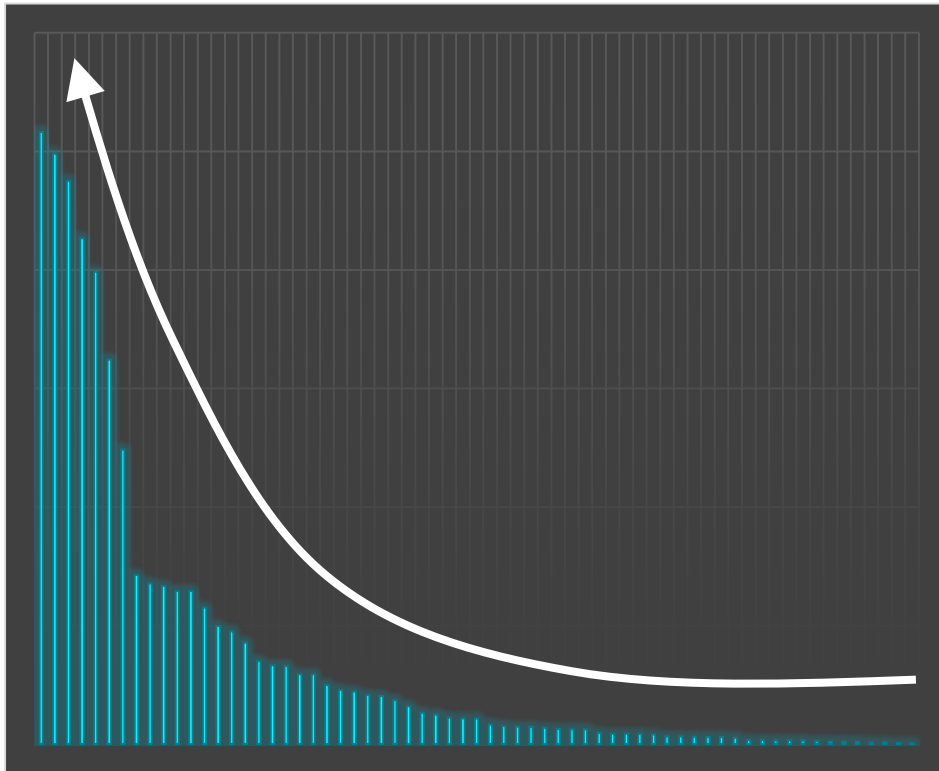


The *Pareto Principle*: the importance of the vital few in business support programmes

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Executive Summary

In 1906, the Italian economist, Vilfredo Pareto, noticed that the distribution of land-ownership in Italy was highly concentrated with around 80% of the land owned by 20% of the population. Carrying out surveys in other countries, he found similar distributions. This 80-20 rule of thumb has been identified in other economic and business contexts, and has been applied to highlight the fundamental importance of the 'vital few', for example in quality control or prioritising clients.

In this paper we explore the distribution of benefits associated with three government-funded business and innovation support programmes targeted at small and medium-sized enterprises (SMEs). In all cases we find that levels of concentration are even higher than the 80-20 distribution observed by Pareto. Table 1 sets out the headline statistics for the three programmes.

Skewed distributions of benefits are perhaps unsurprising; they go with the grain of what is known about the patterns of business growth and job creation, in particular in the context of 'high growth' companies. For example, Nesta-commissioned research has identified the 'vital 6%' of high growth businesses that contribute most to employment creation. Skewed distributions also align with other evidence, for example on the commercial benefits associated with investments in higher education research projects (e.g. see Russell Group, 2010). However, the scale of skewness may be surprising to some. In particular, for two of the programmes reviewed, over 95% of the benefits were associated with the top 20% of cases, far exceeding the 80-20 distribution.

Table 1: Headline findings from analysis of the distribution of benefits

Programme type	Top 20% of businesses surveyed accounted for...	Skewness statistic ¹	Mean	Standard deviation
Area-based technology support programme	94% of <i>additional</i> turnover benefits of the sample	5.1	£329k turnover	£1,049k turnover
Export support programme	99% of the <i>net</i> GVA benefits of the sample	5.0	£40k GVA	£148k GVA
Regional European programme	97% of <i>additional</i> turnover benefits of the sample	5.1	£244k turnover	£825k turnover

Source: SQW, based on analysis of evaluation data

¹ Skewness statistic indicates the extent to which a distribution leans to one side. A positive value indicates positive skewness (e.g. few high values, and a high number of low values); conversely a negative value indicates negative skewness (e.g. few low values, and a high number of high values). If a distribution is symmetrical, then skewness is zero.

Whilst there are exceptions, we note that the patterns, or distribution, of benefits are rarely presented in the evaluation evidence base, with average benefits and overall returns on public sector investment more often cited. **We recommend that evidence on skewness should be considered more regularly and comprehensively going forward**, with more attention given to the characteristics of those businesses that benefit most (and conversely least). This could yield insights into the implications for policy-makers and practitioners. From the evidence on the three programmes reviewed for this paper, those benefiting most have a mix of characteristics, which would make targeting challenging. Nevertheless, there is some evidence to suggest that those businesses that are most likely to have benefited by the greatest amount are larger SMEs (e.g. with 20-50 employees) rather than micro enterprises and smaller SMEs, have up-to-date business plans, and/or compete nationally and internationally. These characteristics need further testing and there may be other aspects that are relevant, such as spatial and sectoral dimensions.

For policy-makers and programme deliverers, there are three broad options as to what can be done with highly skewed programmes. One option is to 'embrace it', which may be a rational response when the underlying logic of a programme may suggest an expectation for skewed distributions of benefits – much in the same way that a venture capitalist may

expect a small number of star performers. However, the high levels of concentrations of benefits need to be accepted, understood and taken into account by those involved and those sponsoring a programme. This may mean establishing acceptable benchmarks for the concentration of benefits, depending on programme objectives. In accepting high levels of concentration, sponsors and partners may need to appreciate that there could be a high proportion of beneficiaries that gain little, or even nothing, from a programme.

The second option is to seek to refine the programme. This is where the evidence on the characteristics of those benefiting the most and least (and why) becomes important. It could be used on the one hand to inform better targeting of those more likely to benefit to a large extent, and on the other hand to seek to improve the experience of those not benefiting or benefiting the least (or to signpost them to other more relevant support).

A third option would be to abandon the programme. This may be appropriate if the high levels of concentration implied that the programme's objectives are not being addressed.

It is likely that the most appropriate response will vary in different situations. **However, the critical point is to understand the potential for skewness, and then choose to accept it or do something about it.**

Introduction

Background

In economics and business the distribution of factors such as wealth, sales and product defects have attracted analysis and the development of 'rules of thumb' to inform decision-making and allocation of effort. The 80-20 rule of thumb is based on the observation that, for many events, 80% of the effects come from 20% of the causes. This dates back to the Italian economist, Vilfredo Pareto, who observed in 1906 that 80% of the land in Italy was owned by 20% of the population. Carrying out surveys in other countries, he found similar distributions.

The same observations have been seen in other economic and business contexts, such as:

- the richest 20% of the world's population controlling just over 80% of the world's income
- 20% of customers generating 80% of profits
- 20% of the defects causing 80% of the problems in quality control.

Applying the rule of thumb in business contexts highlights the fundamental importance of the 'vital few', for example in prioritising problem-solving or clients.

In this paper we explore the extent to which a similar rule may apply to business and innovation support programmes. Whilst this is acknowledged in the literature (see Hughes and Martin, 2012) and some evaluation studies have considered the concentration of benefits (e.g. see Russell Group, 2010; PACEC, 2013), this is not a routine research question. Therefore, this paper aims to:

- test, using past evaluation evidence, the concentration of benefits amongst programme beneficiaries

- assess whether anything can be said about the characteristics of those beneficiaries that benefit most (or least)
- identify possible implications for policy-makers, programme deliverers and evaluators.

Approach

Three past evaluations conducted by SQW are used for the purpose of the analysis. These comprise a mixture of different types of business and innovation support programme covering:

- an area-based (regional) innovation/technology support programme covering projects such as networking, clustering and proof of concept funding
- a programme to promote exports
- a regional European programme, including a range of projects such as innovation centres, sector and commercialisation support, networks and enterprise support.

Survey data are analysed to ascertain the distribution of 'net benefits' (in terms of turnover or Gross Value Added, GVA) associated with businesses participating in the scheme. These are assessed by:

- estimating the gross benefits for each business (including forecast and/or persistence of benefits) based on survey responses
- presenting a time series of gross benefits from the point after support for up to 10 years of benefits (depending on businesses' expectations of how long benefits will last)
- assessing the time series of net benefits by estimating levels of 'additionality' based on survey responses

- calculating a present value of net benefits by incorporating a standard discount rate.

Analysis and interpretation of the results is undertaken to assess:

- the distribution of benefits amongst beneficiaries
- levels of skewness in the distribution
- whether there are any observable characteristics of those beneficiaries that benefit most.

There are some methodological limitations to the analysis. The evidence drawn upon is based on self-reported benefits, i.e. beneficiaries were asked to self-assess the level of turnover benefit that they had derived and the level of 'additionality'. This can mean that there is a degree of 'optimism bias', with businesses overstating the importance of support or overstating the level of turnover benefit in the future (conversely, there could also be 'pessimism bias'). More rigorous evaluation would employ a 'two group design', so as to compare beneficiaries with a non-beneficiary group.

A second caveat is that the data from surveys of beneficiaries are incomplete. This means that some businesses were not able to answer all of the relevant questions, or were able to provide percentages or ranges, rather than absolute monetary figures for benefits. Percentages or ranges are incorporated into the analysis where there are sufficient data to do so with confidence. In the case of unavailable data, or businesses who said that it was 'too early' to report benefits, we exclude these from the assessment of the distribution of benefits.

Finally, and related to the previous point, some programmes may take much longer to have an effect (beyond the scope of the evaluation), and just because a business is not able to provide a monetary value does not mean they have not benefited at all. There can be many non-quantified

benefits from support (and the pattern of these benefits too is likely to be skewed). However, our examples here use the estimates of the value of benefits as a tool to demonstrate the importance of understanding the distributional effects of business development support.

Remainder of this paper

In the next section we set out the findings from the three programme examples. The subsequent sections of the paper look at the potential implications of the findings, in particular in terms of:

- reframing and developing the evidence base in the future
- the expectations for programmes, and whether policy-makers or practitioners seek to do anything about a skewed distribution.

Following an 80-20 rule?

This section uses the three programme examples to present evidence on the distribution of benefits. The data is presented using charts and key statistical indicators covering:

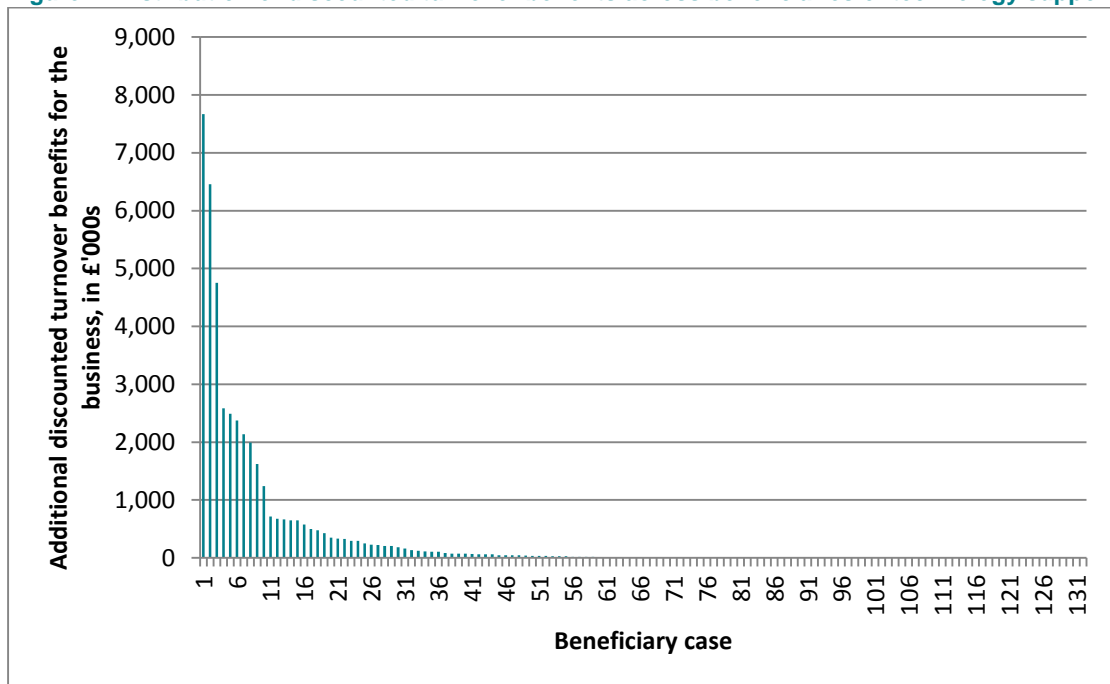
- average (mean) benefit received by beneficiaries
- standard deviation, i.e. the average distance of a beneficiary case from the mean
- skewness, i.e. the extent to which the data is skewed positively (or negatively), indicating how far the data 'leans' to one side
- the concentration of benefits, i.e. the total proportion of benefits

derived by the top 20% of cases sampled.

Area-based technology support programme

The first case is a technology support programme operating on a regional level through a number of different projects covering: cluster support, networking, prototyping, proof of concept funding and design support. Over 200 beneficiaries were surveyed as part of the evaluation, and for just over 130 of these there are data on the *additional*² turnover benefits to date and expected. In Figure 1, the distribution is shown graphically, with the key statistics in the following box.

Figure 1: Distribution of discounted turnover benefits across beneficiaries of technology support



Source: SQW evaluation

² i.e. taking account of what businesses believe they would have achieved in absence of support

Key data

Number of cases included = 132; Mean = £329k turnover

Standard deviation = £1,049k turnover; Skewness = 5.1

20% of cases account for 94% of the programme's additional turnover benefits

16% of cases above the mean

The evidence from this area-based technology support programme highlights very high levels of concentration of benefit. From the sample of businesses for which data are available, 94% of the programme's turnover benefits are derived by 20% of the beneficiaries. Some, but limited, data are available on the characteristics of the business beneficiaries, including age of the business and size (in terms of turnover and employment). Reviewing the available data shows that those businesses benefiting the most have a mix of characteristics in terms of age and size, which would make targeting difficult. However, from the top 20% of businesses, it is noted that one-half had 20 or more employees (in particular in the range 21-50), compared to 7% of the remainder of the sample for which data on benefits are available.

Export promotion

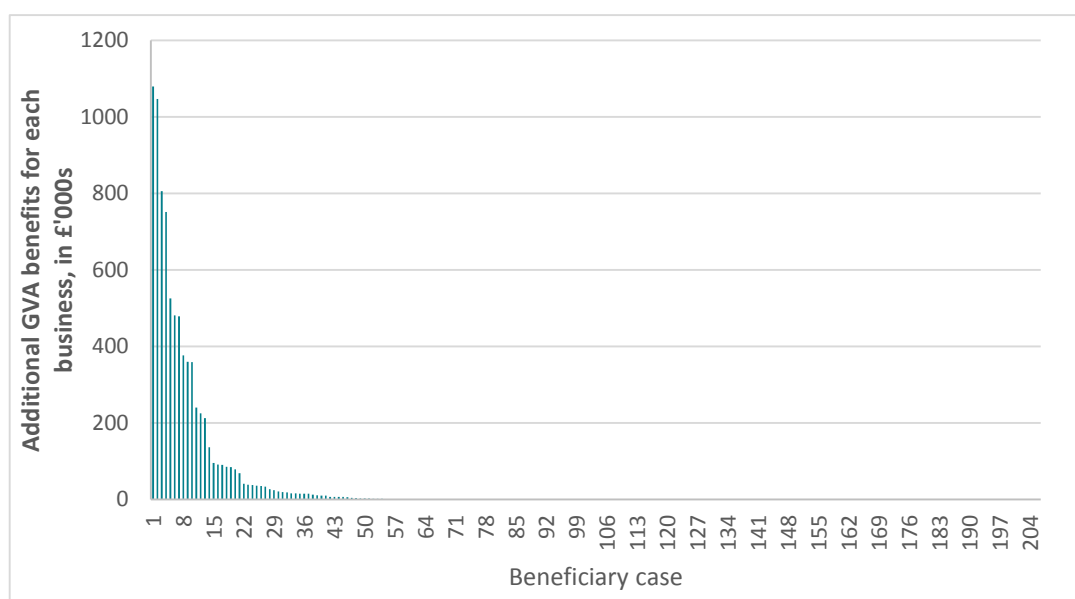
This example shows the range of net additional GVA benefits calculated for

businesses supported through an export promotion programme. This provided a variety of assistance that included funding to attend exhibitions and travel for trade missions. The results show a similar pattern with a small number of cases producing the large part of the programme's impact. The mean is a creditable £40,000 of additional GVA per case. However, a more detailed reading of the data shows how the impacts are skewed. In fact the top 20% account for 99% of the total GVA impact. This means that in 80% of cases the impact is negligible. The average impact for the lowest 80% of the sample is just £400 of GVA.

In effect, when the business signs up for the programme, there is a 70% chance that the support will not generate any impact at all.

Clearly the distribution is important in understanding how the programme works and the extent of the long tail of cases with small or no impact.

Figure 2: Estimates of the net GVA generated for each supported business through an export promotion Programme



Source: SQW evaluation

Key data

Number of cases included = 204; Mean = £40k GVA

Standard deviation = £148k GVA; Skewness = 5.0

20% of cases account for 99% of the programme's additional GVA benefits

11% of cases above the mean

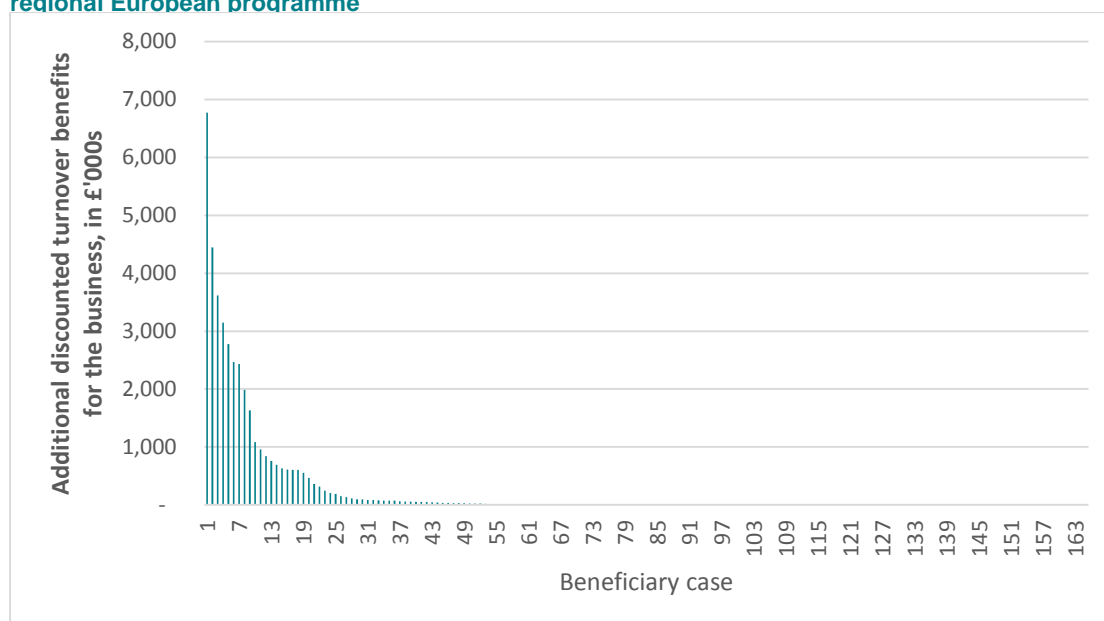
Regional European programme

In our third example, we analyse data from an evaluation of a regional European programme designed to improve productivity, encourage innovation and sustainable businesses practices, and support sustainable economic and enterprise activity in assisted areas. The sample of projects surveyed included a range of capital and revenue projects to develop innovation and technology centres, encourage sector development

and commercialisation activities, develop networks and provide enterprise support. A total of 263 beneficiaries were surveyed across the sampled projects, of which around two-thirds (166 beneficiaries) were able to estimate the impact of the interventions on their turnover. The distribution of *additional* turnover benefits (achieved, including expected persistence) for each beneficiary is shown in the graph below. Key statistics on the mean turnover impact, standard deviation, skewness and concentration of benefits is presented in the box below³.

³ Please note, in this example, the top two cases have been excluded from the analysis because they indicated exceptionally high levels of benefits.

Figure 3: Estimates of the additional turnover generated for each supported business through a regional European programme



Source: SQW evaluation

Key data

Number of cases included = 165; Mean = £244k turnover

Standard deviation = £825k turnover; Skewness = 5.1

20% of cases account for 97% of the programme's additional turnover benefits

13% of cases above the mean

Again, the benefits are concentrated in a small number of beneficiary cases. Where businesses were able to value the benefits, the analysis suggests that 97% of the additional benefits are observed in 20% of the cases. An analysis of the characteristics of the top 20% of beneficiaries compared to the remainder of the sample shows some interesting differences:

- *the top 20% are larger firms:* in the top 20% of beneficiaries, the mean number of FTE employees was 30 compared to an average of 9 for the remainder of the sample
- *the top 20% are more likely to have an up-to-date business plan:* in the top 20% of beneficiaries, 85% had an up-to-date business plan

compared to 64% of the remainder of the sample

- *the top 20% are less likely to compete with regional firms:* in the top 20% of beneficiaries, on average around one-seventh of their competition was based in the region (as opposed to elsewhere in the UK or abroad), compared to an average of nearly one-half for the remainder of the sample (based on mean values).

Summary

The evidence presented in this section highlights how vital the “star performers” in a programme can be to its overall success, and returns on public sector investment.

The findings presented are not entirely surprising, though the scale of concentration is marked. Initiatives that seek to support or exploit novel ideas will need to accept high risk with the potential for high reward in a small number of cases, and also that some ideas will result in a dead end. This is particularly relevant in R&D, knowledge exchange and commercialisation. Hughes and Martin (2012) refer to the evidence for skewness in relation to commercialisation, with the total value created concentrated in relatively small proportions of samples. Similarly, in equity investment, venture capitalists accept that some of their investments may yield little or no return, but that a small number may generate very high returns. Hughes and Martin (2012) also refer to similar concentrations in public policy interventions, citing in particular knowledge transfer partnerships (KTPs) and SMART. Our own evaluation of KTPs (when it was known as the Teaching Company Scheme) found that only a small proportion of business participants experienced 'bottom line' benefits, and similarly the recent evaluation also found high levels of concentration that were not too dissimilar from the 80-20 rule of thumb (Regeneris, 2010).

The concentration of benefits from programmes that are fundamentally about business growth follows, to some extent, wider evidence. For example, research commissioned by Nesta highlights the disproportionate contribution of the 'vital 6%' of high growth businesses⁴; and research by Nightingale and Coad (2011) identifies that it is an atypical minority of businesses that can have a significant positive impact (and a large proportion of enterprises that have a marginal, and sometimes, negative effect e.g. through displacement).

In theory we may not expect such markedly high concentrations of benefits given that the rationale for support is more focussed on the notion that businesses do not access strategic advice to help them grow due to not being able to source appropriate provision (rather than there being a significant rationale around whether ideas have commercial potential). The degree of concentration of benefits may be surprising, therefore, in relation to the export programme in particular and to some extent the regional European programme.

There is relatively limited evidence on which firms benefit most and why. The evidence from the three programmes reviewed for this paper suggests that slightly larger firms (e.g. in the 20-50 employment bracket) benefit most, which is partly consistent with the evidence on KTPs in which medium-sized companies were found to benefit more than micro or small enterprises. The reasons for this are not entirely clear, although possible explanations include: the amount of resource that larger businesses can make available to a programme, experience from using similar interventions, or indeed greater ability to translate benefits into commercial gain. In addition, businesses that have an up-to-date business plan and businesses that compete in national and/or international markets may also be more likely to benefit most (as we find in the European programme that is reviewed for this paper). Our own knowledge of business support schemes also highlights the importance of general experience of business managers and entrepreneurs, whether or not they are running a micro-enterprise or larger SME. These factors are worthy of further consideration to develop the evidence.

⁴ The research found that 6% of businesses had contributed 54% of the new jobs created by firms with 10 or more employees.

Reframing and developing the evidence base

It is common for evaluation studies of business and innovation support schemes to present headline findings on the impact. For instance, this might use:

- an overall assessment in the form of '£1 of investment has resulted in £x of additional GVA', i.e. estimating the return on public investment
- indications on the average (mean) level of benefit per participating business
- levels of additionality or deadweight – indicating the extent to which benefits may have been achieved in absence of support.

Leaving aside the challenges of reaching these assessments, and the need often to incorporate sensitivity testing, such findings may only tell part of the story.

From an overall value for money perspective, understanding returns on investment is critical. However, drawing on the evidence presented in the previous section of this paper, benefits can vary hugely across those participating in schemes. Given that there can be high standard deviations (i.e. the average distance from the mean), indicating that there is some average level of benefit that a company might expect to obtain from a scheme would be misleading.

Measuring success and 'risk'

To provide those using evaluation evidence with indicators to inform decision-making, we consider that it is

important to reframe some of the evidence. In particular, this ought to highlight the extent to which benefits might be typical and standardised across a programme, or from another perspective the extent to which there is 'risk' that benefits could deviate from a mean average. Indicators used in the last section of this paper, such as the standard deviation, skewness and concentration of benefits, would provide insight into such issues of risk, and we recommend that these are considered in evaluations of business and innovation support schemes in the future.

For example, a simple indicator identifying the proportion of additional benefits achieved by the top 20% could be quite insightful.

It is important to note that we are not saying that high levels of variation and skewness are inherently a 'bad thing'. Indeed, the opposite may well be true (and be expected), when the public sector is supporting innovative firms and/or ideas⁵. However, judgements on the effectiveness of schemes will need to take account of the fact that there could be many case examples where benefits will be minimal or even zero. This will affect programme objectives and targets, as it may be reasonable to expect positive outcomes for a minority of beneficiaries.

A heavily skewed distribution can also have implications for the *perceptions* of a programme. If it makes little difference to a large group of supported businesses, it means that more businesses potentially have a poorer experience. Although there may be no hard bottom line benefits in programmes for some businesses, we note that they may still receive some softer benefits such as knowledge or skills development.

⁵ In these cases, the lack of information on the potential future returns to private investors or individuals may

actually provide the rationale for public support in the first place.

Developing the evidence on which firms benefit most

As noted in the previous section, a gap in the evidence is on the characteristics of those that benefit most and understanding why this is the case. We suggest that the following types of characteristics could be examined in future evaluation studies:

- business identifiers (such as age, size and sector)
- business behaviours (such as propensity to innovate, or specific commitment to the programme in question)
- location (such as density of business-to-business networks, and proximity to knowledge and skilled labour)
- markets (such as the extent to which businesses are active in national or international versus local markets).

If there is evidence that particular types of businesses or behaviours of businesses are associated with higher levels of benefit, then this might have implications for targeting and programme design. A potential issue, however, is that the number of businesses benefiting significantly is often small. This makes quantitative assessment more difficult. One option might be for star performers from a range of programmes to be examined together to determine any commonalities and lessons. Any research undertaken of this nature would need to guard against the 'halo effect', whereby cognitive biases affect the judgement as to what was important (especially when researching after the event).

Implications for evaluation design

There are implications for evaluation design. First, in evaluating programmes with a high degree of skewness, we might expect a risk of non-response bias, i.e.

many of those not responding may be within the long tail of those firms benefiting least. Therefore, there will need to be strategies in place to take this into account.

The second implication relates to the increasing shift to two-group evaluation design, which adopts experimental or quasi-experimental approaches such as Randomised Controlled Trials and Difference in Difference techniques. In the context of two- (or more) group design, if programmes are expected to affect relatively small proportions of the beneficiary sample, then this would mean that large sample sizes would be needed in order to demonstrate an effect from the programme. This is particularly the case if the outcomes that are tested as part of the evaluation are related to commercial gains.

Such larger sample sizes may be more feasible for the types of business support programmes that are delivered in higher volume. For more specialist innovation support programmes, and those where there are inherent parts of the programme design that suggest relatively high levels of risk or uncertainty in generating benefits, other evaluation techniques may be more appropriate.

‘Embracing it’ or refining the programme?

The evidence on the distribution of benefits for a programme has implications for the expectations that may be placed on a programme’s achievements, and for policy-makers and practitioners in the design, implementation and refinement of programmes. There are choices to be made: *‘embracing it’*, refining the programme design, or abandoning the programme altogether.

‘Embracing it’

For some types of programme we expect that there needs to be an acceptance that there will be high levels of concentration of benefits. For example, let’s take the scenario of a grant scheme that supports businesses with potentially commercialisable ideas. The rationale for support stems, in part, from unknown information about the likelihood of commercial benefits. This means that the risk of investing time and resource into these business activities is high, and the probability of success below average for a business venture. Conversely, the potential rewards may be significant. With this backdrop, we would fully expect a long tail of cases with limited or no benefits, and a small number of star performers.

Therefore, policy-makers and practitioners may choose to embrace the skewness. There are implications that flow from this, notably:

- acceptance of the skew in the distribution of benefits in the underlying logic of the programme and in its objectives and target outcomes (these targets may need to reflect acceptable benchmarks on skewness)

- related to this, acknowledgement that a relatively small proportion will benefit most, and clear caution on the use of any ‘average’ indicators
- decisions on how to focus time and resources, which could be to invest more into emerging stars or could seek to convert those ‘bubbling under’ into stars themselves.

The acceptance of the skew is actually quite important in disseminating the results of evaluation work, and the investments in innovative projects. It highlights that there will be a lot of apparent failures and deadweight spend, but that this is to be expected.

There is clearly a need for appropriate selection of businesses/ideas to support at the outset of a programme. However, a further implication, providing some food for thought, is the extent to which skewness may mean casting the net as widely as is sensible (within this selection process) in order to ensure that the star performers are not missed. This principle underpins some of the thinking behind seed accelerators to ensure that they catch the next hot deal. It could also provide a case for broad and shallow support in the first instance, followed by more intensive support for the ones that look likely to become stars.

Refining the programme

Changing the programme would mean actively seeking to improve the distribution. There are two possible avenues to explore here:

- tipping the risk-reward balance by targeting the businesses/projects with greatest chance of high returns
- trying to do something more with the cases where benefits are limited.

The former ‘tipping the balance’ approach would be possible if you could identify the characteristics of those businesses or projects that generate the greatest reward, either at the outset or after a period of time. This is likely to involve an assessment of past evidence on the programme or similar programmes and/or some kind of diagnosis stage at the start of the programme. Relevant characteristics might include:

- size of the business
- stage and/or age of the business
- sector
- nature of the project being pursued
- management capability and extent of senior involvement in the project
- accessibility to markets, including international markets
- innovation capability and performance
- location of the business, in particular density of networks.

An understanding of the characteristics could also be built in as part of an approach based on continuous improvement. This would follow a process of establishing characteristics at the outset, tracking intermediate outcomes and final outcomes, and assessing those characteristics that are more likely to lead to the achievement of outcomes⁶.

The result is unlikely to be a set of simple rules for targeting, rather it might inform a portfolio approach that balances varying probabilities of returns.

In trying to do something more with the cases where benefits are limited, this would also require understanding the reasons for success (and limited success).

Once these are established, there would be a need to seek to rectify deficiencies in the cases where benefits are limited. This may actually result in signposting to alternative, more appropriate, forms of support.

Open to all?

There is a view that business support programmes should be open to all (or many) rather than focussed on a few, or that the purpose should be to benefit many. Where this is a fundamental part of the objectives, then high levels of skewness ought to prompt policy-makers to decide to abandon programmes, because they are not addressing the underpinning rationale for the programme in the first place.

At worst, programmes may be having unintended detrimental effects, because they are supporting a high proportion of inefficient businesses that have adverse displacement effects on others.

Even those programmes that are selective often have the pressures of achieving target outputs, negotiated and set at the outset of a contract. This issue can present difficulties in a focussed refinement of a programme, especially during a contract period. What is certainly clear though, is that a payment by results model based on the achievement of financial outcomes per beneficiary case is unlikely to be appropriate for some business and innovation support schemes. For payment by results to work in the context of expected skewed outcomes, payments would need to be proportionate to the scale of benefits achieved in a specific ‘number’ of cases (and this ‘number’ would need to build in the anticipated levels of skewness).

⁶ This could be usefully complemented by understanding reasons for this, so as to demonstrate evidence of causal links.

Concluding thoughts

There will always be some level of skew in the impacts of support programmes.

The challenge is in understanding this, presenting it and learning from it. This is easier to say than to do. Our experience in analysing many types of programmes is that while the skewing of results can be assessed and understood, it is often not considered explicitly in developing programmes, delivering support and presenting the evidence on the benefits.

Presenting more clearly the evidence on the skewness of benefits ought to be relatively straightforward, and we illustrate how this might be done in this paper. Use of distribution charts and different indicators (e.g. the Pareto index and indicators of skewness and standard deviation). Understanding the characteristics associated with higher returns will require more research resource. Whilst going some way to improving our understanding, our experience suggests that the factors will be complicated and with a degree of the unknown (including, perhaps, a degree of luck).

Deciding whether and what to do from a policy-maker or practitioner perspective falls into three categories.

Embracing it means accepting the skewness in the programme logic, and the expectations of results, which needs to be clearly communicated to funders. It may also suggest an importance of casting the net widely in order to ensure that the big returns are caught, or a staged selection process.

Refining programmes will require an investment of resource in the evidence that can tell you more about why certain businesses and ideas generate high returns and others not. Drawing on this, a programme deliverer could determine a portfolio approach that takes advantage of

what can be gained from this evidence. Alternatively, something could be done to improve the potential of those not quite making the grade in terms of the benefits that they derive.

The third category is to abandon programmes if the levels of skew indicate that programmes are not meeting their objectives.

The appropriate solution will differ from one situation to the next. Our main point is that a more explicit recognition of the distribution will provide insights into how programmes work, and that this ought to improve the design and delivery of business support programmes.

A further point that may warrant further research is the extent to which different types of programmes across the business/innovation support landscape benefit the same businesses or types of businesses. In other words do the star performers in one programme end up in the lists of star performers in another, or are the same types of businesses in the respective lists of star performers? This could yield some interesting insights in how and why stars are effective in using support to contribute to their growth.

Wider relevance

We have seen in this paper that the skewness of benefits can apply to innovation, business and export support programmes. We have also seen parallels in venture capital/business angel investments and backing technology start-ups. The issue may be relevant in other areas of public and social policy. Whilst not based on conclusive evidence, we have observed similar distributions in relation to public services innovation and in understanding the economic impact of 'shocks' that can bring about business closures (e.g. due to flooding or other events). Therefore, assessing levels of skew may be worth investigation in other policy domains.

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