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## Does Employment on Release from Prison Decrease the Probability of Future Imprisonment?

PS Plus, an ESF part-funded project, has assisted almost 80,000 offenders (beneficiaries) in over 40 prison establishments and 15 probation areas throughout England between September 2002 and July 2008. In the second phase of the project, "PS Plus 2", 33,002 beneficiaries were started on the project between September 2004 and March 2007, in 39 prison establishments and 3 probation areas. PS Plus 2 aimed to assist beneficiaries in gaining employment (full time, part time, self or voluntary) and/or further education on release from prison or during their time on probation. PS Plus 2 successfully brokered employment for 1,875 beneficiaries and education/training for 2,850 beneficiaries on release.

The aim of this summary report is to statistically show whether a beneficiary with employment brokered by PS Plus is more, less or just as likely to be re-imprisoned as a beneficiary without employment, education or training brokered by PS Plus.

172 beneficiaries with employment brokered by PS Plus 2 were selected and matched with 172 beneficiaries without employment, education or training brokered by PS Plus. The beneficiaries were paired based on a number of factors, including age, offence and sentence length, in order to keep the two groups as similar as possible in every respect other than the beneficiary's employment status.

Using the Prison Service database IIS (Inmate Information System), the 344 beneficiaries have been tracked to find any further custodial sentences after leaving the PS Plus project. The study has taken place at least one year after every beneficiary was released from prison. The dataset has been obtained from the PS Plus developed database – CATS. Certain demographic information is downloaded onto CATS from LIDS (Local Inmate Data System).

### Key Points:

- Binomial analysis
  - 42% of beneficiaries *without* employment brokered by PS Plus have been re-imprisoned by the end of the study.
  - 25% of beneficiaries *with* employment brokered by PS Plus have been re-imprisoned by the end of the study.
  - **Beneficiaries *without* employment brokered by PS Plus are approximately 70% more likely to be re-imprisoned than Beneficiaries *with* employment brokered by PS Plus.**
- Kaplan Meier analysis
  - Statistical tests highlight a difference between survival curves plotted for beneficiaries with employment and without employment brokered by PS Plus.
  - **Beneficiaries *without* employment brokered by PS Plus are re-imprisoned sooner than beneficiaries *with* employment brokered by PS Plus.**
- Cox Regression analysis
  - Beneficiaries who need assistance with behaviour issues are 1.5 times more likely to be re-imprisoned than beneficiaries with no need for assistance with behaviour issues.
  - Beneficiaries under 20 years old are over 3 times more likely to be re-imprisoned than beneficiaries aged over 40.
  - Beneficiaries with 1-2 previous offences are 2.4 times more likely to be re-imprisoned than beneficiaries with no previous offences. Beneficiaries with over 3 previous offences are 6.4 times more likely to be re-imprisoned than beneficiaries with no previous offences.
  - **Beneficiaries *without* employment brokered by PS Plus are 1.7 times more likely to be re-imprisoned than beneficiaries *with* employment brokered by PS Plus.**
- Cost Benefit Analysis – post PS Plus intervention
  - Beneficiaries *without* employment committed 134 offences post PS Plus intervention, spending approx. 11,688 days in prison – compared to 70 offences and approx. 3949 days in prison for beneficiaries *with* employment.
  - The estimated cost of offences committed by beneficiaries *without* employment is approximately £2.23 million – compared to £0.52 million for beneficiaries *with* employment.
  - **The estimated cost of keeping beneficiaries *without* employment imprisoned is approximately £943,000 – compared to £319,000 for beneficiaries *with* employment.**

## The Factors

<b>Factor</b>	<b>Not Employed</b>	<b>Employed</b>
<b>Age (years)</b>		
< 20	35	32
20 - 29	91	92
30 - 39	36	31
40 - 49	6	13
50 - 59	4	4
<b>Offence</b>		
Abscond/Bail	8	8
Burglary	23	17
Criminal Damage	0	1
Drugs	46	45
Fraud	2	4
Motor	6	9
Other	15	11
Robbery	15	16
Sex	8	7
Theft	9	5
Vehicle Theft	1	2
Violent	39	47
<b>Sentence Length (months)</b>		
< 6	50	50
7 - 18	34	36
19 - 30	38	31
31 - 42	19	18
43 - 54	23	22
55 - 78	5	10
> 79	3	5
<b>Ethnic Origin</b>		
Asian	10	12
Black	5	5
Mixed	2	3
Not Known	0	2
White British	154	148
White Other	1	2
<b>Finisher Status</b>		
Early Leaver	4	3
Completers	149	149
End of Project	19	20
<b>Schedule 1 Offender</b>		
No	162	157
Yes	10	15
<b>Sex Offender</b>		
No	164	163
Yes	8	9
<b>Previous Offences</b>		
0	102	116
1	22	22
2	14	18
3	6	5
4	12	4
5+	16	7

Table 1: The Factors

This study used the same number of beneficiaries with and without employment from each establishment. This was important because it ensured that there were equal numbers of beneficiaries per gender and per category of prisons in each group. In addition, the success rate of PS Plus staff in gaining employment outcomes differs according to establishment, making it important to have equal numbers of beneficiaries with and without employment from each establishment.

Table 1: The Factors shows:-

Most of the beneficiaries selected were aged between 20 and 29 on starting the project, with the fewest aged between 50 and 59. The largest group in this study have a sentence length of less than 6 months. In general, the longer the sentence length, the fewer beneficiaries. This is typical of the prison service cohort.

The most common offence committed by beneficiaries in this study are violence and drug offences and the majority of beneficiaries' ethnic origin is 'White-British', both of which are representative of the PS Plus dataset (as PS Plus does not work with foreign nationals who are not eligible to work in the UK).

Beneficiaries who have had PS Plus intervention until release (completers) are more likely to gain employment than beneficiaries who leave the project early. The number of previous offences (resulting in a prison term) made before committing the offence which lead to imprisonment and joining the PS Plus 2 project are shown as the previous offences. The majority of PS Plus beneficiaries have no previous offences.

The dataset used in this study contains no disabled beneficiaries, although this was not intentional, and was simply a result of the pairing-up process. Only a very small percentage (less than 2.5%) of the PS Plus cohort are classed as disabled.

The needs and risk levels of the Beneficiaries have also been matched. The majority of PS Plus beneficiaries are low risk to themselves, children, the public, adults, staff and other prisoners.

The intended release area for the selected beneficiaries has also been taken into account. Approximately 50% of the beneficiaries per release area have employment brokered by PS Plus and approximately 50% of the beneficiaries per release area do not have employment brokered by PS Plus.

## The Results

Kaplan Meier estimates have been calculated for the beneficiaries with and without employment. The two survival curves in figure 1 are markedly different. The blue (bottom) curve, representing beneficiaries with no employment, falls more steeply than the green (top) curve, which depicts the beneficiaries with employment. This shows graphically that beneficiaries without employment are re-imprisoned sooner than beneficiaries with employment.

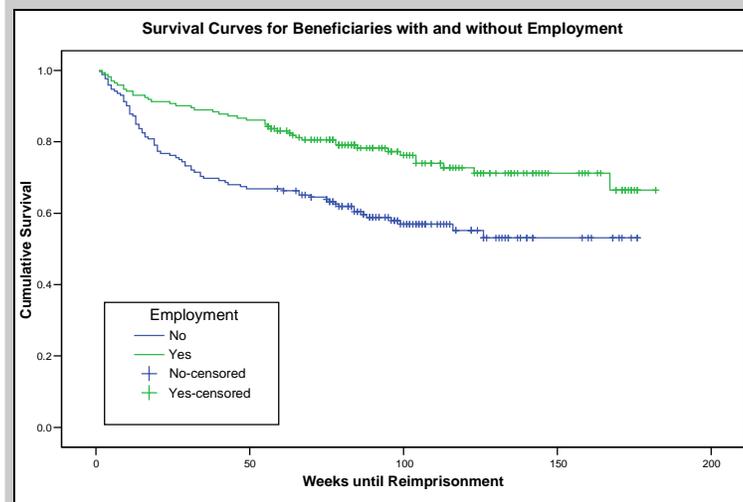


Figure 1: Survival curves for beneficiaries with and without employment.

Figure 1 estimates that after 52 weeks, 86% of the beneficiaries with employment have not been re-imprisoned compared with 67% of the beneficiaries without employment. After 104 weeks, 75% of the beneficiaries with employment have not been re-imprisoned compared with 57% of the beneficiaries without employment.

It is also noted that the first censored<sup>1</sup> beneficiary is counted after (more than) 52 weeks. In the introduction, it was explained that the research into whether or not the beneficiary has been re-imprisoned started more than twelve months after every beneficiary had been released. It can therefore be said of the censored beneficiaries that they have not been re-imprisoned for at least a year after release.

Tests have been carried out in order to determine if there is a statistical difference between the survival curves. All of the tests show a very small significance level, indicating that there is no statistical evidence to suggest that the two survival curves are the same. It is therefore clear that the beneficiaries in this study without employment brokered by PS Plus are re-imprisoned sooner than beneficiaries who have had employment brokered by PS Plus.

A multivariate analysis of the re-imprisonment rate has been estimated using the Cox regression model. The estimated hazard ratio for each variable can be seen in table 2. The **bold** factors and their levels show significant statistical evidence of a difference between the levels of the factor.

Beneficiaries with need for assistance with behaviour issues are approximately 1.5 times more likely at any given time to be re-imprisoned than beneficiaries who have no need for assistance with behaviour issues.

Beneficiaries under the age of 20 are over 3 times more likely to be re-imprisoned than beneficiaries over 40.

Beneficiaries with 1-2 previous offences are 2.4 times more likely at any given time to be re-imprisoned than beneficiaries with no previous offences. Beneficiaries with 3 or more previous offences are 6.4 times more likely at any given time to be re-imprisoned than beneficiaries with no previous offences.

The results show that male beneficiaries are approximately 2.5 times more likely to be re-imprisoned than female beneficiaries, although there is no statistical evidence for this. It is noted that only 10% of the sample are female, which is a characteristic of the PS Plus cohort. Due to the relatively small number of female beneficiaries in the study, it would be unwise to declare that male beneficiaries are more likely to be re-imprisoned than female beneficiaries. A previous reconviction study<sup>2</sup> using a larger dataset suggests that after one year, male offenders are more likely to re-offend than female offenders, although this focuses on gender as a factor rather than employment.

Factor	Exp (B)	95% Confidence Interval		P value – Significance
		Lower	Upper	
Behaviour Need				
<b>No Need vs. Need</b>	<b>1.46</b>	<b>1.00</b>	<b>2.14</b>	<b>0.05</b>
Gender				
Female vs. Male	6.12	0.84	44.82	0.07
Age Group				
<b>Under 20 vs. 40 +</b>	<b>3.09</b>	<b>1.07</b>	<b>8.91</b>	<b>0.04</b>
20 – 29 vs. 40 +	1.31	0.47	3.64	0.61
30 – 39 vs. 40 +	0.53	0.17	1.64	0.27
Number Of Offences				
<b>No Offences vs. 1–2 offences</b>	<b>2.36</b>	<b>1.48</b>	<b>3.76</b>	<b>&lt; 0.01</b>
<b>No Offences vs. 3 + offences</b>	<b>6.39</b>	<b>3.85</b>	<b>10.62</b>	<b>&lt; 0.01</b>
Employment				
<b>Unemployed vs. employed</b>	<b>1.68</b>	<b>1.14</b>	<b>2.48</b>	<b>&lt; 0.01</b>

Table 2: Cox Proportional Hazard Model – statistics for variables in the equation.

1. Rather than ignoring any beneficiaries that to date have not been re-imprisoned, these beneficiaries have also be included. This is done through a process known as “censoring”. Beneficiaries who have not been re-imprisoned are “censored”. An “uncensored” beneficiary’s endpoint is the date they were re-imprisoned, while a “censored” beneficiary’s endpoint is the date of the data collection (20<sup>th</sup> April 08).
2. Reconviction dataset at <http://www.justice.gov.uk>.

The Results (cont.)

**Unemployed beneficiaries are 1.7 times more likely at any given time to be re-imprisoned than employed beneficiaries.**

Figure 2 shows that 42% (73) of beneficiaries without employment brokered by PS Plus have been re-imprisoned, while only 25% (43) of beneficiaries with employment have been re-imprisoned.

There is significant statistical evidence to suggest that having employment brokered by PS Plus reduces the probability of a beneficiary being re-imprisoned.

Of the beneficiaries who were re-imprisoned at the time of data collection, the average time between release and re-imprisonment for the 73 beneficiaries without employment was 33 weeks. However, the average time between release and re-imprisonment for the 43 beneficiaries with employment was 48 weeks.

It can be seen that of the beneficiaries who were re-imprisoned in this study, those *with* employment stayed out of custody longer than beneficiaries *without* employment.

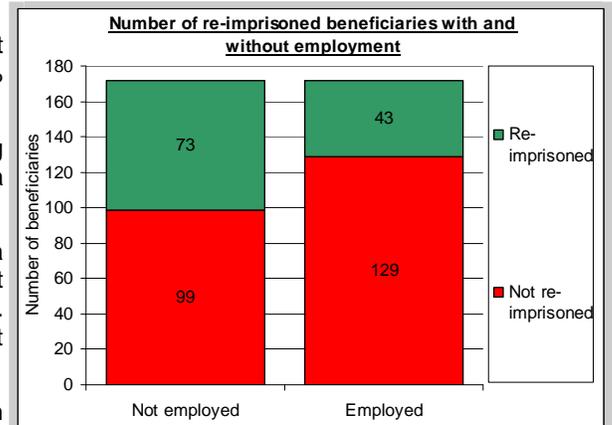


Figure 2: Number of re-imprisoned beneficiaries with and without employment.

Conclusions

**Statistical analysis shows that beneficiaries who have had employment brokered by PS Plus are less likely to be re-imprisoned than beneficiaries who have not had employment brokered by PS Plus.**

**This report shows a direct positive link between employment and not being re-imprisoned.**

It is also noticed that the more offences a beneficiary has committed in the past (and been imprisoned for) the more likely a beneficiary is of being re-imprisoned. These “revolving door” beneficiaries<sup>3</sup> are imprisoned frequently and normally for relatively short periods of time, which disrupts and potentially results in the loss of family ties, accommodation and employment. It can be seen in this study that simply finding employment for such beneficiaries may not be enough to ‘break the cycle’ of offending. Beneficiaries under the age of 20 are more likely to re-offend than beneficiaries aged over 40. Again, it would seem that for younger beneficiaries, employment is not enough to reduce re-imprisonment.

Beneficiaries with behaviour issues are more likely to be re-imprisoned than beneficiaries without behaviour issues. This was found to be only somewhat significant (just under the 5% significance level). Further analysis may be required to see how much influence this factor has on re-imprisonment for beneficiaries with and without employment. Male beneficiaries tend to have a higher rate of re-offending and re-imprisonment<sup>4</sup>. This study found no evidence at the 5% statistical level that the sex of a beneficiary with or without employment has an effect on re-imprisonment. However, the dataset only included 17 pairs of female beneficiaries and a larger sample would be needed to make any firmer conclusions.

A cost benefit analysis has been calculated using two different methods. The first estimates the cost per offence<sup>5</sup> by beneficiaries with and without employment. The second uses the sentence lengths given to the beneficiaries with and without employment, and estimates the average cost of keeping the beneficiaries in prison during their sentence.

Post PS Plus intervention, beneficiaries with employment committed only 70 offences in total, accruing a cost of over £518,000. This is compared to the beneficiaries without employment who committed 134 offences, accruing a cost of nearly £2.23 million. Beneficiaries with employment were only sentenced to 3949 days in prison, accruing a cost of nearly £319,000 to the Prison Service. This is compared to the beneficiaries without employment who were sentenced to 11,688 days, accruing a cost of nearly £943,000 to the Prison Service.

Beneficiaries with employment have committed fewer crimes and spent fewer days in prison (post PS Plus intervention) than the beneficiaries without employment. Beneficiaries with employment have cost considerably less than the beneficiaries without employment. The difference in cost for the 172 beneficiaries with employment to the 172 beneficiaries without employment in terms of the cost of offences committed is over £1.7 million while in terms of the cost to the Prison Service is over £600,000.

3. Wendy Fitzgibbon and Dr Roger Green: 'Mentally Disordered Offenders: Challenges in Using the OASYS Risk Assessment Tool' (2006).  
 4. Adrian Shepherd and Elizabeth Whiting: 'Re-offending of Adults: results from the 2003 Cohort' (2006)  
 5. Home Office Research Study 217, The economic and social costs of crime. Sam Brand and Richard Price (2003) details exactly how the average cost per crime has been calculated with its limitations.