A CASE STUDY

The Federal government funded a demonstration project in the area of youth unemployment. The U.S. Department of Labor monitored the project which operated in eight cities. Each program in each city annually trained about 120 unemployed, economically disadvantaged youth who had been drug/alcohol abusers. Training focused on the building trades and was conducted by union professionals. Activities included:

1. rehabilitation of vacant homes.
2. emergency home repairs for poor, elderly, or handicapped homeowners. Often these repairs rectified building code violations.
3. refurbishment of public facilities.

Step 1: List all possible costs and benefits

<table>
<thead>
<tr>
<th>Costs</th>
<th>Benefits</th>
</tr>
</thead>
</table>


COSTS FOR ONE YEAR

Local Operating Costs
(Salaries, fringe, supplies, etc.) $4,926,424
Annualized Equipment Cost $ 231,159.

Federal Administration $ 453,328.

Opportunity Costs $ 555,913.

(Convert to cost per participant for ease: 977 participants = $6,312)

Benefits Per Participant

Value of Work Produced ($3,720,416) $ 3,808
Earnings Above Controls $ 19,068.

Calculate Net Benefits

Total Benefits minus Total Costs
$22,876 $6,312 = $16,564
$16,564 * 977 participants = $16,183,208

Calculate Benefit-Cost Ratio (B/C)

$22,876
$ 6,312 = 3.6

SENSITIVITY TABLE

<table>
<thead>
<tr>
<th>Costs</th>
<th>Benefits</th>
<th>$11,438</th>
<th>$22,876</th>
<th>$34,314</th>
</tr>
</thead>
<tbody>
<tr>
<td>$3151</td>
<td>3.6</td>
<td>7.3</td>
<td>10.9</td>
<td></td>
</tr>
<tr>
<td>$6312</td>
<td>1.8</td>
<td>3.6</td>
<td>5.4</td>
<td></td>
</tr>
<tr>
<td>$9463</td>
<td>1.2</td>
<td>2.4</td>
<td>3.6</td>
<td></td>
</tr>
</tbody>
</table>
SUPPORTING CALCULATIONS

"Annualized Costs" (A.C.)

Initial purchase cost * annualization factor (a) which provides for social discount rate

\[ a = \frac{r(1 + r)^n}{(1+r)^n - 1} \]

\[ r = \text{discount rate (5%)} \]

\[ n = \text{life span (5 years)} \]

\[ A.C. = 1,000,000 \times \frac{.05(1+.05)^5}{(1+.05)^5 - 1} \]

\[ A.C. = 1,000,000 \times .23159 = 231,159 \]

Including "Opportunity Costs": wages earned if not in program; derived from a control group who earned $555,913 during the year.

Earnings: on the average, a participant earned $4,200 more than a control during first year after program.

<table>
<thead>
<tr>
<th>Year</th>
<th>Earnings</th>
<th>Decay Rate (17%)</th>
<th>Discount Rate (5%)</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>$4,200</td>
<td>*</td>
<td>*</td>
<td>$4,200</td>
</tr>
<tr>
<td>2</td>
<td>$3,312</td>
<td>.83</td>
<td>*</td>
<td>$3,312</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td>*</td>
<td>.83</td>
<td>$2,612</td>
</tr>
</tbody>
</table>

et cetera add 40 years of work life

$19,068