



Economic Analysis – Practitioner

Written By
Professor Stuart Kirby and Professor Nick Tilley





1.Objective

Economic analysis (EA) within policing is rare and, when conducted, is often poor. This is unsurprising. EA is challenging. Moreover, few user-friendly tools are available, and there is little research, advice, and training to draw on. This document has been produced under the auspices of the NPCC Prevention coordinating committee to help improve the quality and quantity of EA in policing and wider crime reduction approaches. This was tricky as the theory and practice surrounding economic analysis can be complex and difficult to understand without a specialist background in the subject. As such this advice navigates the difficult path of being acceptable to economists whilst also being accessible to police practitioners. It is pitched at an introductory level, with the intention of equipping practitioners with a wider understanding of economic analysis using credible and consistent methods, whilst also highlighting common pitfalls. In essence this advice is not provided for economists or those who have already developed skills in the subject. Those interested in more advanced approaches are advised to explore more sophisticated texts, which are referenced throughout this document¹.

2. What Is Economic Analysis?

Economic analysis is fundamentally a tool used to support decision making at an individual or organisational level. It is an umbrella term which describes a variety of techniques, having been defined as an approach “to provide a rational basis for the allocation of scarce public resources. It provides results that promote economic efficiency and good fiscal management by assessing available options to identify those providing the greatest return on investment. EA also allows policy makers to gauge the economic implications of existing policies and/or programmes”². EA brings extensive benefits as it underpins much wider decision making, such as the setting of strategic objectives, operational goals, or specific interventions. Ultimately the core question it asks is whether the community (at either national, regional or local level) is better off as a result of the intervention.

EA belongs within Evidence-Based Policing (EBP), whereby “police officers and staff create, review and use the best available evidence to inform and challenge policies, practices and decisions”³. Whilst police decision making encompasses many factors, such as ethics, proportionality, and procedural justice⁴, economic analysis can assist practitioners to:

- choose interventions that provide better value for money, taking into consideration evidence of ‘what works’.
- inform decisions on investment or disinvestment.
- support accountability and reassurance in decision making

3. The Context – Economic Analysis And Its Relationship With Policing

EA has been widely used in health, education, politics, business, construction, technology, immigration, religion, and even marriage⁵. During the early 1970s, it was used to inform court and prison policy. Later it was applied in

situational crime prevention⁶, illustrated by studies of alley gating⁷ and close-circuit television⁸. Whilst EA is most prevalent in the UK, US, Canada, and Australia, even here the use of economic analysis in crime prevention and policing is rare^{9 10}. This is illustrated in the graph below, showing the number of published academic studies on public sector cost benefit since the 1970’s. It demonstrates health studies are the clear leader in this field (n=84,958)¹¹, followed by education (n=10,600), whilst police / crime prevention studies (n=216) lag significantly behind.

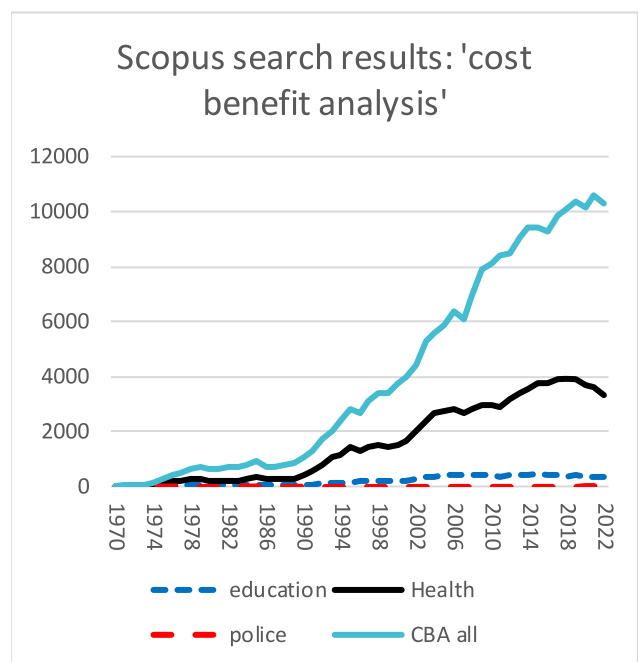


Figure 1

A review of all available systematic reviews of crime prevention (conducted for the College of Policing (CoP) Crime Reduction Toolkit), found only six of the 70 contained any EA. Five of those six contained only rudimentary EA with none scoring more than two on a five-point scale¹². Furthermore, a review of 95 problem solving initiatives submitted to the Tilley Award during 2022 found only 21% conducted any EA and only two reached minimum standards. In addition, a literature review of the academic and grey (i.e., policy documents) literature, exposed a lack of advice and tools to support economic analysis. Of the limited advice available, all concentrated on ‘cost benefit analysis’ and neglected other less complex but useful techniques. Finally, an electronic survey of practitioners active in this field (n=30) highlighted a lack of useable skills, advice, tools, and cost information.



4. Doing Economic Analysis – 7 Steps To Implementation

Economic analysis encompasses many techniques and requires careful consideration. This document divides the process into 7 steps:

1. Understand the importance of system integrity.
2. Decide whether to use EA pre, or post intervention (or both).
3. Choose which form of EA to take.
4. Identify and measure costs incurred in delivering the intervention.
5. Identify and measure outputs relating to the intervention.
6. Identify outcomes relating to the intervention.
7. Assign values to costs and benefits.

In this process three specific types of analysis are explained: cost feasibility, cost effectiveness and cost benefit. All three techniques require steps 1-4. Cost effectiveness analysis can also include steps 5 and 6, and cost benefit analysis requires them all.

Step 1: Understand the importance of system integrity.

Prior to describing specific techniques, it is useful to highlight some wider issues to ensure the EA process adds value. Sadly, EA can easily become window-dressing, used to justify decisions rather than to inform them. Deliberate misrepresentation is easy, and self-deception is commonplace. This is unsurprising as there are vested interests at stake in relation to policies and initiatives. Practitioners need to be cognizant of their own, and stakeholder, bias. *Optimism* bias occurs when the practitioner downplays the costs surrounding the initiative's introduction and enhances its benefits. This is of greatest concern when the EA is conducted by those who implemented the initiative. However, it can also be observed when consultants, who are paid to conduct the evaluation,

succumb to similar pressures to satisfy their client. Accepting that we learn from failures as well as successes it should be emphasised that for EA to be of value, it must be as honest and accurate as possible. Below are some general principles that can help in maintaining system integrity.

a) At the outset *be clear on the scope of your analysis*. For example, is it to be police focused or does it involve partners, is it short term or long term? Understanding the reasons for the analysis and setting out clear objectives provides a good understanding of the task ahead. It helps to explain why certain costs and benefits are included whilst others are excluded¹³.

b) Conduct an '*options appraisal*'. Once the problem is clearly articulated consider the variety of potential solutions open to you (rather than choose a predetermined option). Using economic analysis the most appropriate investment can be selected.

c) Select an EA approach that is *proportionate* to the *context*. Practitioners are encouraged to start with the basics and build from there.

d) *Be transparent when conducting the analysis*. The analysis should explain the type of cost being used and its source, as well as the calculations they are subjected to. The explanation should be clear and detailed enough for another individual to replicate the process and produce comparable findings. This transparency allows the reader/decision-maker to properly interpret the findings. For example, a neighbourhood officer may want to conduct analysis on a small-scale antisocial behaviour intervention. With only limited time and resources the analysis only incorporates basic costs. This will be useful but only if the practitioner is explicit when explaining what costs have been included.

e) *Be aware of scale and time*. Economic analysis is used across a range of initiatives, from local to international projects. The bigger the scale and the longer the period over which it takes place, the more difficult it is to accurately capture all the costs and benefits associated with the project (including unintended consequences/ backfire effects). Moreover, extrapolating findings over longer time periods is hazardous both in terms of cost accuracy (technology, availability, and inflation can all affect outlay¹⁴ over time) and impact



f) *Be realistic when interpreting results.* Projects, initiatives, and practices are introduced in specific ways, at specific places, and at specific times. What was used at one time and location with one dosage (quantity, duration, quality, and intensity of intervention), will not necessarily be replicated with a similar intervention in another context. A simple example is 'hot spot policing'. Whilst there is considerable evidence to support its effectiveness when implemented correctly it can also be delivered in sub-optimal ways. For example, an insensitive use of 'stop and search' in a hot spot area may in some conditions reduce crime but also bring negative costs in terms of police legitimacy¹⁵. It is important not to over exaggerate claims and acknowledge the limitations surrounding the inferences being made. Caution and qualifications should surround generalisations.

Step 2: Decide whether to use EA pre, or post, intervention (or both).

An early decision for the practitioner is to decide whether it is used pre intervention (to select the intervention) or post intervention (to establish its cost and benefit), or both. Economists explain it as follows:

a) *Economic appraisal* (pre intervention). This provides information to help select the most appropriate intervention by attempting to forecast the costs and benefits of any potential intervention, relative to the baseline. The options appraisal (step 1) is a useful technique here. This would allow a practitioner to use information provided by the CoP crime reduction toolkit to indicate that increased hot spot patrols, costing £x would reduce x incidents of violent crime, over a three-month period.

b) *Monitoring and evaluation (M&E) / Benefits Realisation.* This is conducted during and after the intervention. It monitors whether the intervention was implemented in the manner envisaged before assessing the actual benefits (or unintended consequences) associated with it. In the hot spot example provided above it might report that during the three-month period, the reported incidents of violent crime reduced by 10%, but other factors (i.e. abstractions, ongoing music festival) may also have influenced the number of reported incidents.

c) *Using Economics appraisal in conjunction with M&E.* The two approaches can be used together. Indeed, the process of economic appraisal can assist the practitioner formulate an M&E plan, which instructs how benefits realisation can be measured.

Robust evaluation underpins the EA process. Before any thought is given to assessing benefits it must first be established that the intervention is responsible for the impact, rather than it occurring by chance. For an economic appraisal the evaluation has already been conducted and can be found amongst existing best-available evidence, such as the CoP crime reduction toolkit. However, a post intervention analysis (M&E) requires a new evaluation which requires careful consideration and an overview of what it entails is set out on the College of Policing website¹⁶. As an indication of these challenges a review of the Tilley Award submissions highlights some common evaluation errors:

- The improvement would have occurred anyway i.e., the specific offenders or victims had already left the area.
- There was an uncharacteristic spike in terms of the incident and the trend naturally returns to normal (known as regression to the mean).
- The evaluation doesn't show the raw data. This is exacerbated when the evaluation covers a very small number of people or places or is conducted over short time periods. This is because small reductions generate large percentage swings.
- Comparison groups or periods are poorly chosen (e.g., an antisocial behaviour problem occurring around Halloween and Bonfire night is compared to the level of antisocial behaviour in January, February and March). Similarly, different seasons are associated with increase/decrease in certain incidents. For example, incidents of violence generally occur more in summer months making winter comparisons questionable.
- Changes in reporting and recording procedures can compromise 'before and after' comparisons.

Step 3: Choose which form of economic analysis to undertake.



The next step is to choose a specific economic analysis technique. Three main approaches are described below although a fuller explanation of these, and other forms of EA, can be found from other sources^{17,18}. These techniques can be perceived as building blocks, each becoming more complex and providing increased levels of economic information. They also require increasing levels of skill and resources to conduct. The correct choice should be proportionate to the size of the initiative as (generally) it makes little sense to use the most complex evaluation on a localised low-level problem. EA can also benefit from a phased approach whereby initial analysis is later developed as the initiative increases in potential¹⁹. The three approaches are as follows:

a) Cost feasibility analysis

Cost feasibility analysis is used to assist the practitioner understand whether an initiative is affordable and whether it appears a good investment. The core element in this process is to establish the monetary cost which is required to implement the initiative (often referred to as a financial appraisal²⁰). To do this it could calculate the potential actual costs, or conversely draw upon the costs from similar past initiatives. Of course, care must be taken as costs can change – think HS2! Once the costs are known the practitioner can determine what budget will be required and the feasibility of acquiring it. However, being able to afford an initiative does not guarantee its success. As such this step is much more helpful when the cost of the initiative can be compared with the costs associated with a range of alternative initiatives. In this way the initiative which offers the best chance of success (in that context), for the least cost, is most likely to be selected (see options appraisal at step 1).

Whilst cost feasibility studies do not include outcomes, they can provide a monetary benchmark against which future actual costs and outcomes may be compared. The Early Intervention Foundation (EIF)²¹ and Youth Endowment Fund (YEF) focus entirely on cost feasibility within their 'what works' databases. It is the most straightforward and reliable of the EA approaches described here. However, as with all the methods, identifying all the costs involved in delivering an initiative can be challenging, especially where all bearers of costs need to be included. In partnership-based work, it is important to remember that the police are not the only cost bearers, and the initiative may pass some costs on to partners.

Cost feasibility in burglary

A neighbourhood is witnessing a rise in residential burglary. The SARA process reveals the problem is concentrated on terraced houses, situated across four specific roads. The offences are committed during the day when the occupants are absent. Access is obtained via rear alleyways and bodily force is used to break down poor-quality doors. The Crime Reduction toolkit²² suggests several responses, such as: high visibility patrols, neighbourhood watch, replacement high security doors, or alleygating. The purpose of cost feasibility analysis here is to establish the monetary cost for each intervention, which assists the decision maker in establishing whether the resources can / should be acquired.

b) Cost effectiveness analysis

This method of analysis goes one step further. It starts by working out implementation costs and then links it to a unit of either output or outcome, to gauge how effective the spend has proven. Output refers to what is delivered (say alley gates installed, treatment sessions delivered, or targeted patrols undertaken). Outcome refers to the intended effect of the intervention (i.e. burglaries prevented, reductions in rates of reoffending, or drops in the number of calls to the police relating to antisocial behaviour). Whilst outputs are generally easier to measure than outcomes, the latter is useful as it describes what impact has been achieved. In essence cost effectiveness establishes the costs of the inputs and uses another measure to establish the effectiveness of the spend, but without the monetisation needed in cost-benefit analysis. This approach is particularly helpful for comparing different interventions (in terms of cost vs results) when dealing with a particular type of incident (e.g., street violence).

Cost effectiveness analysis in burglary

A police force establishes that daytime burglaries of terraced houses are occurring in numerous locations across its area. It asks local commanders to tackle the problem. Different commanders choose different approaches ranging from short term high visibility patrols, distributing prevention leaflets to residents, distributing forensic marking equipment, and installing alley gates. A later evaluation shows all to have led to a reduction in burglary (albeit to different levels). A cost effectiveness analysis is conducted. This establishes the level of investment required for each tactic and shows the impact it had on the number of burglaries. This demonstrates which intervention provides the largest and most sustainable reduction in burglary.



The findings are useful information when facing future challenges – for example, it can suggest whether, other things being equal, a nudge approach (e.g., the design and delivery of crime prevention leaflets) is likely to provide better value for money than the purchase and distribution of forensic marking kits to reduce a burglary problem.

c) Cost benefit analysis

Cost Benefit Analysis (CBA) is the most advanced approach of the three. Analysis of its use by police practitioners indicates the term is often used without full knowledge of what it involves. A defining factor is that it monetizes all costs and benefits to establish *whether* the total costs of implementing an intervention are outweighed by the total societal benefits in monetary terms²³. Ideally, a crime prevention intervention would only create benefit and no harms, however this is difficult to establish due to the diversity of people affected. As such, it is generally felt that an intervention is successful if it achieves net social benefits. Overall, this means more monetised benefits than monetised disbenefits are produced.

CBA therefore requires 'full' cost benefit analysis, which is difficult in practice. This is partly because it is seldom possible to identify and monetise all the costs involved in delivering an intervention. At the outset it is important to know on whom the costs of delivering an intervention fall and for whom it produces positive and negative outcomes. Moreover, identifying, measuring, and accurately monetising all short-term and long-term outcomes (positive and negative) materialising after the intervention is even more difficult. In practice all cost-benefit analysis is partial in its coverage. Consider, for example, a project to reduce antisocial behaviour in a hot spot, using a multi-agency project team (e.g., police, social services, housing). As well as the obvious extra costs such as equipment or overtime payments, other mainstream costs (e.g., transport, buildings, staff / volunteer hours), should also be included. This involves the inclusion of opportunity costs, which calculates the cost of those resources available at the time. These costs are included because they can't be used on another intervention at the same time. Establishing the project's net social benefits is also difficult. Short and longer term unintended negative side-effects, as well as intended outcomes, need to be measured and monetised. Identifying and putting a monetary cost on 'intangibles', such as fear of crime, anger, public confidence, and legitimacy, is particularly difficult. For example, it is more difficult to ascribe costs in areas such as domestic abuse where outcomes may be less clear or longer term. To establish

these costs, economists use different assumptions, which means different studies apportion different costs to the same type of crime.

This type of approach can also provide a benefit cost ratio; for example, a study on alley gates found a ratio 2.19:1. This means that an overall social benefit of £2.19 was generated for every £1 spent on alley gates. Of course, for less successful initiatives, the calculation could reveal a negative ratio, which means the costs are higher than the monetised benefits. It should be remembered that where net benefits are produced, they are not necessarily cashable. The approach focuses on 'opportunity costs' – the alternative uses to which the resources could have been put. In this way the best allocation of resources is that for which no other distribution could yield greater net benefits. Table 1 shows what needs to be fed into cost-benefit analysis, with a cost benefit ratio comparing £b+£d+£f with £a+£c+£e.

Table 1: Elements in cost-benefit analysis

Costs		Benefits	
Implementation		Intended/direct	
Costs of delivering intervention	£a	Saved costs of targeted prevented crimes	£b
Unintended negative side-effects		Unintended/indirect positive side-effects	
Crime costs of displaced crimes/criminality	£c	Saved costs from diffusion of crime prevention effects	£d
Other negative side-effects	£e	Other beneficial side-effects	£f
TOTAL	£a+£c+£e		£b+£d+£f

Cost benefit analysis in burglary.

Consider the introduction of alley gates. Initially the evaluator identifies the costs associated with implementation, whoever incurs them (see Step 4). Then, following implementation, the accrued benefits are monetised, to whomever they fall. In burglary this could encompass reductions in losses (e.g., items stolen and damaged), as well as other savings (e.g., staff hours of the agencies involved, and reduced health costs associated with associated trauma, fewer lost working hours). This allows a benefit /cost ratio to be calculated for alley gates. Similar estimates can be made across a range of other burglary prevention tactics in terms of value for money or across different incident types. Of course, findings need always to be interpreted in terms of specific conditions in specific areas at specific times.

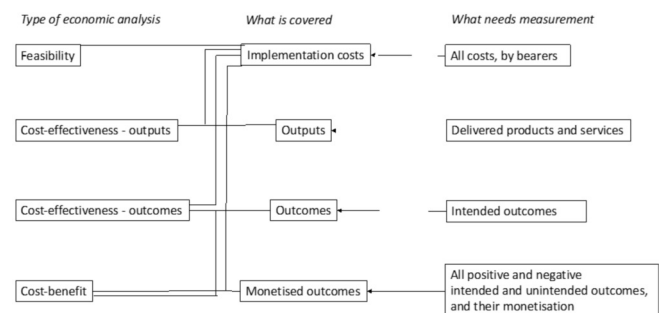


Cost benefit analysis at a strategic level – people trafficking. Walby et al. (2022)²⁴, were commissioned to establish the cost of each trafficking victim due to their mental health issues and emotional harm. The study had to assess the duration and intensity of this harm to estimate: the range of services used (government, police, health, CJS, and social protection), the impact of mental health issues and emotional harm on lost economic output, and lost quality of life. The conclusion was each trafficking victim cost the European Union €317,756 thereby setting out the case for more investment in this area.

In summary, this section shows all three approaches have strengths and weaknesses. Cost feasibility estimates the implementation costs of a particular intervention. It provides awareness of the expense, and the specific implementation costs can be compared against other tactical options. Cost effectiveness goes further to measure (in some way) the benefits accrued by the intervention, providing an indication as to whether the resources provide value for money. Cost benefit analysis provides the most comprehensive understanding, comparing the full costs of implementation against its monetised benefits or negative side effects. It is the only EA approach that works across incident types. For example, it can show (or predict) how a specific monetary investment can impact on issues as diverse as burglary or collision reduction. However, it is the most complex to perform and entails difficult and contestable measurements and calculations. Given all the difficulties, CBA can be viewed as an imperfect science, especially in relation to intangible costs. However, it remains a useful approach to support decision making²⁵. For the practitioner, deciding on which approach to use may be dependent on several factors, such as:

- If the intervention already has evidence supporting its use, and the benefit / cost ratio is known, the practitioner may need only to assess the cost of implementing the initiative for use in their specific context.
- If the scale of the initiative is too small, cost-benefit analysis will not be practicable, so a focus on cost-effectiveness may be more appropriate.
- If an original intervention is introduced, and it has the potential to be transferred to tackle similar problems at a national level, then cost benefit analysis may be worthwhile.

Figure 2 (below): What's covered and what needs to be measured in different forms of economic analysis.



Step 4: Identify and measure costs incurred in delivering the intervention.

Each of the three forms of economic analysis involves calculating implementation costs. It is important to understand costs for both the baseline activity as well as the intervention to establish whether the intervention provides a cost saving on the activity already being conducted.

At first sight the only costs that seem obvious may be the extra ones needed to launch an initiative, say the money needed to buy and install the gates in an alley gating project. But there are many other costs that should be included. These include, for example, the police staff time to negotiate the agreement for the gates to be installed, the transport costs underpinning the consultation required to gain support for the scheme, the costs of dealing with any legal obstacles that might be encountered, the local authority costs of installation, the costs of designing the gates themselves, the costs of arranging provision for keys to be supplied and transferred to new residents, the costs of maintenance, the costs of the office space for those involved in developing and the operating the scheme etc²⁶. Moreover, the costs of setting up the scheme need to be distinguished from those of running the scheme. cost, is most likely to be selected.



Annualising costs over the expected lifetime of the scheme, should take account of ‘discounting’ which recognises present costs are valued higher than future costs. Further it should be recognised that costs may be borne by different stakeholders, such as the police, the local authority, probation services, health services, voluntary groups, the private sector, and citizens. Full costing will involve identifying all bearers of costs and monetizing their contributions.

A useful exercise in estimating the costs involved in delivering an intervention can be to create and complete a table (see Table 2), listing bearers of costs and adding known or best estimates of the costs. For some initiatives, where costs are uncertain, ranges might be used to estimate best and worst-case scenarios.

Table 2: Implementation costs

Type of cost	Bearer of costs					TOTAL
	Police	Local authority	Health Service	Private sector	Voluntary sector	
Staff time						
Transport						
Volunteers						
Space						
Materials						
Publicity						
Professional services						
TOTAL						

For projects that are expected to extend over time, a refinement to table 2 will be to distinguish the periods during which costs are incurred, for example by month, quarter or year. This will allow set-up costs to be distinguished from running costs. It can also be useful to measure average costs. These comprise the mean cost of a particular output. Where fixed and capital and revenue costs and included, the unit price of an output will reduce with increased activity as the capital or set-up costs are spread amongst more outputs.

As discussed throughout this document it is important to be clear about what is included in the costs, whatever the level of analysis.

Step 5: Identify and measure outputs

If the practitioner decides to use cost effectiveness analysis and focus on outputs, these will need to be tracked and measured. Outputs can take several forms. Take alley gating, for example. The output could be framed as gates fitted or the number of dwellings to which the public no longer have rear access. This would allow the results to be summarised as cost per gate or cost per dwelling. For outputs to be measured, accurate records must be kept and quantified. This might be straightforward in alley gating, but could be more difficult in other interventions, where tracking and measurement might be more complex. Take targeted patrols. The output could be framed as number of patrols, time spent on targeted patrols, areas covered by targeted patrols, or activities undertaken during targeted patrols. Initiatives which attempt to disrupt organised crime groups would be even more complex. Whatever the initiative, cost effectiveness of outputs depends on strong record-keeping focused on what is delivered.

Step 6: Identify outcomes of the intervention

Quantifying outcomes, in an unbiased and accurate manner is critical in maximising the effective and efficient use of police resources. Evaluation has been discussed at step 2 (above) and some of the challenges have been outlined. In essence the practitioner is trying to map a process which starts with the objective (what is intended) and connects to the inputs (resources used), establishing the achieved outputs. Finally, it connects these to the outcome (and determines whether this matches the objective).

In cost-effectiveness analysis the outcome evaluation is illustrated by a metric e.g., a reduction in the number of burglaries over a given period. In relatively small and straightforward prevention initiatives this information will often be provided through conducting a project evaluation. Conducting outcome evaluation for CBA goes further as it attempts to identify all outcomes emanating from the intervention (and placing a cost on them – see step 7). As well as intended positive outcomes, CBA requires the inclusion of unintended and negative outcomes. It also looks to distinguish immediate effects from longer-term impact.



As previously discussed, this may include intangible outcomes (i.e. the reduction of anxiety or the increase of wellbeing), which require complex and often contested methods. In small projects, with limited resources, the prospects of producing valid, statistically meaningful findings on positive and negative effect sizes is unlikely. Cost-benefit analysis can only be undertaken with robust outcome measures capable of estimating intended and unintended, positive and negative effects. This will rarely, if ever, be possible without the involvement of those with expert technical skills.

Step 7: Assigning values to costs and benefits

Central to any EA process is the process of assigning costs. Whilst this has been discussed some further points are relevant. At a basic level the evaluator needs to decide whether they will use a *bottom-up* or *top-down approach*. Bottom-up approaches itemise and estimate each separate cost at ground level for that specific initiative (manpower, equipment, indirect costs). Practitioners will find their individual police force will have some information available relating to police and staff costs, although other information – especially in relation to external agencies – is limited. Whilst this bottom-up approach is likely to be more accurate it can be time consuming. Conversely top-down approaches ask the evaluator to identify the cost of major components of the intervention and then use set costs to apportion the spend for each element.

There are numerous techniques that assist evaluators. For example, if costs are difficult to establish during the early stages it may be helpful to consider the use of a *9-box grid*. This considers costs as high/medium/ low and compares these against high/medium/ low impact. Interventions that indicate high cost together with a low impact may be dismissed early on, whilst high impact and low cost may direct a more detailed analysis. Staying on this theme *threshold analysis* is another technique which is useful to use when benefits/ outcomes become difficult to measure. For example, if 'target hardening' a social housing estate was to cost £250,000, how many burglaries would have to be averted to cover these costs. Again, this provides a reasonable indication as to whether the intervention is worth pursuing.

Appendix A provides technical information to explain how economists use different methods to establish cost. Appendix B provides information regarding potential cost sources.

5. Conclusion and Next Steps

This practice advice was commissioned by the NPCC co-ordinating committee, with the support of the NPCC Chief Scientific Advisor. It aims to enhance practitioner knowledge in the use of economic analysis. This is an initial step, and it is expected further investment in training and evaluation tools will be provided in the future.

It is appreciated that this information can appear daunting, especially for practitioners who have little or no experience in this field. However, practitioners are encouraged to engage in EA at whatever level they feel appropriate, developing their skills and experience over time. In this aim it is worth reiterating some of the key messages highlighted earlier, specifically:

- Economic analysis is worth doing! There is considerable evidence to show that effective and efficient policing is more likely if economic analysis supports decision making.
- Police practitioners can engage in EA prior to implementing an initiative. By examining the CoP crime reduction toolkit it is possible to forecast and select those interventions likely to be the most successful.
- Economic analysis is an umbrella term which encompasses many approaches and techniques. This document describes three of the most common approaches (feasibility, cost effectiveness and cost benefit analysis). Each provide different benefits, and range in complexity, but all improve decision making.
- As a general principle practitioners should select an approach that is proportionate to the context. Practitioners are encouraged to start with the basics and build from there.
- EA often suffers from bias which undermines its value. Guarding against this is a constant challenge. The best method of avoiding this is to be transparent in terms of how the costs are identified and calculated.



Appendices

Appendix A: Cost measurement labels and approaches

Although poorly developed in terms of policing and prevention, economic analysis has been used over many years. This has resulted in economists developing many different terms and techniques to facilitate their work. The following terms are commonly used:

- o *Financial appraisal*: The emphasis is on funding and affordability relating to cash flow and stock. It focuses on public sector budgets.
- o *Economic appraisal*: Economic appraisals focus on the social value and consider social, economic, environmental costs and all effects on public welfare.
- o *Fixed costs*. These can be capital costs (salaries, rent) and remain constant no matter the level of activity,
- o *Variable costs*. These costs change as the level of activity/ volume changes, i.e., raw materials, service charges, police hours.
- o *Marginal cost*. These are the costs associated with producing an additional unit of output or outcome. They are extra to existing operating costs. Both fixed costs and variable costs are relevant when estimating the extra resource required to deliver outputs or outcomes.
- o *Direct costs*. Such as buildings, equipment.
- o *Indirect costs*. These include the time spent on designing an intervention, administrative costs, or shares of buildings and equipment used also for other purposes.
- o *Intangible costs*. These do not have a direct monetary cost associated with them, e.g., the fear of crime.

Calculating Intangible costs

Calculating intangible costs in cost benefit analysis is one of the most contentious aspects of EA and is worthy of further comment. Whilst economists use a variety of techniques to

establish intangibles²⁷ a common approach uses the standardised metric known as QALY - an abbreviation for Quality Adjusted Life Years. This assesses the quality and quantity of a person's life and allows a monetary value to be attached to the required health intervention. Dolan et al. (2005)²⁸ explained physical injuries were often linked to intangible psychological injuries and by estimating duration and intensity their significance could be understood and costed. For example, a person recovering from a broken rib could be said to suffer a 15% reduction in their quality of life²⁹. In another study a scale between 0 and 1, was used to rank crimes prior to setting a monetary value³⁰. Rape was calculated at 0.561, serious wounding 0.191 and lesser wounding 0.031³¹.

Peters and Anderson (2013) used a QALY approach to examine road casualty figures in London. They argued that introducing 20mph zones in high casualty areas, resulted in a £1 spend being associated with QALY benefits of £2.66 (benefits-cost ratio of 2.66:1), but only 66p QALY benefits for every £1 in low casualty areas (benefits-cost ratio 0.66:1). This information allowed the best yield to be obtained from the investment.

The QALY method has been used as a foundation for other approaches. For example, Public Health England designed HEER (Health Economic Evidence Resource), which combines QALY with an NHS NICE cost threshold of £20,000 - £30,000, to cover 13 areas of health. There have also been modifications to this approach. For example, DALYs (used by the Global Burden of Disease network), articulates losses as Disability Adjusted Life Years. DALYs combine the years of living with a health limitation with the years of life the individual is expected to lose. Identifying intangible costs is a continuing area of research and there are many other approaches not discussed here (i.e., Cost of illness approach³²). What this means is that intangible costs can vary significantly across crime type and demographic³³. For example, rape has generated a QALY monetary figure between £16,840³⁴ and £45,256³⁵. This is because individuals report being 'willing to pay more' to avoid specific experiences which extend further than health considerations³⁶. In summing up the debate on monetizing intangibles, some argue they should be omitted as it has a massive impact on the findings and the methodology is based on dubious assumptions³⁷.



However, most commentators maintain that even with these problems it should still be conducted because society values quality of life and invests considerable resources on the subject; and only by including them can a full understanding of the intervention be achieved³⁸. Overall, the consensus is that intangible costs should be included but their subjectivity should be recognized.

Appendix B: Set costs provided by the Home Office

The availability of specific and accurate police related costs is currently limited and inconsistent. The Home Office Analysis and Insight team are active in assisting government and police related bodies understand the costs surrounding police activity and it is expected this information will increase in both quantity and quality over time.

Currently one of the most accessible sources is a Home Office (2018) publication called *The Economic and Social Cost of Crime 2nd edition*. This was based on 2015 costs³⁹ and assigns monetary values to precautionary costs, victim costs, and criminal justice costs. These are prepared for 13 separate victim-based offences, across three separate categories:

- Cost in anticipation of crime, such as cost of preventative security (e.g. alarms).
- Cost as a consequence of crime, such as the value of property stolen or damaged.
- Cost in response to the crime, including policing and wider criminal justice costs.

As the document outlines, “The costs of crime presented in this report are estimated and that is how they should be treated. They demonstrate the relative magnitudes of the economic and social costs of different crimes and should not be treated as precise estimates of the cost of each crime. The cost estimates in this report use the best available evidence and data at the time but they are inevitably sensitive to changes in crime trends, organisational developments, and changes in technology”. An update to the economic and social cost of fraud against individuals has since been published in the Home Office’s Fraud Strategy

(May 2023). Together, these documents are currently the most comprehensive source from the Home Office for the estimated economic and social costs of these specified crimes against individuals and businesses. Home Office officials are reviewing more up to date estimates of the economic and social costs of crime, which would supersede the existing estimates once available.

Activity Based Cost. During 2022/23, the Home Office conducted an activity-based costing exercise across 38 police forces in England & Wales. The police forces involved have been provided with their individual costs and there is the potential to use these costs across the three economic analysis approaches described earlier. Again, these costs will be provided to police forces when available.



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