Ministry of Justice

Justice Data Lab
Re-offending Analysis:
Prison Fellowship - Sycamore Tree programme

Summary

This analysis assessed the impact on re-offending of a course run by the organisation Prison Fellowship. The one year proven re-offending rate[1] for 192 offenders on this course was 27%, compared with 29% for a matched control group of similar offenders. Statistical significance testing has shown that this difference in the re-offending rates is not statistically significant[2]; meaning that at this stage there is insufficient evidence to conclude that completing the Prison Fellowship's Sycamore Tree programme led to a reduction in re-offending. However, the results of the analysis do not mean that the Sycamore Tree programme failed to impact on re-offending.

What you can say: There is insufficient evidence at this stage to draw a conclusion about the impact of completing the Sycamore Tree programme run by the Prison Fellowship on re-offending.
What you cannot say: This analysis shows that completing the Sycamore Tree programme reduced re-offending by 2 percentage points or by any other amount.

Introduction

Sycamore Tree is a victim awareness programme that teaches the principles of restorative justice. Prisoners on the programme explore the effects of crime on victims, offenders, and the community, and discuss what it would mean to take responsibility for their personal actions. This analysis relates to offenders who undertook the Sycamore Tree programme between 2005 and 2008 in five prisons.

[1] 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.
[2] The difference was non-significant, p=0.60. Statistical significance testing is described on page 5 of this report.

Processing the Data

411

The Prison Fellowship sent data to the Justice Data Lab for 411 offenders who had completed the Sycamore Tree programme course during 2005 to 2008

372

372 of the 411 offenders were matched to the Police National Computer, a match rate of 90.5%. There were 19 dates of birth that invalid, which meant that it was not possible to find these people on the PNC, as date of birth is a requirement for matching.

194

205 offenders had an identifiable custodial sentence with a release date before 2010. Eleven of these had to be removed due to having a very long sentence or that there index offence appeared to be of a sexual nature. Analysis on the unmatched offenders revealed that they have either since been released from prison (2011 or after where re-offending data is not yet available), have not yet been released from custody, or the relevant sentence could not be found on the administrative datasets used.

Creating a Matched Control Group

192

Of the 194 offender records for which re-offending data was available, 192 could be matched to offenders with similar characteristics but who did not attend the Prison Fellowship's Sycamore Tree programme. In total the matched control group consisted of 127,940 offender records.

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

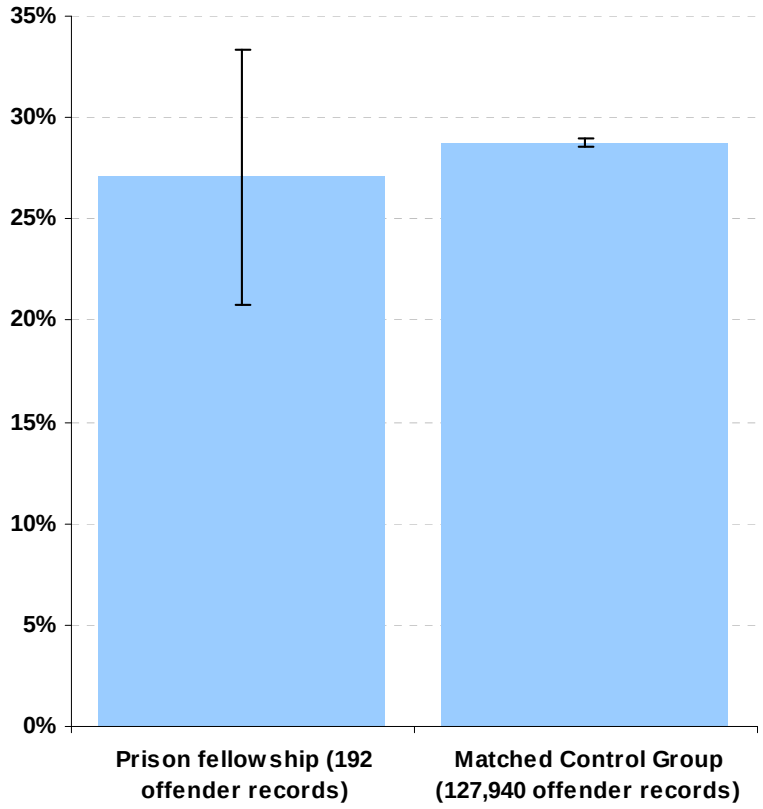
Results

The one year proven re-offending rate for 192 offenders who completed the Prison Fellowship's Sycamore Tree programme was 27%. This compares to 29% for a matched control group of similar offenders. This information is displayed in Figure 1 on the next page.

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 two groups is between 5 and -8 percentage points. However, because this difference crosses 0, we cannot be sure either way that completing the Sycamore Tree programme led to a reduction or an increase in re-offending and thus cannot draw a firm conclusion about its impact.

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 offenders who completed the Sycamore Tree programme *and a matched control group.*



The precision of this estimate could be improved if the size of the Prison Fellowship programme group used in the analysis was increased. It is recommended that the analysis is repeated on a larger sample, including previous years of information, and when additional years of data become available.

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 192 of the 411 offenders on the Sycamore Tree Programme 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 on the Sycamore Tree Programme. 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.

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 Sycamore Tree programme participants 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.

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
Number in group	**192**	**127,940**	
Ethnicity			
White	69%	69%	**0**
Black	22%	22%	**0**
Asian	4%	4%	**0**
Other	1%	2%	**1**
Unknown	3%	3%	**-2**
Nationality			
UK Citizen	95%	95%	**0**
Foreign National	2%	2%	**0**
Unknown Nationality	4%	4%	**1**
Gender			
Proportion that were male	76%	77%	**0**
Age			
Mean age at Index Offence	34	34	**1**
Mean age at first contact with CJS	18	18	**0**
Index Offence[1]			
Violent offences including robbery	52%	52%	**0**
Burglary	17%	17%	**0**
Theft and handling	2%	2%	**0**
Fraud and Forgery	1%	1%	**0**
Motoring offences, including theft of and from Vehicles	3%	3%	**0**
Criminal damage	3%	3%	**1**
Drugs	21%	21%	**0**
Other	2%	2%	**0**
Length of Custodial Sentence			
12 months to 4 years	53%	53%	**0**
4 years to 10 years	43%	43%	**0**
More than 10 years	4%	4%	**1**
Criminal History[2]			
Mean Copas Rate	18.43	18.44	**0**
Mean total previous offences	29	29	**0**
Mean previous criminal convictions	11	11	**0**
Mean previous custodial sentences	3	3	**0**
Mean previous court orders	3	3	**0**
Employment and Benefit History			
In P45 employment (year prior to conviction)	25%	24%	**-1**
In P45 employment (month prior to conviction)	10%	10%	**-2**
Claiming Out of Work Benefits (year prior to conviction)[3]	70%	70%	**-1**
Claiming Job Seekers Allowance (year prior to conviction)	38%	38%	**0**

Claiming Incapacity Benefit (year prior to conviction)	32%	32%	**0**
Claiming Income Support (year prior to conviction)	33%	33%	**-1**
Notes:			
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%.			
Standardised Difference Key			
Green - the two groups were well matched on this variable (-5% to 5%)			
Amber - the two groups were reasonably matched on this variable (6% to 10% or -6% to -10%)			
Red - the two groups were poorly matched on this variable (greater than 10% or less than -10%)			

Table 1 shows that the two groups were well matched on all variables found to have associations with receiving treatment and/or re-offending. All of the standardised mean differences are highlighted green because they were between -5% and 5%, indicating close matches on these characteristics.

Contact Points

Press enquiries should be directed to the Ministry of Justice press office:
Tel: 020 3334 3555

Other enquiries about the analysis should be directed to:
Justice Data Lab Team
Ministry of Justice
Justice Data Lab
Justice Statistical Analytical Services
7th Floor
102 Petty France
London
SW1H 9AJ
Tel: 0203 334 4396
E-mail: Justice.DataLab@justice.gsi.gov.uk

General enquiries about the statistical work of the Ministry of Justice can be e-mailed to: statistics.enquiries@justice.gsi.gov.uk
General information about the official statistics system of the United Kingdom is available from www.statistics.gov.uk