

Cost Effectiveness Analysis of the use of DNA sample collection at crime scenes

Suppose a police force has collected evidence from an experiment to test the effectiveness of different methods of treating the scenes of domestic burglaries and wants to identify which of the alternatives is cost effective.

The findings are as follows:

Table 1 Results of cost effectiveness experiment

	Average cost per 100 crime scenes	Arrests per 100 scenes	Cost per arrest
No routine forensic investigation	10	2	5
Standard forensics (fingerprints)	100	25	4
DNA collection as routine	150	40	3.75

The most cost effective alternative is the one which delivers an arrest at the lowest possible cost. In the example set out above it can be seen from the final column that it is the DNA approach which produces arrests at the lowest possible average cost, even though this is the most expensive method to use.

Had the numbers been different, then the cost minimising option could easily change. Suppose the numbers had turned out as in Table 2.

Table 2 Results from a different cost effectiveness experiment

	Average cost per 100 crime scenes	Arrests per 100 scenes	Cost per arrest
No routine forensic investigation	10	5	2
Standard forensics (fingerprints)	100	40	2.5
DNA collection as routine	120	40	3

The conclusion in this second case would be that neither forensic technique is really worthwhile, since the cost per arrest is higher using either method than it is if no fingerprint or DNA evidence is collected. Note in passing that fingerprinting now overtakes the DNA approach as cheaper per arrest.
