multiple support (from different programmes, or from repeating 12-month Mentoring) were also investigated
- The findings contribute to the evidence base on effectiveness of BtB programmes (and SME support in relation to M&L practices and technology adoption more generally) for boosting business growth and productivity

* BSD is a research database based on the extracts from the Inter-Departmental Business Register (IDBR). It was accessed through the Office of National Statistics Secure Research Service, SRS (Office for National Statistics, released 05 January 2023, ONS SRS Metadata Catalogue, dataset, Business Structure Database - UK, <https://doi.org/10.52906/7kh0-0910>).

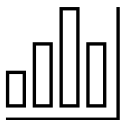
Approach

The econometric analysis is based on BSD data

- The econometric analysis focused on **employment, turnover, and productivity***



- Analysis was underpinned by data from the **ONS Business Structure Database (BSD)**: a subset of data from the Inter-Departmental Business Register (IDBR)
 - The BSD contains information on business characteristics, including their employment and turnover size, geographic location and industry classification
 - Its main sources of data are HMRC (including VAT and PAYE records); ONS and Northern Ireland business surveys and Companies House
 - Businesses are 'linked' to the BSD through their company registration number (CRN)
 - However, **not all companies can be found in the BSD**, due to failure to meet the criteria for inclusion (e.g. being registered for PAYE), or an incorrect or otherwise missing CRN
 - As a result of this, the econometric analysis does not cover all medium/high intensity BtB-supported businesses**



- Additional data sources included: the **Management Expectations Survey 2020** and a **list of Innovate UK-funded businesses**. These provide additional indicators that allowed us to improve the similarity between the beneficiary and comparison groups as well as to create alternative comparison groups with a slightly different focus (e.g. larger companies with better M&L practices) to test robustness of our findings

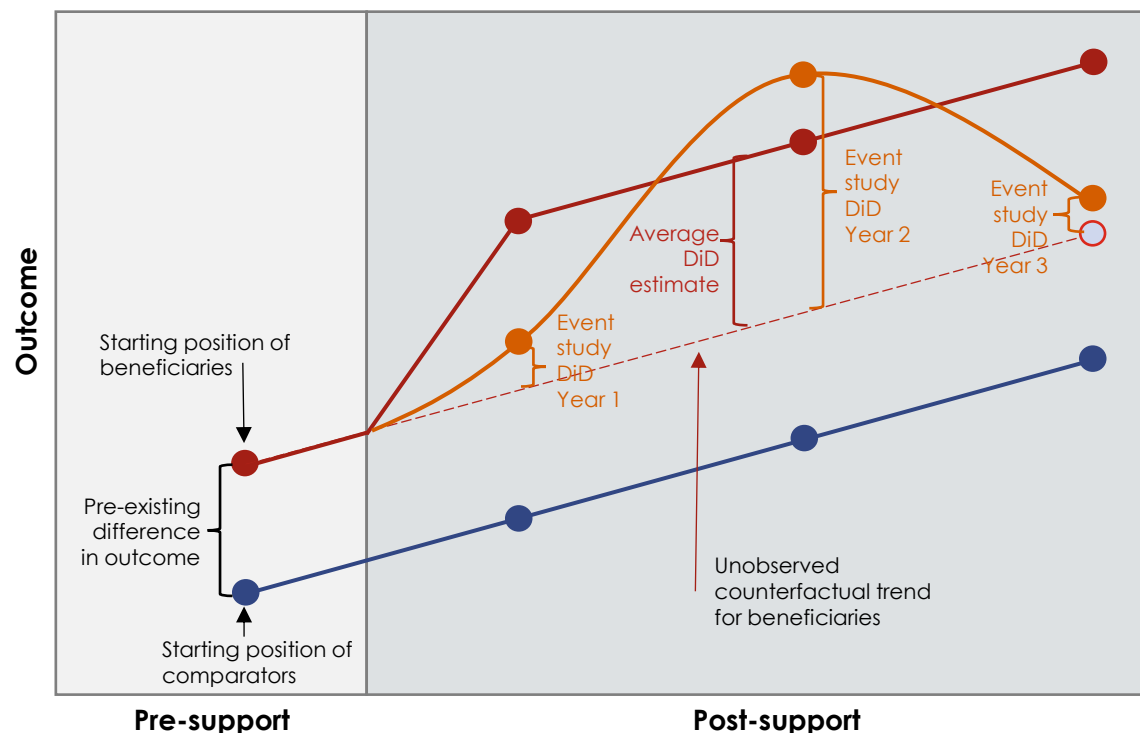


* The analysis looks at *labour productivity*, measures as turnover per employee, rather than the *multi-factor productivity*, which relates a wider range of inputs (e.g. tangible and intangible assets, M&L practices etc) to outputs.

** The final dataset for analysis also drop companies that do not have enough data to assess critical assumptions behind the quasi-experimental methods. Specifically, we restricted the final samples to companies that had at least two years' worth of pre-support data, which enabled us to analyse pre-existing trends among beneficiaries

We triangulated results from two 'flavours' of DiD

- DiD compares the changes in outcomes over time between BtB beneficiaries (the treatment group) and a group unsupported SMEs (the comparison group). It estimates the **net effect of BtB support**, i.e. only the growth that is observed in the treatment group beyond what is demonstrated by the comparison group is attributed to the support
- **We estimated two types of DiD models:**



DiD estimate of the average effect after support:

- Assumes the effect is 'absorbed' quickly, with companies moving to a higher trajectory following support
- Leverages larger samples (all post-treatment observations) to identify the effect

Effect in each year after treatment (event study):

- Highlights the treatment effect dynamics
- Sheds light on time additionality
- Estimates for each post-support year are based on smaller samples (all observations x years after treatment)
- Assumes effects from support stay the same over time (i.e. support delivered earlier years yields the same results for beneficiaries as the same programmes in later years)

- Following pre-analysis checks, we determined that our primary results for BtB activity overall will come from the 'event study' specifications, while main set of results for programme-level analysis. This decision was largely dictated by the sample sizes available for programme-level and overarching analyses*

*The alternative specification was also considered in each case, to ensure the findings were consistent overall

We assessed impacts of each programme against three comparison groups

- **PSM relies on a statistical model, which estimates propensity scores** – the probability of a firm to be treated based on a range of observable characteristics. Non-beneficiaries with the closest propensity scores to those of beneficiaries form a comparison group
- Several matching models were considered and assessed through **balance tests** and graphical analysis of **pre-support trends** in turnover and number of employees
- We selected the following three matching specification for the analysis:

Variables included in all models	Business age Number of employees Turnover Region Innovate UK-funded projects Sector (SIC + high- tech/low pay + KI**)		
Distinguishing features	Match 1: Pre-support growth trajectories (employment and turnover)	Match 2: No extra variables, 'base' model	Match 3: Match 1 applied to a sample from the 2020 Management Expectations Survey (MES)

- Overall, all three Matching models provided credible comparison groups of similarly high quality*
- The three matching specifications were consistent across all programmes we analysed, but the resulting comparison groups were tailored for each programme (reflecting characteristics of the particular set of beneficiaries)
- For each of the programmes we will refer to comparison groups by the number of the matching specification, e.g. comparison group 1 is formed using Match 1, comparison group 2 is based on Match 2, etc.

*Annex B contains further information about the sequence of steps we took to construct the comparison groups and estimate DiD models. It also presents results of tests we used to assess the performance of matching models. These outputs show a substantial reduction in imbalance in individual observable characteristics and overall propensity scores before and after matching.

**KI stands for knowledge intensive

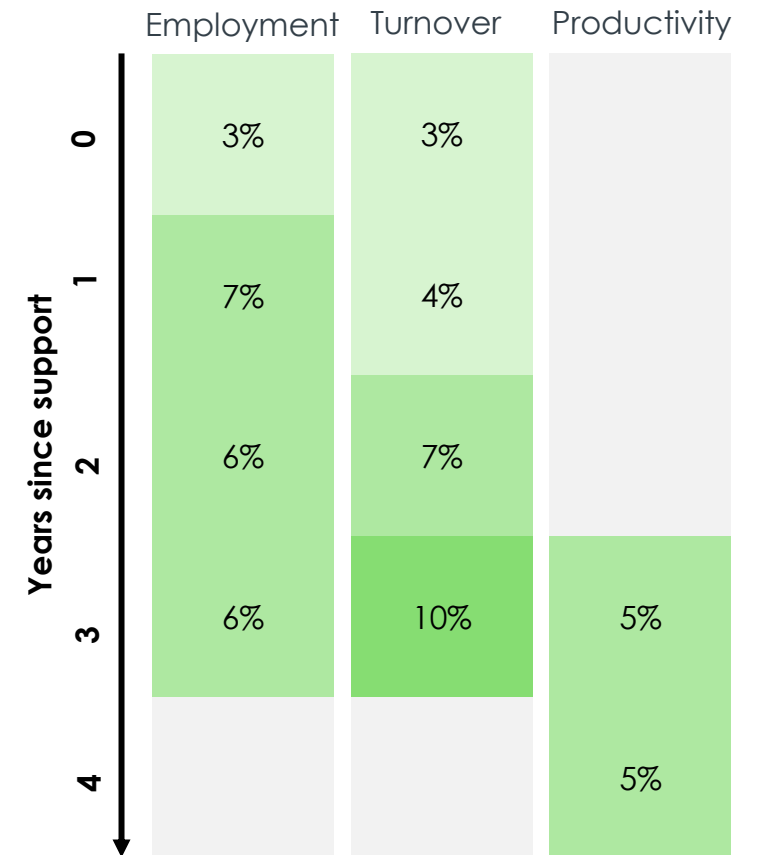
Match 3: a 'more challenging' comparison

- **The Match 3 model restricted the pool of potential comparator companies to respondents of the 2020 Management Expectations Survey (MES) with the overall management score of at least 0.56.**
 - The threshold was determined as one standard deviation below the average score for the 59 BtB beneficiaries who filled in the MES before receiving BtB support
- This approach to defining the pool of potential comparator companies resulted in, arguably, **a 'more challenging' comparison group:**
 - MES respondents are typically larger than BtB beneficiaries, possibly with a wider range of established management and leadership practices
 - These differences in size could not be completely eliminated through PSM (though they were somewhat reduced, see Annex B)
- For the programme-specific analysis of Productivity through People, we also used a comparison group previously created by Belmana as part of their statistical analysis of impacts (carried out in 2022)

Overall effects of all BtB programmes

BtB support is associated with early employment and turnover growth and later productivity gains

- On average, BtB-supported businesses experienced **3%-10% higher employment and turnover growth** than they would have had without the support
 - This effect begins in the year that a business undertook its first programme and continues up to three years later
 - Employment growth peaks earlier, in the year following support, while turnover growth peaks three years after support
- Relative to one of the comparison groups, starting from the third year after support, when additional turnover growth began to outpace employment growth, **beneficiaries experienced improvements in productivity**
- The direction and magnitude of effects identified with the event study design are broadly similar across all three comparison groups, suggesting that results are robust to changes in the composition of the comparison group



Based on averages of statistically significant coefficients across three comparison groups

Impact estimates across all BtB programmes

Metric [years since support]		Match 1	Match 2	Match 3
Employment	0	*** 0.036	*** 0.038	*** 0.028
	1	*** 0.067	*** 0.065	*** 0.061
	2	*** 0.066	*** 0.060	*** 0.062
	3	*** 0.060	*** 0.052	*** 0.056
	4	-0.022	-0.031	-0.026
	5	*** -0.133	*** -0.142	*** -0.136
Turnover	0	** 0.033	** 0.033	0.025
	1	** 0.042	** 0.045	* 0.034
	2	*** 0.068	*** 0.072	*** 0.061
	3	*** 0.098	*** 0.104	*** 0.091
	4	0.017	0.024	0.009
	5	-0.076	-0.068	-0.083
Productivity	0	-0.003	-0.005	-0.003
	1	-0.024	-0.020	-0.026
	2	0.002	0.012	-0.001
	3	0.038	* 0.053	0.035
	4	0.039	* 0.054	0.035
	5	0.057	0.075	0.053

- All estimations behind results presented in this slide pack were performed in natural logarithms. The figures can be interpreted as percentage impacts.*
- All models controlled for pre-existing group trends (that may have remained after PSM, due to the fact it is impossible to match on unobservable characteristics) and used cluster-robust standard errors for significance testing

Note: Number of BtB businesses in regression: 1,377. Significance levels: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

*The exact percentage effect can be obtained by exponentiating the coefficients. The difference increases with the magnitude of coefficients, but is not substantial enough to affect interpretation in this study. It reaches 1 p.p. when the estimate is 0.14 (~15%), it is 2 p.p. when the coefficient is 0.2 (~22%), 5p.p. when the estimate is 0.3 (~35%) etc.

Effects from first vs second support

	First support			Second support		
	Match 1	Match 2	Match 3	Match 1	Match 2	Match 3
Employment	*** 0.102	*** 0.095	0.070	*** -0.146	*** -0.153	0.041
Turnover	*** 0.104	*** 0.105	*** 0.226	-0.115	-0.112	0.006
Productivity	0.002	0.010	** 0.156	0.031	0.041	-0.035

- This analysis covered all combinations of support accessed by beneficiaries in our sample (e.g. participating in Mentoring after Boards)
- Because of the smaller sample, the analysis focussed on the average effect since first and second programme
- The results for the first instance of support are in line with the estimates for overall activity (see Annex C), with the turnover effects relative to the MES-based comparison group being somewhat stronger and leading to statistically significant productivity effects
- We found no further turnover effect for beneficiaries from the second instance of support (on top of the effect from the first one). However, the employment effect was found to be negative, suggesting that companies would revert to growth at the same rate as their comparators
 - Support provided by BtB is tailored to the needs of each business, and the specifics are often decided by SMEs and their mentors/Boards
 - Therefore, one possible interpretation of this results is that the first programme tends to be focused on business growth (including expansion into new markets, development of new products etc), at least in the short term; whereas the second support is more about efficiency (i.e. growth via higher utilisation of resources, including labour, vs adding additional inputs)
 - In the longer run, this pattern can be expected to lead to larger productivity improvements among repeat beneficiaries. Early indicative evidence for this is provided by the result relative to comparison group 3

Programme level & Strive cohort results

Productivity through People (PtP)

	Comparison group			
	Match 1	Match 2	Match 3	2022 PtP comp. group
Employment	* 0.167	* 0.176	0.131	* 0.167
Turnover	** 0.211	** 0.262	* 0.184	** 0.193
Productivity	0.044	0.086	0.063	0.026

- Businesses participated in Productivity through People over the period covering 2016/17 to 2019/20 financial years
- On average, over the years following the support, these beneficiaries had:
 - **19% higher employment** than in the counterfactual scenarios
 - **25% higher turnover**, than they would have had without the programme
- These are the highest magnitude effects across all programmes, likely reflecting the intensity of the programme combined with the profile of beneficiaries (PtP supported larger and older businesses than other BtB programmes)*

Mentoring – 12 months

	Comparison group		
	Match 1	Match 2	Match 3
Employment	*** 0.058	*** 0.062	*** 0.056
Turnover	* 0.061	** 0.084	** 0.071
Productivity	0.003	0.023	0.015

- Businesses in our sample participated in 12-month Mentoring from 2017/18 to 2023/24
- On average, over the years following the support, these beneficiaries demonstrated:
 - **6% higher employment** than in the counterfactual scenarios
 - **7% higher turnover**, than they would have had without the programme

Mentoring – 12 weeks

	Comparison group		
	Match 1	Match 2	Match 3
Employment	** 0.079	** 0.070	** 0.069
Turnover	* 0.104	** 0.0121	0.042
Productivity	0.026	0.051	-0.027

- Businesses in our sample participated in 12-week Mentoring from 2019/20 to 2023/24
- On average, over the years following the support, these beneficiaries experienced:
 - **8% higher employment** than in the counterfactual scenarios
 - **18% higher turnover**, than they would have had without the programme

Advisory Boards

	Comparison group		
	Match 1	Match 2	Match 3
Employment	** 0.107	** 0.103	** 0.108
Turnover	0.041	0.014	-0.025
Productivity	-0.066	-0.089	* -0.133

- Businesses in our sample were supported by Advisory Boards in the period from 2019/20 to 2023/24
- On average, following the programme these beneficiaries experienced:
 - **8% higher employment** than in the counterfactual scenarios
- The lack of statistically significant impacts on turnover might be due to a large proportion of businesses taking part in the programme recently (2021 onwards)
 - as shown in the overarching analysis, employment effects peak sooner than for other impacts and are often more immediate (first the company hires new people who then integrate into business and generate TO)



Annex A: Descriptive statistics by programme

Pre-support size and age

Metric		Productivity through People	Mentoring – 12 months	Mentoring – 12 weeks	Advisory Boards	Sparks	BSD23*
Employees (count)	Mean	57	22	15	16	22	5
	Median	38	10	4	7	6	1
Turnover (£000s)	Mean	7,003	2,413	2,688	1,744	1,959	969
	Median	3,810	767	256	349	365	129
Age (years)	Mean	25	14	10	13	15	13
	Median	22	9	6	9	11	8

*BSD23 is the latest release of the Business Structure Database that covers 2022/23 financial year.

Sectoral distribution – top 8 sectors of beneficiaries

Sector chapter	Productivity through People	Mentoring – 12 months	Mentoring – 12 weeks	Advisory Boards	Sparks	BSD23
M: Professional, scientific and technical services	22%	21%	22%	24%	33%	15%
C: Manufacturing	45%	16%	10%	13%	13%	5%
G: Wholesale and retail trade	< 10%	17%	13%	15%	13%	17%
J: ICT	< 10%	11%	15%	17%	13%	7%
N: Administrative and support service activities	< 10%	9%	13%	7%	< 8%	8%
P: Education	< 10%	4%	5%	6%	< 8%	2%
F: Construction	< 10%	6%	5%	4%	< 8%	13%
Q: Human health and social work activities	< 10%	3%	4%	4%	< 8%	4%

Sectoral distribution, cont.

Sector classification	Productivity through People	Mentoring – 12 months	Mentoring – 12 weeks	Advisory Boards	Sparks	BSD23
Low pay	<10%	14%	10%	14%	< 8%	26%
High tech	< 10%	9%	8%	15%	8%	7%
Knowledge intensive service	36%	37%	31%	49%	37%	31%

Innovate UK funding

	Productivity through People	Mentoring – 12 months	Mentoring – 12 weeks	Advisory Boards	Sparks	BSD23
Previous Innovate UK project	17%	7%	3%	6%	< 8%	0%

Geographical distribution

Region	Productivity through People	Mentoring – 12 months	Mentoring – 12 weeks	Advisory Boards	Sparks	BSD23
East of England	< 10%	10%	8%	8%	< 8%	10%
East Midlands	< 10%	6%	6%	6%	< 8%	7%
London	< 10%	19%	23%	23%	26%	21%
North East	< 10%	3%	< 2%	< 3%	< 8%	3%
North West	41%	23%	14%	18%	29%	10%
South East	< 10%	12%	10%	14%	12%	16%
South West	15%	5%	15%	15%	15%	9%
West Midlands	13%	16%	9%	7%	9%	8%
Yorkshire & the Humber	< 10%	6%	12%	6%	< 8%	7%
Northern Ireland	< 10%	< 1%	< 2%	< 3%	< 8%	3%
Scotland	22%	< 1%	< 2%	< 3%	< 8%	1%
Wales	< 10%	< 1%	< 2%	< 3%	< 8%	5%

Underlying counts

	Productivity through People	Mentoring – 12 months	Mentoring – 12 weeks	Advisory Boards	Sparks	BSD23
Underlying counts for descriptive statistics	99	1,105	495	330	121	3,817,464

Research, analysis and advice on economic and social development

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