



## Summary

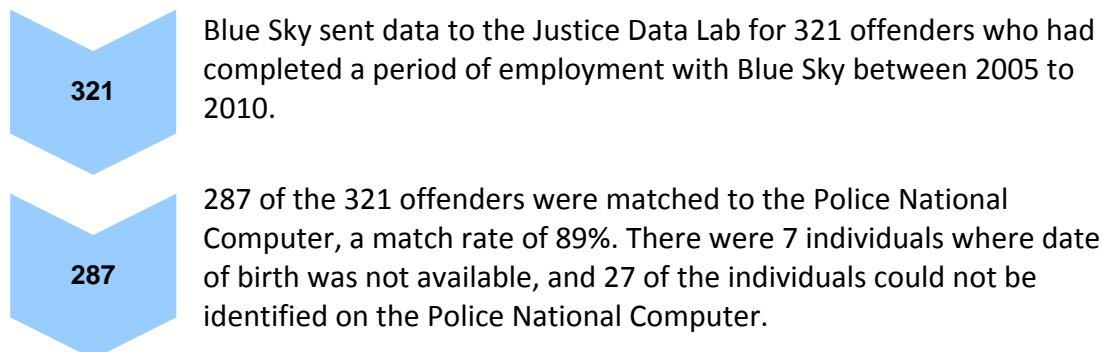
This analysis assesses the impact of short-term full time employment contracts run by the organisation Blue Sky on re-offending. The one year proven re-offending rate<sup>1</sup> for 72 offenders employed by Blue Sky was 31%, compared with 43% for a matched control group of offenders with similar characteristics. Statistical significance testing has shown that the difference in the re-offending rates is statistically significant<sup>2</sup>, suggesting that individuals receiving short-term, full time employment with Blue Sky within 6 months of leaving custody experienced a reduction in re-offending between 1 and 23 percentage points.

**What you can say:** This analysis indicates that individuals receiving short-term, full time employment with Blue Sky within 6 months of leaving custody experienced a reduction in re-offending between 1 and 23 percentage points.

## Introduction

Blue Sky offers ex-offenders up to six months, full-time employment contracts and aims to move them into onward full-time employment elsewhere. This analysis relates to offenders who undertook an employment spell with Blue Sky between 2005 and 2010. This analysis relates to those individuals who were employed by Blue Sky after leaving custody only.

## Processing the Data



<sup>1</sup> The **one year proven re-offending rate** is defined as the proportion of offenders in a cohort who commit an offence in a one year follow-up period which was proven through receipt of a court conviction, caution, reprimand or warning during the one year follow-up or in a further six month waiting period. The one year follow-up period begins when offenders leave custody or start their probation sentence.

<sup>2</sup> The p-value for this significance test was 0.03. Statistical significance testing is described on page 5 of this report.



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79 offenders had an identifiable custodial sentence within 6 months prior to the start date of the Blue Sky employment, and who did not have a proven re-offence between leaving custody and the start of this employment.

Having a 6 month period between leaving custody and starting employment with Blue Sky means that any observable difference in the 1 year proven re-offending rate would be more likely to be attributable to the work of Blue Sky, rather than any other factors which may have had an effect.

Analysis of the unmatched data revealed the following:

- That some were individuals were employed by Blue Sky during an identifiable community sentence, but there was not enough for robust analysis to take place (37 individuals across the community sentence types). We would recommend that these individuals would be part of additional analysis of the effectiveness of Blue Sky employment during Community Orders or Suspended Sentence Orders when further years of data become available.
- That some were individuals who had neither a community sentence nor a prison sentence as the most recent proven offence before working with Blue Sky; this could include persons who received a fine, absolute discharge, conditional discharge, or a positive drug test (55 individuals across all different sentence types, 23 of these individuals received a sentence 6 months prior to working with Blue Sky). Again, not enough individuals were matched in each category to support further robust analysis.
- Individuals who did not start working with Blue Sky until at least 6 months after their release from custody or start of a community order (70 individuals).
- A number of individuals where a relevant sentence or conviction could not be found within 1 year of the Blue Sky employment start date (125 individuals).



72

3 persons were removed because they had committed a re-offence before the Blue Sky employment spell started.

## Creating a Matched Control Group



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All of the 72 offender records for which re-offending data was available could be matched to offenders with similar characteristics but who were not employed by Blue Sky. In total the matched control group consisted of 212,131 offender records.

As this analysis pertains to employment which happened after release from custody, an additional check needed to be imposed on the control group to ensure that the matched individuals had similar characteristics to the Blue Sky employment group. All members of the matched control group could not have committed a proven re-offence before the start date of employment for the matched Blue Sky counterparts. Any matches where the control group had committed a proven re-offence prior to the start date of the Blue Sky counter part were excluded from the analysis. This

check ensures that we have greater confidence that the matched control group presents a more accurate counterfactual for comparison.

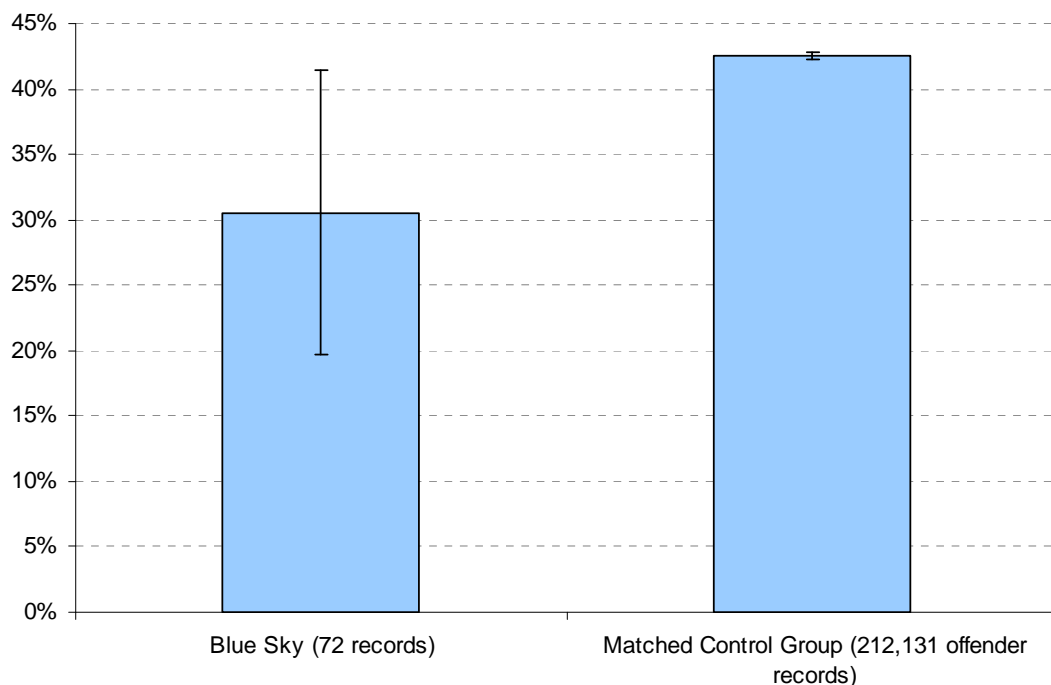
The Annex provides information on the similarity between the treatment and control groups. Further data on the matching process is available upon request.

## Results

The one year proven re-offending rate for 72 offenders who were employed by Blue Sky was 31%. This compares to 43% for a matched control group of similar offenders. This information is displayed in Figure 1.

Figure 1 below presents the 95 per cent confidence intervals for the re-offending rates of both groups, i.e. the range in which we can be 95 per cent sure that the true re-offending rate for the groups lie. For this analysis we can be confident that the true difference in re-offending between the two groups is between 1 and 23 percentage points. It is important to show confidence intervals because both the treatment and matched control groups are samples of larger populations; the re-offending rate is therefore an estimate for each population based on a sample, rather than the actual rate.

*Figure 1: The best estimates for the one year proven re-offending rate for employed by Blue Sky and a matched control group.*



The precision of this estimate could be improved if the size of the offender group used in the analysis was increased. It is recommended that the analysis is repeated on a larger sample, when additional years of data become available. As mentioned above, it is also recommended that the analysis is repeated with persons serving community sentences.

### **Caveats and Limitations**

The statistical methods used in this analysis are based on data collected for administrative purposes. While these include details of each offenders' previous criminal, benefit and employment history alongside more basic offender characteristics such as age, gender and ethnicity, it is possible that other important contextual information that may help explain the results has not been accounted for. It is possible that underlying characteristics about the individuals included in the analysis which were not captured by the data (e.g. attendance at other interventions or services targeted at offenders) may have impacted re-offending behaviour.

Many organisations that work with offenders will look to target specific needs of individuals; for example improving housing, or employability. However, how the organisations select those individuals to work with could lead to selection bias, which can impact on the direction of the results. For example; individuals may self select into a service, because they are highly motivated to address one or more of their needs. This would result in a positive selection bias, meaning that for these persons we would generally expect a better re-offending outcome as they are more motivated. Alternatively, some organisations might specifically target persons who are known to have more complex needs and whose attitudes to addressing their needs are more challenging. This would result in a negative selection bias, meaning that for these persons we would generally expect a poorer re-offending outcome as they are not motivated. However, factors which would lead to selection bias in either direction are not represented in our underlying data, and cannot be reflected in our modelling. This means that all results should be interpreted with care, as selection bias cannot be accounted for in analyses.

Furthermore, only 72 of the 321 offenders who gained employment with Blue Sky were in the final treatment group. The section "Processing the Data" outlines key steps taken to obtain the final group used in the analysis. In many analyses, the creation of matched control group will mean that some individuals, who will usually have particular characteristics – for example a particular ethnicity, or have committed a certain type of offence, will need to be removed to ensure that the modelling will work. Steps will always be taken at this stage to preserve as many individuals as possible, but due to the intricacies of statistical modelling some attrition at this stage will often result. As such, the final treatment group may not be representative of all offenders who have been employed by Blue Sky. In all analyses from the Justice Data Lab, persons who have ever been convicted of sex offences will be removed, as these individuals are known to have very different patterns of re-offending.

In this analysis we have not been able to statistically control for employment outcomes in the control group, therefore this analysis cannot present a direct comparison with Blue Sky's employment and any other type of employment, or Blue Sky's employment and no employment at all. This analysis presents a comparison between offenders with similar characteristics, where one group (the treatment group) was known to receive short term employment from the organisation Blue Sky, and the comparison group did not.

The re-offending rates included in this analysis **should not** be compared to the national average, nor any other reports or publications which include re-offending rates – including those assessing the impact of other interventions. The re-offending rates included in this report are specific to the characteristics of those persons who were employed by Blue Sky and who could be matched. Any other comparison would not be comparing like for like.

For a full description of the methodology, including the matching process, see [www.justice.gov.uk/downloads/justice-data-lab/justice-data-lab-methodology.pdf](http://www.justice.gov.uk/downloads/justice-data-lab/justice-data-lab-methodology.pdf).

### **Assessing Statistical Significance**

This analysis uses statistical testing to assess whether any differences in the observed re-offending rates are due to chance, or if the intervention is likely to have led to a real change in behaviour. The outcome of the statistical testing is a value between 0 and 1, called a 'p-value', indicating the certainty that a real difference in re-offending between the two groups has been observed. A value closer to 0 indicates that the difference in the observed re-offending rates is not merely due to chance. For example, a p-value of 0.01 suggests there is only a 1 per cent likelihood that any observed difference in re-offending has been caused by chance.

For the purposes of the analysis presented in this report, we have taken a p-value of up to 0.05 as indicative of a real difference in re-offending rates between the treatment and control groups.

The confidence intervals in the figure are helpful in judging whether something is significant at the 0.05 level. If the confidence intervals for the two groups do not overlap, this indicates that there is a real difference between the re-offending rates.

## Annex

**Table 1: Characteristics of offenders in the treatment and control groups**

	Treatment Group	Matched Control Group	Standardised Difference
<b>Number in group</b>	<b>72</b>	<b>212,131</b>	
<b>Ethnicity</b>			
White	72%	75%	-6
Black	18%	16%	5
Asian	7%	7%	0
Other	3%	2%	5
<b>Nationality</b>			
UK Citizen	96%	95%	2
Foreign National	3%	3%	-2
Unknown Nationality	1%	1%	0
<b>Gender</b>			
Proportion that were male	94%	94%	1
<b>Age</b>			
Mean age at Index Offence	29	29	5
Mean age at first contact with CJS	16	16	-3
<b>Index Offence<sup>1</sup></b>			
Violent offences including robbery	42%	42%	0
Burglary	19%	17%	5
Theft and handling	11%	12%	-2
Fraud and Forgery	4%	4%	1
Motoring offences, including theft of and from Vehicles	8%	9%	-3
Drugs	14%	14%	-1
Other	1%	2%	-1
<b>Length of Custodial Sentence</b>			
6 months or less	17%	20%	-8
6 months to 12 months	6%	7%	-5
12 months to 4 years	56%	55%	0
4 years to 10 years	22%	18%	10
<b>Criminal History<sup>2</sup></b>			
Mean Copas Rate	-0.82	-0.85	4
Mean total previous offences	29	27	7
Mean previous criminal convictions	3	3	6
Mean previous custodial sentences	11	10	7
Mean previous court orders	3	3	6
<b>Employment and Benefit History</b>			
In P45 employment (year prior to conviction)	38%	35%	5
In P45 employment (month prior to conviction)	13%	13%	-1
Claiming Out of Work Benefits (year prior to conviction) <sup>3</sup>	68%	67%	2
Claiming Job Seekers Allowance (year prior to conviction)	56%	53%	4

Claiming Incapacity Benefit (year prior to conviction)	29%	27%	4
Claiming Income Support (year prior to conviction)	21%	20%	2
<b>Average days to first re-offence</b>	335	289	
<b>Notes:</b>			
1 Index Offence is based on OGRS categories. Further details on make-up of categories available upon request.			
2 All excluding Penalty Notices for Disorder. All prior to Index Offence.			
3 Out of Work Benefits include people on Jobseeker's Allowance (JSA), Employment and Support Allowance (ESA), Incapacity Benefits (IB) and Income Support (IS) but it does not count people whose primary benefit is Carer's Allowance (CA).			
All figures (except mean copas rate) are rounded to the nearest whole number, this may mean that percentages do not sum to 100%.			
<b>Standardised Difference Key</b>			
<b>Green - the two groups were well matched on this variable (-5% to 5%)</b>			
<b>Amber - the two groups were reasonably matched on this variable (6% to 10% or -6% to -10%)</b>			
<b>Red - the two groups were poorly matched on this variable (greater than 10% or less than -10%)</b>			

Table 1 in this Annex shows that the two groups were reasonably matched on all variables found to have associations with receiving treatment and/or re-offending. The standardised differences are highlighted as amber (i.e. between 6% to 10% or -6% to -10%) in a number of cases, suggesting that the control group could have been slightly better matched in these cases, but were still indicative of a control group who exhibit similar characteristics.

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