Ministry of Justice

Justice Data Lab Re-offending Analysis: Prisoners Education Trust

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Summary

This report assessed the impact on re-offending of grants provided through the Prisoners Education Trust (PET) to offenders in custody to complete a distance learning course or to purchase learning materials, as well as looking at the re-offending rates of prisoners who were refused such grants.

These analyses are split in to two parts:

1. The first compares the reoffending rates of offenders who were awarded or refused a grant to a similar group of offenders that exclude those identified from PET's database (i.e. Justice Data Lab (JDL) comparisons). This develops on PET's original JDL analyses [1]
2. The second part looks at the reoffending of different groups of offenders who applied for PET's grants and compares those who were awarded with those who were refused such grants. In the previous JDL reports, it was noted that it was possible that the results reflected some bias as a result of the self-selection of prisoners to apply to PET. The prisoners awarded grants by PET were not selected on a random basis but were the result of a process of application and assessment. It is therefore possible that the prisoners awarded grants differ have different, unobserved, characteristics from those selected for the control groups. This set of analyses aims to explore the issue of possible selection bias by comparing the re-offending rates of those refused with that of those awarded (PET comparisons).

JDL comparisons,

The groups were defined as follows:

- **Awarded (any grant type)** - those who were awarded any type of grant, including those who were awarded multiple grants of different types.
- **Academic awards** - those who were only awarded grants for academic courses. This group excludes those who were also awarded other types of grant (e.g. for vocational courses or arts/hobby materials).
- **Vocational awards** - those who were only awarded grants for vocational courses. This group excludes those who were also awarded other types of grant (e.g. for academic courses or arts/hobby materials).
- **Art/Hobby material awards** - those who were only awarded grants for arts/hobby materials. This group excludes those who were also awarded other types of grant (e.g. for academic or vocational courses).

[1] www.gov.uk/government/statistics/justice-data-lab-statistics-april-to-december-2013

- **Awards for BIS accredited[2] courses** - those who were only awarded grants for BIS Accredited courses. This group excludes those who were also awarded other types of grant (e.g. for unaccredited courses or arts/hobby materials).
- **Awards for Open University courses** - those who were awarded grants for Open University courses. This group includes those who had other grants before being awarded a grant for an Open University course. This is to ensure that we included those who may have initially had grants for a lower level course (e.g. a GCSE or A level) which then equipped them for the Open University course.
- **Refused (on "time technicality")** - those offenders who had their application refused on a timing technicality, because it was made less than or equal to 6 months (180 days) before the offender's expected release date (a condition of PET awarding their grants).
- **Refused (not on "time technicality")** - those offenders who had their applications refused, excluding those where the application was refused on a timing technicality.

Each group was compared to similar groups of offenders excluding those the JDL were able to identify from PET's database as in figures 1 and 2 below:

Figure 1 – The one year proven reoffending rate[3] for the JDL comparisons carried out for those awarded grants by PET

Grant Type	Matched Treatment Group	Matched Control Group	1 year proven reoffending rate			
			Treatment Group (%)	Control Group (%)	Significant Difference	Estimate of Impact On Reoffending
Academic Awards	1,885	286,528	17	23	Y	-7.9% to -4.1%
Vocational Awards	3,268	321,809	17	25	Y	-9.0% to -6.1%
Arts/Hobby Material Awards	408	185,619	30	35	Y	-9.6% to -0.3%
Awards for BIS Accredited Courses	331	83,579	18	24	Y	-10.0% to -1.0%
Awards for Open University Courses	1,548	249,513	15	21	Y	-8.0% to -4.1%
Awarded (any grant type)	**5,846**	**336,681**	**18**	**25**	**Y**	**-8.0% to -5.7%**

All groups of grant types were found to have lower one year proven reoffending rates than for their JDL control group. Statistical significance testing has shown that these differences in the re-offending rates are statistically significant[4]; meaning that we can be confident that there is a real difference in the re-offending rates of prisoners who were awarded any type of grant.

However, the re-offending rates do differ between the groups. For each group of offenders who are awarded a grant from PET, with the exception of arts/hobby material awards, the one year proven reoffending rates of the groups were between

[2] An accredited course means a course that leads to a qualification which would be approved for public funding through appearing on the Learning Aim Reference Service (LARS) database or its predecessors. The sample selected for this analysis does not represent every course meeting this criterion funded by PET; it is the group of such courses readily identifiable in the PET database as a category specifically funded for this purpose by the Department for Business Innovation and Skills.

[3] The **one year proven re-offending rate** is defined in the glossary in Annex C

[4] In most cases the p-value for the significance test was less than 0.001. For the art/hobby material awards group it was 0.030 and for the awards for BIS accredited courses it was 0.010. Statistical significance testing is described on page 18 of this report.

15% and 18% compared to between 21% and 25% for the matched control groups of similar offenders.

For the arts/hobby material awards group the one year proven reoffending rate was 30% compared to 35% for the matched control group, a higher re-offending rate than the other award groups, but still significantly lower than would be expected.

What you can say: Overall, this analysis shows that participating in an intervention provided by Prisoners Education Trust led to a reduction in re-offending of between 6 and 8 percentage points (for those awarded any grant type). For the specific types of awards, the analyses show that:

- receiving a grant from the Prisoners Education Trust to undertake an **academic course** in custody led to a reduction in re-offending of between 4 and 8 percentage points.
- receiving a grant from the Prisoners Education Trust to undertake an **vocational course** in custody led to a reduction in re-offending of between 6 and 9 percentage points.
- receiving a grant for **Arts and Hobby Materials** provided by Prisoners Education Trust in custody led to a reduction in re-offending of between 0.3 and 10 percentage points.
- receiving a grant from the Prisoners Education Trust to undertake an **accredited course** in custody led to a reduction in re-offending of between 1 and 10 percentage points.
- receiving a grant from the Prisoners Education Trust to undertake an **Open University** course in custody led to a reduction in re-offending of between 4 and 8 percentage points.

Figure 2 – The one year proven reoffending rate for the JDL comparisons carried out for those refused grants by PET

Grant Type	Matched Treatment Group	Matched Control Group	1 year proven reoffending rate			
			Treatment Group (%)	Control Group (%)	Significant Difference	Estimate of Impact On Reoffending
Refused (not on time technicality)	1,082	228,506	16	23	Y	-8.9% to -4.1%
Refused (on time technicality)	340	360,529	24	32	Y	-12.9% to -3.5%

The one year proven re-offending rate for those who were refused a grant by PET (not on "time technicality") was 16%, compared with 23% for a matched control group of similar offenders whilst the one year proven re-offending rate for those refused a grant (on "time technicality") was 24%, compared with 32% for a matched control group of similar offenders. Statistical significance testing on both results has shown that these differences in the re-offending rates are statistically significant[5] meaning that we can be confident that there is a real difference in the re-offending rate for both groups who were refused a grant. These results may suggest that

[5] The p values for these significance test were both less than 0.001. Statistical significance testing is described on page 18 of this report

motivation and/or the ability to apply is a factor in re-offending patterns (i.e. those who apply for the opportunity available from a PET grant have thereby demonstrated motivation and a degree of commitment to make life changes, and this may be an important factor in whether they go on to reoffend whether or not a grant is awarded), however suitable data is not available to be able to control for this aspect.

What you can say: Those prisoners refused a grant by PET showed a reduction in re-offending of:

- between 4 and 9 percentage points for those who were refused, not on a "time technicality"
- between 3 and 13 percentage points for those who were refused on a "time technicality".

PET Comparisons

Figure 3 gives an overview of comparisons between four awarded and refused groups, aiming to assess the issue of possible selection bias as mentioned previously. The groups compared were as follows:

- **All awarded to all refused** – compares those who were awarded any type of grant by PET to all those who were never awarded a grant whether refused on "time technicality" or not
- **All awarded to all refused (on "time technicality")** – compares those who were awarded any type of grant by PET to those who were never awarded a grant, refused on "time technicality"
- **Awarded first time to refused then awarded** – compares those who were awarded a grant by PET on their first application to those who were initially refused but were awarded a grant on a subsequent application.
- **Refused then awarded to refused (not on "time technicality")** – compares those who were initially refused but were awarded a grant on a subsequent application to those who were never awarded a grant (excluding those refused on "time technicality").

Figure 3 – The one year proven reoffending rate[1] for the PET comparisons between those awarded and refused grants

Treatment group	Comparison group	Treatment Group	Comparison Group	1 year proven reoffending rate			
				Treatment Group (% reoffended)	Comparison Group (% reoffended)	Significant Difference	Estimate of Impact On Reoffending
Awarded	Refused	5,859	1,422	18	18	N	-2.6% to +1.9%
Awarded	Refused (on time technicality)	5,859	340	18	24	Y	-10.7% to -1.4%
Awarded first time	Refused then awarded	5,517	348	18	13	Y	1.5%pts to 8.8%
Refused then awarded	Refused (not on time technicality)	348	1,082	13	16	N	-7.6% to +0.7%

The one year proven reoffending rate was 18% for both offenders awarded or refused a grant (including those refused on "time technicality). The one year proven reoffending rate of those initially refused a grant before being awarded a grant was 13%, compared to 16% for those who were refused (not on "time technicality").

Statistical significance testing shows that both differences are not significant[6]. This indicates that there is insufficient evidence to draw conclusions about the differences in the re-offending rates between these groups.

However, the one year proven reoffending rate for those awarded any type of grant by PET was 18%, compared to 24% for those who were refused on "time technicality". The one year proven reoffending rate for those prisoners awarded a grant on their first application was 18%, compared to 13% for offenders who were initially refused a grant but then successful on a subsequent application. Statistical significance testing for both of these comparisons shows that these differences are significant[7]. These results suggest that these groups do differ in terms of their re-offending patterns. It is possible that this could be explained by the different characteristics of these groups. In particular the groups differ in relation to characteristics such as length of sentence. There may also be factors associated with motivation of this cohort which are not reflected in the underlying MoJ data. Note that the characteristics of offenders in these comparison groups do differ considerably and so caution should be taken when interpreting these results.

What you can say:

All awarded to all refused - there is insufficient evidence at this stage to draw a conclusion about the differences between these groups in their reoffending rates.

All awarded to all refused (on "time technicality") – being awarded a grant from the Prisoners Education Trust led to a reduction in re-offending of between 1 and 11 percentage points compared to those who were refused on "time technicality".

Awarded first time to refused then awarded - those awarded a grant on their first application had a higher reoffending rate of between 1 and 9 percentage points compared to those who were initially refused but subsequently awarded a grant.

Refused then awarded to refused (not on "time technicality") - there is insufficient evidence at this stage to draw a conclusion about the differences between these groups in their reoffending rates.

What you cannot say:

All awarded to all refused - this analysis shows that those who were awarded a grant by PET decreased proven re-offending by 3 percentage points, or by any other amount.

Refused then awarded to refused (not on "time technicality") - this analysis shows that those who were awarded a grant by PET, after being initially refused, decreased proven re-offending by 8 percentage points, or by any other amount.

[6] The p values for these significance tests were 0.764 and 0.107 respectively. Statistical significance testing is described on page 18 of this report.

[7] The p values for these significance tests were 0.011 an d 0.006 respectively. Statistical significance testing is described on page 18 of this report.

Introduction

Prisoners Education Trust (PET) provides grants to offenders in prison throughout England for a distance learning course or to purchase materials for arts and hobbies. Learning is supported through a combination of PET's charitable funds and grant funding to PET from the Department for Business Innovation and Skills (BIS) and the Welsh Assembly Government for courses falling into specified criteria. Information on the availability of distance learning grants is available in prisons via distance learning co-ordinators generally in education departments.

Prisoners complete applications (which need prison endorsement) for the grants including personal letters. They are then awarded by a panel of Prisoners Education Trust trustees on the basis of the strength of the application including such issues as suitability of the course sought, evidence of ability and commitment to complete it successfully, and rationale for wanting to undertake the study. Letters of refusal encourage applicants to reapply, perhaps suggesting an alternative course or encouraging them to address educational needs via a prison course and referring them to the prison education department.

The Prisoners Education Trust also offers advice about distance learning courses and provide briefings about how the courses relate to employment paths and possibilities. They support prisoner learners, and follow their progress. In some prisons and regions, prisoners are trained to act as peer learning mentors.

It was noted in a previous request that this type of intervention requires offenders to apply and show commitment and ability for education and so the individuals in the data may have particular characteristics relating to motivation and (with the exception of the arts and hobby materials applications) educational ability. In order to explore whether this might have biased the results this analysis also includes comparisons of the reoffending of offenders whose applications were rejected to that of offenders whose applications were accepted and offenders who were not identified from the data supplied by PET.

This is a re-offending analysis of offenders who applied for a grant for various types of study between January 2002 and March 2013; these included grants for academic and vocational courses, Open University courses, accredited courses funded by BIS, and grants for arts and hobby materials.

Data Lab Control Comparisons

Processing the Data

17,727 PET sent data to the Justice Data Lab for 17,727 offenders who were awarded grants between January 2002 and end of March 2013.

15,928 15,928 of these 17,727 offenders were matched to the Police National Computer, a match rate of 90%.

7,374 7,374 of the 15,928 offenders had an identifiable custodial sentence where the grant award date was between the conviction and release dates.

5,859 A further 1,515 offenders were removed, mainly due to having had one or more previous sex offences (please see Excel Table C for further details). 5,859 offenders were available for matching.

Figure 4 gives these breakdowns for the remaining JDL control group comparisons:

Figure 4 – Data matching summary for JDL comparison analyses[8]

	Data sent by PET	Matched to Police National Computer (PNC)	PNC Match Rate	Identifiable custodial sentence	Other removals	Total available for matching
Academic Awards	6,304	5,635	89%	2,342	456	1,886
Vocational Awards	8,013	7,213	90%	3,701	430	3,271
Arts/Hobby Material Awards	2,081	1,883	90%	937	529	408
Awards for BIS Accredited Courses	1,134	1,028	91%	415	81	334
Awards for Open University Courses	5,609	5,031	90%	1,951	401	1,550
Refused (not on time technicality)	3,054	2,707	89%	1,274	192	1,082
Refused (on time technicality)	582	528	91%	400	60	340

The high rate of attrition seen between matching to the PNC and finding an identifiable custodial sentence may be due to one or more of the following reasons;

- Some offenders who were matched to the PNC could not be matched to the MoJ's re-offending dataset. This may be because they were not released prior to March 2013 and information on their re-offending is not available.

[8] Excel table C gives more details about the other removals. The main reason for removal was current or previous sex offences.

- Similarly, we were not able to identify a suitable custodial sentence within our administrative datasets for some of those who PET have worked with[9].
- Grants were awarded, and the relevant courses took place from January 2002 which means that those on longer sentences may have been in custody since before 2000 when there were known issues with the administrative datasets used.

The characteristics of those not included in the treatment groups, but matched to the re-offending data, were compared against the characteristics of the treatment groups to assess any possible bias:

- Comparing matched and unmatched offenders for all JDL comparisons, they showed similar characteristics with regards to ethnicity and nationality
- Some JDL comparison groups showed a similar distribution when looking at gender between the matched and unmatched offenders. However, for art/hobby material awards, accredited courses, refused (not on "time technicality") and refused (on "time technicality"), the matched set of offenders had a slightly higher proportion of females than the unmatched offenders
- The other main differences between the matched and unmatched offender groups related to the severity of index offence and sentence length. The matched groups contained higher proportions of offenders with tier 1 and 2 offences and also higher proportions of offenders on sentences of 12 months or more.

As such, the final treatment groups may not be representative of all offenders dealt with by PET so all results should be interpreted with care.

Creating a Matched Control Group

Figure 5 shows the results of matching the treatment and control groups. For each group, a number of prisoners could not be matched to offenders with similar characteristics, but who did not receive a service from Prisoners Education Trust, and so were removed from the final matched treatment groups.

[9] www.gov.uk/government/uploads/system/uploads/attachment_data/file/449623/proven-reoffending-definitions-measurement-jul15.pdf

Figure 5 – Matched treatment and control group sizes

	Total treatment group available	Matched treatment group	Matched control group
Awarded (any grant type)	5,859	5,846	336,681
Academic Awards	1,886	1,885	286,528
Vocational Awards	3,271	3,268	321,809
Arts/Hobby Material Awards	408	408	185,619
Awards for BIS Accredited Courses	334	331	83,579
Awards for Open University Courses	1,550	1,548	249,513
Refused (not on time technicality)	1,082	1,082	228,506
Refused (on time technicality)	340	340	360,529

Excel tables A1 to A8 provide information on the characteristics of the treatment and control groups. Further data on the matching process is available upon request.

Results

One-year Reoffending Rate

As in the summary, Figure 6 compares, for each group, the reoffending rate of those who received the service (the treatment group) against the matched control group of similar offenders. It gives an indication of whether the change was significant and gives the range of values in which we can be confident that the true difference in reoffending lies.

Figure 6 – Table comparing the reoffending of treated offenders against the matched control group of similar offenders.

Grant Type	Matched Treatment Group	Matched Control Group	1 year proven reoffending rate			
			Treatment Group (%)	Control Group (%)	Significant Difference	Estimate of Impact On Reoffending
Academic Awards	1,885	286,528	17	23	Y	-7.9% to -4.1%
Vocational Awards	3,268	321,809	17	25	Y	-9.0% to -6.1%
Arts/Hobby Material Awards	408	185,619	30	35	Y	-9.6% to -0.3%
Awards for BIS Accredited Courses	331	83,579	18	24	Y	-10.0% to -1.0%
Awards for Open University Courses	1,548	249,513	15	21	Y	-8.0% to -4.1%
Refused (not on time technicality)	1,082	228,506	16	23	Y	-8.9% to -4.1%
Refused (on technicality)	340	360,529	24	32	Y	-12.9% to -3.5%
Awarded (any grant type)	**5,846**	**336,681**	**18**	**25**	**Y**	**-8.0% to -5.7%**

Figures 7 and 8 present, for each JDL comparison (awarded and refused groups), 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 the analyses we can be confident that the true difference in re-offending between the treatment and control groups is

- a reduction between 6 and 8 percentage points for those who were awarded any type of grant

- a reduction between 4 and 8 percentage points for those who were awarded grants for academic courses
- a reduction between 6 and 9 percentage points for those who were awarded grants for vocational courses
- a reduction between 0.3 and 10 percentage points for those who were awarded grants to purchase art/hobby materials
- a reduction between 1 and 10 percentage points for those who were awarded grants for accredited courses
- a reduction between 4 and 8 percentage points for those who were awarded grants for Open University courses
- a reduction between 4 and 9 percentage points for those refused (not on a "time technicality")
- a reduction between 3 and 13 percentage points for those refused on a "time technicality"

These ranges are based on comparing each set of confidence intervals showed in Figures 7 and 8.

Figure 7 – The best estimates for the one year proven re-offending rate for the groups of offenders who were awarded a grant by PET and their matched control groups

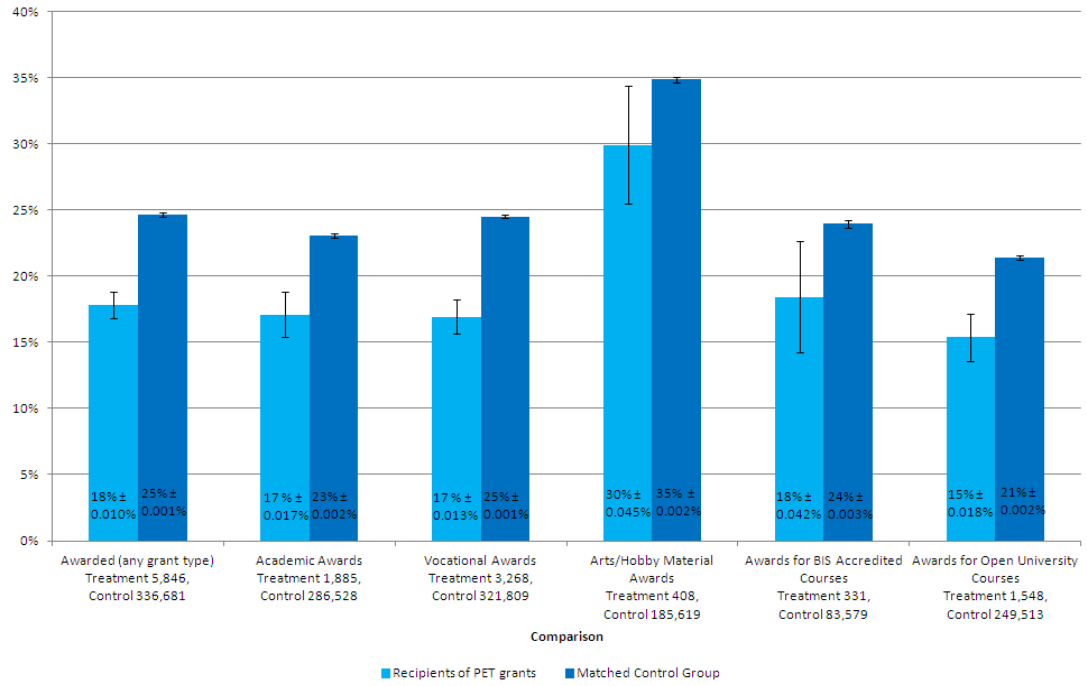
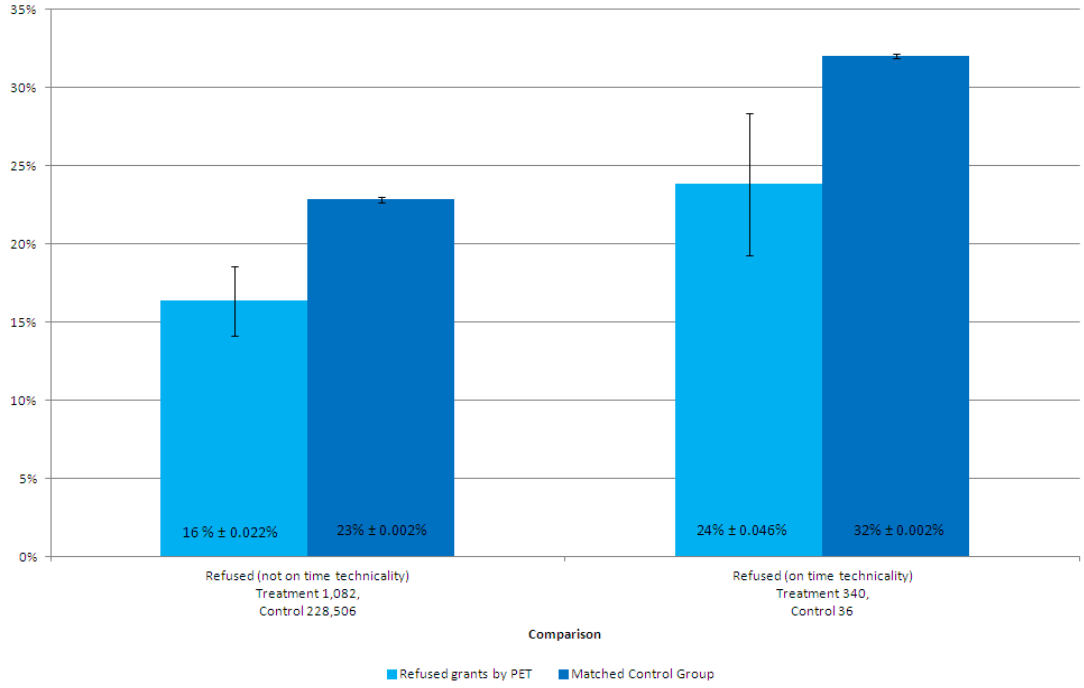


Figure 8 – The best estimates for the one year proven re-offending rate for the groups of offenders who were refused a grant by PET



The fact that, on both graphs, the intervals don't overlap indicates that the differences between the treatment and control groups are significant. 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.

The precision of these estimates could be improved if the sizes of the Prisoners Education Trust programme groups used in these analyses were increased.

Additional proven re-offending measures

Frequency of re-offending

Figure 9 shows, for each comparison, the frequency of reoffending of those treated by PET and a matched control group of similar offenders. It also gives information as to whether the change was statistically significant or not.

Figure 9 –The frequency of re-offending of treated offenders against a matched control group of similar offenders.

Grant Type	Matched Treatment Group	Matched Control Group	Frequency of reoffending (offences per person)			
			Treatment	Control	Significant difference	P Value
Academic Awards	1,885	286,528	0.46	0.68	Y	<0.0001
Vocational Awards	3,268	321,809	0.42	0.74	Y	<0.0001
Arts/Hobby Material Awards	408	185,619	1.07	1.19	N	0.306
Awards for BIS Accredited Courses	331	83,579	0.47	0.65	Y	0.014
Awards for Open University Courses	1,548	249,513	0.38	0.61	Y	<0.0001
Refused (not on time technicality)	1,082	228,506	0.45	0.66	Y	<0.0001
Refused (on technicality)	340	360,529	0.68	1.14	Y	<0.0001
Awarded (any grant type)	**5,846**	**336,681**	**0.47**	**0.75**	**Y**	<0.0001

Most of these results are significant, in line with the one year proven reoffending rates. The exception is for the arts/hobby material awards group, where the difference in the frequency of reoffending wasn't significant. This was also one of the smallest treatment groups.

The same caveats and limitations apply to these findings, which are described below [10].

Time to re-offending

Figure 10 shows, for each comparison, the number who reoffended within each group and the average number of days to the first offence. It also gives an indication as to whether the change is significant.

Figure 10 – Table comparing the average number of days to the first offence for those who re-offended from the treatment groups and matched control groups of similar offenders.

Grant Type	Treatment group		Control Group		Significant difference	P value
	Reoffenders from treatment group	Average days to first offence	Reoffenders from control group	Average days to first offence		
Academic Awards	322	178	107,126	160	Y	<0.001
Vocational Awards	553	178	126,085	157	Y	<0.001
Arts/Hobbies Awards	122	149	74,148	144	N	0.586
BIS Accredited Awards	61	191	27,436	160	Y	0.028
Open University Awards	238	182	88,786	161	Y	0.001
Refused (not on time technicality)	177	164	77,008	162	N	0.854
Refused (on technicality)	81	158	155,184	140	N	0.105
Awarded (any grant type)	**1,041**	**175**	**135,174**	**156**	**Y**	<0.001

For most of the groups awarded grants, the differences were significant, in line with the findings on the one year proven reoffending rates. The exception, again, was for the arts/hobby material awards group where the difference in days to re-offence was not significant.

[10] The caveats and limitations of this analysis are described on page 17 of this report.

For both of the refused groups the differences in days to re-offence were not significant, whereas the proven one year reoffending rate differences were significant.

The same caveats and limitations apply to these findings, which are described below.

PET Data Comparisons

The prisoners funded by PET were not selected on a random basis but were the result of a process of application and assessment. It is therefore possible that the prisoners funded differ from others through characteristics that were not picked up by the observed characteristics which the JDL used to select their control groups. The following analyses aim to look at the issue of possible selection bias by comparing the re-offending rates of those refused with that of those awarded.

Care must be taken in interpreting these comparisons as the observed characteristics of the groups compared do differ as set out in annex B. This is to be expected as they are not comparisons between a treatment group and a control group who's observed characteristics have been matched. These differences in observed characteristics may account for some of the differences in reoffending outcomes, whilst unobserved characteristics such as motivation may also play a part.

Results

Figure 11 – Summary table comparing the one year reoffending rates for PET comparison groups

Treatment group	Comparison group	Treatment Group	Comparison Group	1 year proven reoffending rate			
				Treatment Group (% reoffended)	Comparison Group (% reoffended)	Significant Difference	Estimate of Impact On Reoffending
Awarded	Refused	5,859	1,422	18	18	N	-2.6% to +1.9%
Awarded	Refused (on time technicality)	5,859	340	18	24	Y	-10.7% to -1.4%
Awarded first time	Refused then awarded	5,517	348	18	13	Y	1.5%pts to 8.8%
Refused then awarded	Refused (not on time technicality)	348	1,082	13	16	N	-7.6% to +0.7%

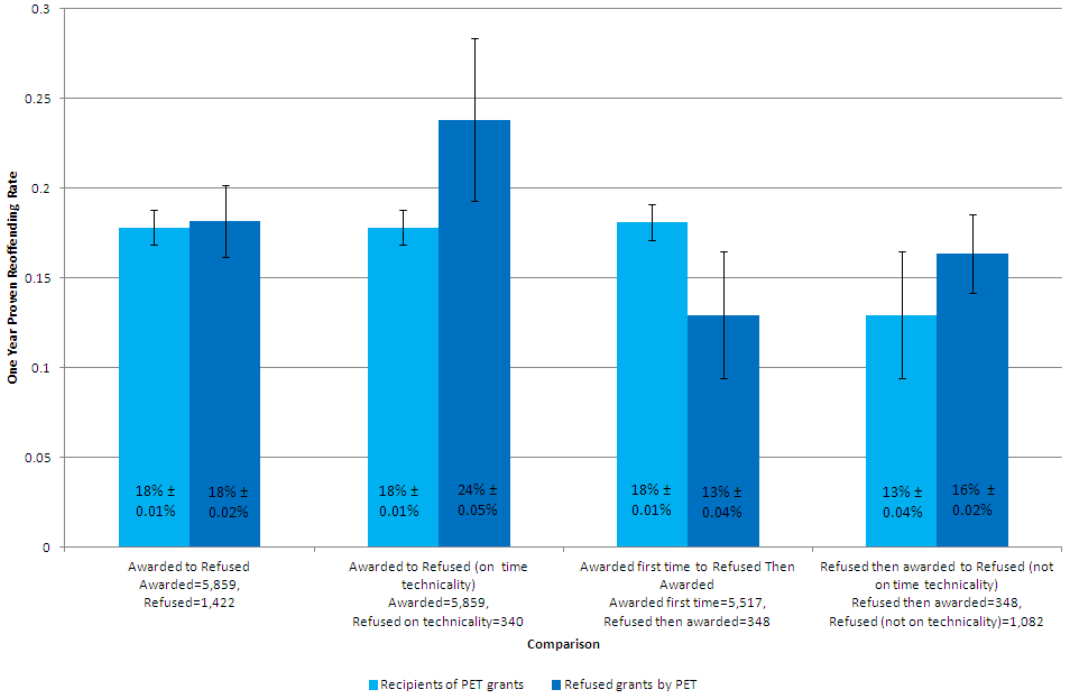
The one year proven reoffending rate for those awarded a grant by PET was 18%, compared to 18% for offenders who were refused (including those refused on "time technicality"). The one year proven reoffending rate for those who were initially refused a grant was 13%, compared to 16% for those who were refused (not on "time technicality"). Statistical significance testing showed that these differences were not significant.

The 18% one year proven reoffending rate for those offenders awarded any type of grant by PET compares to 24% for those who were refused on "time technicality". The one year proven reoffending rate for offenders who were awarded a grant on their first application was 18%, this compares to 13% for offenders who were initially refused a grant but were successful on a subsequent application. Statistical significance testing showed that these differences were significant.

Figure 11 shows the 95% confidence intervals for the re-offending rates of each PET comparison, i.e. the range in which we can be 95 per cent sure that the true re-offending rate for the groups lie. For the analyses we can be confident that the true difference in re-offending between groups is

- between a 3 percentage point reduction and a 2 percentage point increase in reoffending between those awarded a grant and those refused.
- a reduction between 11 and 1 percentage points in reoffending between those awarded a grant and those refused on "time technicality".
- an increase between 1 and 9 percentage points in reoffending between those who were awarded a grant on their first application and those who were initially refused.
- between an 8 percentage point decrease and a 1 percentage point increase in reoffending between those who were awarded a grant after initially being refused and those who were refused (not on "time technicality").

Figure 12 – The best estimates for the one year proven re-offending rate for the PET comparison groups



Excel tables B1 to B4 provide information on the characteristics of each set of comparison groups.

Additional proven re-offending measures

Frequency of re-offending

Figure 13 compares the frequency of reoffending for each of the PET comparisons. It also gives information as to whether the change was statistically significant or not.

Figure 13 - Table comparing the frequency of reoffending of treated offenders against who were awarded a grant from PET to control offenders who were refused a grant

Treatment group	Comparison group	Treatment Group	Comparison Group	Frequency of reoffending (offences per person)			
				Treatment	Comparison	Significant difference	P Value
Awarded	Refused	5,859	1,422	0.47	0.50	N	0.463
Awarded	Refused (on time technicality)	5,859	340	0.47	0.68	Y	0.027
Awarded first time	Refused then awarded	5,517	348	0.48	0.26	Y	<0.001
Refused then awarded	Refused (not on time technicality)	348	1,082	0.26	0.45	Y	0.003

Comparisons of the frequency of reoffending were generally in line with the one year proven reoffending results. The only difference was when comparing the refused then awarded with the refused (excluding on technicality) groups. While the difference in the one year proven reoffending measures was not significant, the difference in the frequency of reoffending was significant.

Time to re-offending

Figure 14 – Table comparing the average number of days to the first offence for those who re-offended from treated offenders against who were awarded a grant from PET to control offenders who were refused a grant.

Treatment group	Comparison Group	Treatment group		Comparison Group		Significant difference	P Value
		Reoffenders from treatment group	Average days to first offence	Reoffenders from comparison group	Average days to first offence		
Awarded	Refused	1043	175	258	162	N	0.074
Awarded	Refused (on time technicality)	1043	175	81	158	N	0.179
Awarded first time	Refused then awarded	998	173	45	212	Y	0.013
Refused then awarded	Refused (not on time technicality)	45	212	177	164	Y	0.005

For the first comparison ('awarded' and 'refused' comparison), the difference in the number of days was not significant in line with the one year proven re-offending measure. Similarly, for the third comparison ('awarded first time' and 'refused then awarded') the difference in the number of days to re-offence was significant.

For the awarded to refused (on "time technicality") comparison, the difference in the number of days to re-offence was not statistically significant whereas the difference in the one year proven reoffending rates was statistically significant.

For the refused then awarded to refused (not on "time technicality") comparison, the difference in average number of days to re-offence was significant whereas the difference in the proven one year reoffending rates was not statistically significant.

Annex A

Caveats and Limitations

The statistical methods used in this analysis are based on data collected for administrative purposes. While these include details of each offender's 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.
In particular, it would have been helpful in this analysis to take account of education attainment or ability, and motivation to change. It is possible that these characteristics could account for, or explain the observed reduction in re-offending.

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. The particular type of intervention this analysis pertains to (although excluding the grants for arts and hobby materials) requires offenders to apply and show commitment and ability for education, and so the individuals in the data may have particular characteristics relating to motivation and educational ability. This means that all results should be interpreted with care, as selection bias cannot be accounted for in analyses.

Furthermore, only up to 58% of the unique offender records originally shared with the MoJ were in the final treatment groups. The sections on "Processing the Data" outlines the key steps taken to obtain the final groups used in the analysis. In many analyses, the creation of the 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 were targeted by Prisoners Education Trust. A

comparison of the matched offenders, who were included in the treatment groups, and the unmatched offenders, who were excluded, can be found on page 8. 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 persons who were awarded a grant from Prisoners Education Trust, and 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 B - Characteristics of treatment and control groups

The accompanying Excel file contains tables, for each comparison, showing the characteristics of the treatment and control groups.

JDL control group comparisons (tables A1-A8)
The tables show that, for each of the comparisons against Justice Data Lab control groups, the treatment and control groups were well matched on key variables found to have associations with receiving treatment and/or re-offending. The standardised differences are all between -5% and 5% and are indicative of control groups that exhibit similar characteristics to the treatment groups.

PET comparisons (tables B1-B4)
As these comparisons are not set up to be matched control groups, it was not expected that each pair would be well matched. Below gives a summary of how each set compare to each other on key variables associated with receiving treatment and/or re-offending:

Awarded versus Refused: Overall, these two groups compare better to each other than the other pairs. The poorest comparison was for gender and sentence length (with the standardised differences being beyond +/-10%), with the 'Awarded' group containing a higher proportion of females and a higher proportion of longer sentences.

Awarded versus Refused (on "time technicality"): These two groups are the least similar pair of the PET comparisons. The poorest comparisons were for gender, nationality and sentence type, with the 'Awarded' group showing a lower proportion of UK citizens, a higher proportion of females and a much higher proportion of longer sentences. The large difference in sentence type may be explained by the fact that the 'Refused technicality' group consists of individuals who were refused because they applied less than six months before their release from custody, as this group may preferentially select those with shorter sentences.

Awarded First Time versus Refused Then Awarded: Generally, this pair compares fairly well. The poorest comparisons were for nationality, gender, age at index offence and sentence type, with the 'Awarded first time' group showing a higher proportion of UK citizens and a higher proportion of females, a lower average age at the time of index offence and a lower proportion of longer sentences.

Refused Then Awarded versus Refused (not on "time technicality"): Overall, these groups compare reasonably well. The poorest comparison was on age at index offence and sentence type, with the 'Refused then awarded' group showing a higher average age at the time of index offence and a higher proportion of longer sentences.

Annex C - Glossary of terms

95% Confidence Intervals
If we were to repeat this analysis numerous times then 95% of the time the confidence intervals surrounding the re-offending measure would contain the true mean.

Copas Rate
The Copas rate controls for the rate at which an offender has built up convictions throughout their criminal career. The higher the rate, the more convictions an offender has in a given amount of time.

Custodial Sentence
An individual is sentenced to serve time in custody as a result of being convicted of an offence.

Follow-up period
This refers to the time period of which re-offending is measured from the index date of the index offence. This is 12 months for the one year follow-up period.

Frequency of one year proven re-offending
The number of re-offences committed in a one year follow-up period which were 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, start their court sentence, or from receipt of their caution.

Index Date
The set point from when proven re-offences are measured. This is defined as the date of prison discharge, date of court conviction for non-custodial sentences, date of receipt for a caution, reprimand or final warning or the date of a positive drug test.

Index Offence
The offence of which an individual has been convicted of, and consequently the re-offending behaviour will be measured from.

One year proven re-offending rate
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.

P-value
A value between 0 and 1 of which indicates the certainty that a real difference in re-offending between the two groups has been observed. Statistical significance testing is described on page 18 of this report.

Re-offence
An offence committed following conviction of the index offence which was proven through receipt of a court conviction, caution, reprimand or warning. The first re-offence refers to the first offence committed after conviction for index offence.

Severity
The Ministry of Justice and the Home Office have developed a severity classification system to identify three tiers of offences, with Tier 1 offences being the most serious and tier 3 offences being the least serious. Annex A of the "measurements and definitions" document, which accompanies proven re-offending quarterly statistics, gives the latest classification for tier 1 and tier 2 offences – please see the following link:
www.gov.uk/government/uploads/system/uploads/attachment_data/file/368435/proven-reoffending-definitions-measurement-oct13.pdf

Standardised Differences
The standardised differences shown in Annex B measure the effect sizes for the comparison of the treatment and control groups. Each of these effect sizes represent the quality of the matching between the two groups for each individual variable.

Suspended Sentence Order
A court order made up of the same requirements as a community order and, in the absence of breach, is served wholly in the community supervised by the Probation Service.

Time to re-offending
Time to re-offending is defined as the average number of days between the index date (release date from custody or start of probation date) and the offence date of the first re-offence within the one year follow-up period described in the definitions above. This measure is only calculated for individuals that re-offended in the one year follow-up period.

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