

An Economic Evaluation of Reducing Offending in Partnership

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Summary: Reducing Offending in Partnership (ROP) is a partnership aimed at reducing the reoffending of the most prolific offenders in Northern Ireland. This article reports on a research study that provided an economic assessment of the overarching ROP programme by examining the input costs and outputs of the programme under a single comparative economic model. Specifically, the research examines the criminal activity of over 100 priority offenders who joined the ROP programme in 2014. The study also provides analysis on the financial investment and the overall value for money of the programme by assessing its net economic benefit and cost-benefit ratio.

Keywords: Reducing Offending in Partnership, Northern Ireland, criminal justice, economic evaluation, prolific offenders, evidence, PBNI, PSNI.

Introduction

Helping make communities safer is a key objective of the Police Service of Northern Ireland (PSNI), the Probation Board for Northern Ireland (PBNI), the Youth Justice Agency (YJA), Northern Ireland Prison Service (NIPS) the Department of Justice (DOJ), as well as other organisations working within the criminal justice sector. While recorded crime in Northern Ireland is low in comparison to other areas of the UK, we know that fear of crime remains high and that there is particular concern in communities about priority or prolific offenders. With this in mind, the DOJ, PBNI, NIPS, PSNI and YJA came together to form a partnership aimed at reducing crime and dealing with the most prolific offenders.

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This partnership is called Reducing Offending in Partnership or ROP (Doherty and Dennison, 2013).

ROP is a Northern Ireland-wide approach to the management of priority or prolific offenders. Its objective is to manage people who are at high risk of offending/reoffending and who are causing significant levels of harm within their community.

Offenders are defined by Police in Reducing Offending Units who use a matrix to identify prolific offenders in a particular area. This provides a basis for discussion with partner agencies, based on the risk assessments carried out on those offenders by the respective agencies, leading to confirmation of the offenders deemed to be a 'priority'. ROP is structured around three strands:

- *Prevent and Deter* – early-stage identification and effective intervention strategies to reduce crime and antisocial behaviour among young people
- *Catch and Control* – proactive approach by police and partners to target prolific offenders who persist in their offending behaviour
- *Rehabilitate and Resettle* – partnership working with statutory, voluntary and community sector to support offenders in addressing the issues that will promote their effective resettlement and reduce the risk of reoffending.

At the core of ROP is the delivery of a managed set of interventions, sequenced and tailored to respond to the risks and needs of the individual. So, for example, many of those identified under ROP have very little education or training. Therefore many of the interventions revolve around referring individuals to organisations that can help build skills. Such interventions have the aim of disrupting the offender's criminal activity, thereby reducing their reoffending.

ROP is about providing a more co-ordinated and joined-up approach to dealing with prolific offenders. The relevant agencies work together and share information in a more inclusive and cohesive manner and deliver a set of interventions with the aim of disrupting the offender's criminal activity. It is a local response to local problems.

ROP is modelled on Integrated Offender Management (IOM) initiatives that have been developed in a number of areas of England since 2008 to assist the criminal justice agencies in the management of priority groups of offenders (Senior, 2014). It was piloted in Ballymena and Coleraine (PSNI H District), with results indicating that 68% of priority

offenders involved reduced their offending behaviour while engaged in ROP during 2011/2012. Based on these results, the programme was subsequently expanded province-wide (Doherty and Dennison, 2013).

Aim of economic evaluation

The aim of economic evaluation is to inform thinking on whether the investment in the project generates sufficient additional benefits compared to the additional costs to make it worthwhile. This information can be used to provide evidence to support determinations of value for money and inform decisions on resource allocation between policy options. This evaluation was carried out by the Economic Advisory Team within the PSNI.

Methodology

The methodology employed to evaluate the ROP programme and inform the report utilised two economic techniques: cost-effectiveness and cost-benefit analysis. Essentially, cost-benefit analysis is a technique to ascertain whether the programme is worthwhile, i.e. is it 'value for money' for the Northern Ireland taxpayer? A summary of the key methodological stages used to develop the economic model is provided below.

Cost-effectiveness analysis and cost-benefit analysis

Cost-effectiveness analysis (CEA) estimates the costs of achieving defined outcomes, typically measured in terms of a reduction in crime or in reoffending. Cost-benefit analysis (CBA) builds on CEA by attaching monetary values to the outcomes of an intervention, and therefore enables a direct monetary comparison to be made.

Cost-benefit analysis is generally articulated in terms of a benefit/cost ratio, where the value of outcomes (i.e. project benefits) is divided by the project input costs. Alternatively cost-benefit analysis can refer to the net economic benefit, which is simply the sum of the value of benefits less the sum of input costs. From an economic perspective, a programme should seek to maximise the benefit/cost ratio or the net economic benefit (or minimise the net economic cost).

Analysis of previous research reports found that many IOM interventions assessed the outcome of the programme by quantifying the reduction in crime (Senior, 2014). Since crime has costs to society (including costs to victims, potential victims and the criminal justice

system), the value of an intervention can be measured by the avoidance of costs (savings) to society of crimes that would otherwise have taken place. In order to calculate the savings to society resulting from an intervention, it needs to be known how much crime has been prevented as a result of the intervention, and how much this (prevented) crime would have cost.

Not all crimes have the same level or type of costs to society. In a CEA the simple quantification of crimes prevented ignores the difference in the quality of outcomes achieved. By attaching monetary values to different types of crime, CBA can measure this outcome quality. This is done by estimating, as accurately and convincingly as possible, the average cost to society of different types of crime. The total value of benefits as a result of the intervention can then be estimated by multiplying the number of crimes prevented by the average cost of a crime. The CBA will help to determine to what extent interventions have been successful in reducing the cost of crimes to society.

Economic model

Key high-level stages in developing the economic model are summarised in Table 1.

Table 1. Key high-level stages in developing the economic model

<i>Step</i>	<i>Process</i>
1	Define the intervention and its objectives.
2	Identify inputs (i.e. stakeholders).
3	Specify data requirements and sample size.
4	Identify outputs and outcomes.
5	Quantify inputs.
6	Quantify attributable impacts and outcomes.
7	Value inputs (costs).
8	Compare input costs with outputs and outcomes.
9	Value outcomes (benefits).
10	Compare costs with benefits.

Define the intervention and its objectives

The ROP programme was designed as an intervention dedicated to changing offending behaviour, which is illustrated by a resultant reduction in the volume of crime and seriousness of crime committed.

Identify inputs (i.e. stakeholders)

The inputs were recognised as full-time dedicated PSNI Reducing Offending Unit (ROU), Officers and Youth Diversion Officers (YDOs). Input from PBNI, NIPS, DOJ and YJA was valued as the additional time dedicated to the programme above their normal business, which was in the form of time spent at steering and working group meetings. The total number of staff and the organisational composition were based on staffing levels working on the programme in 2014.

Specify data requirements and sample size

Initially it was intended that the dataset consist of every individual currently participating in the ROP. This would involve the collection of data on a district-by-district basis, which would then be aggregated. A NISRA¹ statistician verified and provided support in sourcing the required conviction data. The remit for the data requirement was as follows:

- the measurement of the number of crimes by crime type committed² by offenders during the time they were participating on the ROP programme (12 months)
- the measurement of the number of crimes by crime type committed by offenders during an equal time period before they were introduced onto the ROP programme (12 months)
- the ROP Offender lists were used from 2014
- the initial date each offender was initiated as part of the ROP programme was recorded
- the input costs included any full-time equivalent (FTE) dedicated resources towards managing and supporting the ROP programme
- generic information such as gender, NICHE URN (a police records management system), age and police district.

¹ Northern Ireland Statistics and Research Agency. <https://www.nisra.gov.uk/>

² 'Committed' is defined as those convicted of offence(s).

Identify outputs and outcomes

The main data source used to measure reoffending rates is supplied to the Department of Justice's Analytical Services Group from the Causeway Data Sharing Mechanism (DSM1). The information used is primarily created from an extract of records held on the Criminal Records Viewer (CRV). The CRV is held on Causeway and utilises data that originated from PSNI, along with data from Northern Ireland Courts and Tribunals Service.

Crimes were measured during a defined period when the offender was on the ROP programme and compared to the same period prior to their being added. The period analysed was 12 months before joining the programme and 12 months after joining the programme.

Offence data were provided by a statistician from DOJ who extracted the data from the CRV system, which ensured that all offences attributed to an offender had been 'resulted'. There may have been instances where, due to the time lapse between an offence being committed and resulted through the judicial system, some offences were not included.

The ROP cohort from 2014 (358 individuals) was selected for analysis as this would enable 12 months of crime to be assessed before and after they joined the programme. So what was compared was the rate of offending pre- and post-ROP engagement.

It is important to note that at the time of analysis conviction data were only available from the Causeway data system for crimes convicted up to the end of 2015.

Each crime committed by an offender during the set period was recorded by Offence Type within the economic model.

Quantify inputs

In the 2014 report, the input costs of the programme consisted of the time each organisation (DOJ, NIPS, PBNI, JYA and PSNI) spent facilitating and delivering the ROP programme in 2014. The input varied between organisations; unsurprisingly, the PSNI accounted for the largest proportion of staff. This report utilised the 2014 staff input costs and uplifted these with the latest staff ready reckoner costs (2015/16).

Quantify attributable impacts and outcomes

The recorded incidence of crime for each individual was modelled to reflect the incidence of crime before and after the intervention. Using

crime multipliers issued by the Home Office, it was possible to arrive at an estimate of the actual incidence of crime before and during the intervention, thereby arriving at a more accurate picture of volumes of crime and any corresponding increase/decrease brought about by the intervention. The project team felt that the crime multiplier would be expected to be less during the intervention as the individuals were being monitored more closely, therefore there was less uncertainty about their actual volume of crime committed; however, as this report follows the Home Office guidance, that is considered outside the scope of this evaluation.

Value inputs (costs)

For PSNI costs, a list of officers by rank was provided to calculate the policing input. A PSNI staff ready reckoner was then used to ensure that the costs were revised to reflect costs in 2016 prices. These costs made provision for accommodation and other employer costs. An assumption was made to utilise the annual salary costs of the PSNI officers, as a year was the average period offenders were on the ROP programme. For the other collaborative partners, a similar approach was adopted whereby the organisation was asked to provide a cost valuation of their resource input – thereby ensuring that the totality of delivery costs is included in the analysis.

Due to the varying numbers of offenders in the sample for each district, it was decided to first take the proportionate quantity of PSNI resources dedicated to each district and apply the same proportions to the input costs of the other government bodies involved. An adjustment then had to be made to accurately reflect the actual input costs directed towards each district, therefore a weighted average of the proportion of total offenders and the proportion of total PSNI resources was calculated in order to spread these costs more realistically across the districts. As only 31% of the ROP offending population was being analysed, an assumption was made to use a corresponding 31% of the total input cost.

Compare input costs with outputs and outcomes

This is essentially CEA for which the ROP input costs for the sample were divided by the volumetric reductions in recorded and estimated crime during the intervention.

Value outcomes (benefits)

In order to value outcomes (outputs) and in line with Home Office Guidance, the analysis utilised the Home Office research to estimate the cost of crime. The unitary cost of crime estimates were uplifted using ONS³ GDP deflators to ensure the cost of crime reflects costs in 2016 prices.

Compare costs with benefits

This step is essentially CBA where the sample benefits as a result of the estimated reduced crime were divided by the sample input costs in order to arrive at a measure of value for money. Another measure calculated was the net economic benefit, which is essentially the benefit realised as a result of the reduced crime and the corresponding unit costs of crime minus the ROP input cost for the sample considered.

A sensitivity analysis was conducted to consider both reductions and increases in the ROP input costs at the 5% and 10% margins.

Data limitations

In conducting this research, the model encountered a number of data limitations, which is not unexpected as data-dependent analysis generally encounters multiple limitations and restrictions.

Unfortunately the full ROP dataset could not be extrapolated due to issues with data retention and available resources within the ROP units. Out of the full cohort (358 individuals), over 150 individuals were originally selected for potential analysis. However, following detailed analysis, only 112 individuals were eventually selected as a range of individuals didn't meet the selection criteria within the model (mainly due to spending time in prison (more than one month) during the ROP period⁴). This equates to 31% of all ROP offenders (22% in the 2014 report), and is considered a broad representative sample to avoid selection bias.

While the initial intention was to evaluate every cohort of ROP participants, it was felt that the sample selected should be representative and could be apportioned accordingly to reflect the overall programme from a cost and benefit perspective.

³ Office for National Statistics: <https://www.ons.gov.uk/>

⁴ If the person had spent more than one month in prison they were excluded from the model. This reduced the sample size by approximately 30%. If those people had been included it would not have been a true impact, as although crime levels would likely have fallen this would have only been because they couldn't commit crimes due to being in prison. It would not have been due to the ROP programme.

The Home Office cost of crime estimates provide indicative costings for a number of crime categories; however, the data sample contained a broad range of categories that were not reflected in the costings. To overcome this, the project team further categorised these crimes under the following headings: ‘antisocial behaviour crimes’, ‘crimes of dishonesty’, ‘attempted crimes’, ‘drug-related crimes’, ‘technical breaches’, ‘motoring offences’, ‘personal or commercial categorisation’ and ‘crimes leading to potential violence or criminal damage’.

The values attributed to these crimes were based on using a lower unit cost of crime which was derived from the Home Office costings. This was in keeping with the fact that crimes falling within these categories would be less cost burdensome than more serious crime types. This approach was adopted in the previous economic evaluation of the programme in 2014.⁵

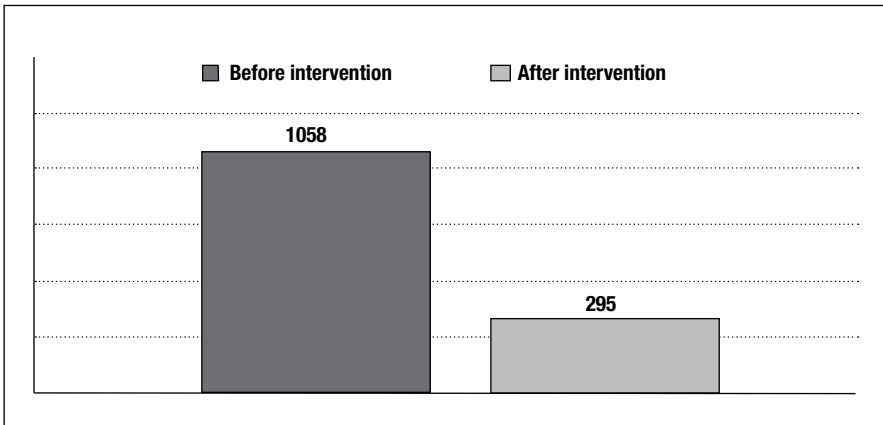
The costs of crime estimates adopt a ‘multiplier’ approach when linking into the analysis. Essentially this approach ties the estimated total number of incidents to changes in the number of recorded offences. For each crime, a multiplier has been calculated equal to the ratio of the actual estimated number of crimes to the number of crimes recorded. The analysis conducted in this evaluation applies that same multiplier before and after ROP participation.

However, it is likely that once on the programme and due to tighter observation and control, the propensity for the individual to participate in other unrecorded crime should be reduced. In theory the multiplier should be less and the ‘before and after’ effect should show a greater gap (enhanced benefit). It was not in the remit of this project to calculate new multipliers post-participation, and this does have a small but manageable bearing on the figures resultant from the analysis.

Results

Overall it is estimated that every £1 spent on ROP returns a benefit of £2.20 in the form of reduced economic and social costs of crime. This corresponds to a net economic benefit of £1.97m over the 12-month sample timeframe. As this sample was 31% of the total offender population in the ROP programme, an assumption can be made that the actual net economic benefit over this period was in the region of £6.34m, or possibly more if increasing returns to scale were present.

⁵<http://www.pbni.org.uk/wp-content/uploads/2015/04/Reducing-Offending-in-Partnership-01.04.15.pdf>

Figure 1. Recorded crime

Cost-effectiveness

In order to determine the cost-effectiveness of the programme, an overall volumetric analysis of crime was undertaken and categorised as shown in Figure 1. The analysis of the data found that 1058 crimes were recorded from individuals before they went on the ROP programme. During the 12 months on the programme the incidence of crime fell to 295, a reduction of 72%, which is a robust indicator that the programme is having a positive impact on crime. This significant reduction suggests that the increased resources (particularly PSNI officer time) being devoted to the programme are having an impact.

In terms of crime committed by offence type, the research found that there was a significant reduction across most crime categories. Robbery and shoplifting saw a reduction of 100% over the period, but it is important to note that the sample size for these crimes started from a small base (six and nine respectively out of 112). Sexual crimes were the only area that saw an increase over the period, with the number increasing from one to two. However, this was a very small increase.

In volume terms, crimes such as violence against a person, general theft, miscellaneous crimes (e.g. drug-related crimes, motoring offences and technical breaches), criminal damage and public order offences had the biggest drop in actual offences.

It is worth noting that the level of crime recorded in Northern Ireland in 2015/16 is the seventh lowest crime figure recorded since 1998/99.

The decrease in crime has mainly been experienced within the offence categories of theft (including burglary) and criminal damage, while offences of violence against the person and sexual offences have shown an upward trend. As a result, the profile of crime has changed between 1998/99 and 2015/16. In 1998/99 violence against the person, sexual offences and robbery accounted for one in five crimes (excluding fraud), while theft (including burglary) and criminal damage accounted for three out of four crimes. In 2015/16 the proportion of crime represented by theft (including burglary) and criminal damage fell from three-quarters to half of all crimes recorded (excluding fraud), while the proportion of violence against the person, sexual offences and robbery offences increased from one in five to nearly two in five crimes.⁶ Initiatives such as ROP will have impacted on overall crime figures.

Economic benefits

Analysing the projected crime savings against the project input costs allows an assessment to be made on the overall net economic benefit (or cost) of the programme. If the net economic benefit is positive, then the benefits outweigh the cost of the programme and justify the decision to operate the programme (i.e. it represents value for money). If the benefits–cost ratio is greater than 1 then there is a return on every £1 invested via the benefits achieved through reduced cost of crime.

Overall the programme had a crime saving of £3.6m, a net economic benefit of £1.97m and a benefit–cost ratio of £2.20 (for 31% of the programme). The above analysis is based on the assumption that the sample size is 31% of the total ROP offender population. If we assume that only 31% of the benefits are represented in the above table, then if we prorate these benefits we can assume that the full crime savings are £11.64m and the net economic benefit of the full programme (100% of all offenders) is approximately £6.34m.

It should be noted that this is an estimate around the potential economic benefits of the programme for all individuals on the programme. It is not a definitive figure but more an indication of the scale of the potential benefits to be realised and a gauge of the programme’s effectiveness for all of society.

⁶ PSNI Annual Crime Figures: <https://www.psni.police.uk/inside-psni/Statistics/police-recorded-crime-statistics/w>

Conclusions

Reducing offending (particularly of priority offenders) through collaborative working is a key priority for a wide range of stakeholders within Northern Ireland. Overall, this evaluation provides confirmation that the ROP programme is continuing to be a success from an economic perspective.

The key objective of this evaluation was to examine the evidence to assess whether the input costs and the subsequent outputs justify the investment and financial commitments to the programme. At a macro level, the research has found strong evidence that the programme is delivering a reduction in crime incidence, it is creating financial savings (in terms of reduced crime), and it is achieving net economic benefits across all policing districts within Northern Ireland. The overall cost of the ROP programme during the assessment period was £5.2 million, and this largely consisted of police officers' salary costs (approximately 98% of the total project costs). In terms of crime savings, the research estimated that financial savings of approximately £3.6m have been accrued from the programme. The model also found robust evidence that the programme is continuing to have a beneficial impact on the rate of crime committed, estimating a reduction in the incidence of crime of approximately 72%.

Translating the costs and benefits into a comparative model, it is estimated that the programme is delivering a net economic benefit of £1.97m or a benefit–cost ratio of 2.2, which highlights that for every £1 spent on the programme an economic benefit of £2.20 is generated in the form of reduced economic costs of crime.

Aggregating the sample size from 31% to 100% increases the financial savings estimated from the programme to £11.64m and the economic benefit of the programme to £6.34m. It is important to note and recognise the potential limitations of this pro-rata approach, as under this scenario the benefits being derived from 31% of the individuals within the programme are considered to be proportionately replicated when the full cohort of individuals on the programme is assessed.

Overall the findings from the analysis indicate that the programme is both cost-effective and beneficial from a financial and value-for-money perspective. It is important to note that there are some limitations with the model and the sample size, and these have been comprehensively outlined earlier in this report.

Further evaluative work could enhance the findings from this research by boosting the sample size, utilising a control group, and assessing and tracking individuals on the programme for a longer period than 12 months.

References

- Doherty, T. and Dennison, M. (2013), 'Reducing offending in partnership', *Irish Probation Journal*, vol. 10, pp. 154–161
- Senior, P. (2014), 'Integrated offender management: Pooling resources and expertise and creating effective working partnerships', *Irish Probation Journal*, vol. 11, pp. 7–28