

Key outcome data analyses

Outcome information describes changes and levels of performance for individuals, families, groups, organizations, and communities. These changes may relate to changes in knowledge, attitudes, skills, motivations, plans, decision making, behaviors, practices, policies, and social, economic, civic, and environmental conditions. Following are some key ways to analyze your outcome information. See the accompanying example data tables.

1. Participant outcomes

A common first step is to summarize all outcomes for all participants. This is usually reported in a frequency table that includes numbers and percentages. If the number of respondents is small, hand tabulation is natural; otherwise, standard spreadsheet software, such as Excel, can save time.

2. Comparison of participant outcomes

Comparison is the name of the game. Comparisons help you interpret data and make reasonable judgments. Various types of comparisons are common:

Time period. For example, you can compare your current overall outcomes with a previous time period, compare one year with another year, or compare one time period with the same period in a previous year. Once a program has outcome data for more than one year, you can examine trends and patterns over time. Any major changes in data collection, however, may make such comparisons inappropriate.

Targets. Programs may have overall outcome targets they are trying to reach (e.g., 70% of participants will increase their levels of savings within two months of program completion; 90% of children will be immunized on schedule). Comparison to targets indicates the extent to which the program is meeting, exceeding, or missing expectations.

Baseline. If baseline data exist, compare outcomes to the pre-program baseline data.

Similar programs. Comparisons to similar programs collecting similar outcome data can be useful. Care is needed, however, to ensure that the programs are similar, outcomes are defined in the same way, data collection procedures are similar, the time frame is the same, and the available data are of reasonable quality.

Outside standards. Where there is available national or state data, comparisons can be made to these data. The same care is needed as noted above.

3. Comparison of Outcomes for different participants (demographic groups)

One of the most useful analyses is to look at differences for different segments within your participant group. There may be important differences by age, gender, race/ethnicity, geographic location, or other participant characteristics. For example,

- “Do people who speak different languages report different outcomes?”

- “Do girls do better than boys?”
- “How does position or length of service affect outcomes?”

A list of participant characteristics is found in the handout *Relevant participant characteristics affecting outcomes*, but use characteristics that are relevant for your program and those that are likely to have an effect on outcomes. By breaking out the data by relevant characteristic, you can see which participants benefit more from the program and where modifications may be needed. To be able to do this, the program must make sure the relevant participant information is collected (and available) so that it can be linked to the outcome data for each participant. Sometimes this information is available as part of a registration or intake process. Other times, it needs to be collected and the necessary questions must be included on the data collection instrument.

The analysis is called cross tabulation (cross tab) and involves using two pieces of information: the participant characteristic and the outcome data. Cross tab is best done using computer software. Instructions for doing cross tab using Excel can be found on pages 23–26 of *Using Excel for Analyzing Survey Questionnaires* (G3658-14) [Leahy (2004)] or various resources on the web that can be found through a Google search.

4. Comparison of Outcomes by program characteristic

Another useful analysis is to examine the effect of a program characteristic on participant outcomes. In this analysis, segments of participants are grouped by program characteristic, such as by type of program (e.g., workshops, classes, or simulations), provider (different instructors), location, or number of contact hours. A list of program characteristics is found in the handout *Relevant program characteristics affecting outcomes*. This analysis is particularly useful if the program involves different characteristics. It can help you determine which program factor relates to better outcomes. Use cross tabulation as described above.

Adapted from: Hatry, Cowan and Hendricks (2004). Analyzing outcome information: Getting the most from data. The Urban Institute, Washington, D.C.

1. Tables: Overall Participant Outcomes

(all data are fictitious)

Sample frequency tables

Example 1.

Number and percent of 11th graders reporting increased financial abilities
(n=225 11th graders)

<i>Financial practice</i>	<i>Increased my skills</i>	<i>I already could do this</i>
Use a checking account	57 (25%)	168 (75%)
Track spending	145 (64%)	80 (35%)
Create a spending plan	160 (71%)	65 (29%)
Plan for unexpected expenses	173 (77%)	52 (23%)

Example 2.

Percent of youth reporting changes in independence outcomes resulting from program participation (n=682 youth)

<i>To what extent has participation helped you...</i>	<i>n</i>	<i>Not at all</i>	<i>Some-what</i>	<i>Quite a bit</i>	<i>A great deal</i>	<i>Don't know</i>
Self-determination						
To develop your motivation to do your best	676	2%	19%	35%	41%	3%
To be able to solve problems on your own	678	4%	23%	37%	32%	3%
Self-esteem						
To feel good about yourself	678	2%	21%	35%	39%	2%
To like the way others see you	675	6%	25%	36%	29%	4%
Confidence						
To be comfortable performing in front of others	682	10%	24%	29%	36%	1%
To feel strong enough to handle difficult situations	678	5%	24%	37%	31%	3%

Example 3.

Percent of youth reporting 'quite a bit to a great deal'

<i>Independence outcomes</i>	<i>Quite a bit to a great deal</i>
Self-determination	72%
Self-esteem	69%
Confidence	66%

2. Tables: Comparison of Overall Outcomes (all data are fictitious)

Example 1.

Comparison of outcomes for the river cleanup program, 2004-2006

	<i>Jan-Dec 2004</i>	<i>Jan-Dec 2005</i>	<i>Jan-Dec 2006</i>
# of volunteers	25	80	200
# miles of riverbank cleaned up	50	100	500
# bags of garbage collected	375	1,000	3,000
# pounds of trash collected	15,000	52,000	130,000

Example 2.

Comparison of actual to target outcomes for youth tutoring program (150 youth)

<i>Outcome indicators</i>	<i>Target</i>	<i>Actual</i>
Percent of youth who complete homework successfully	70%	75%
Percent of youth who demonstrate improved attitude toward reading	70%	70%
Percent of youth who demonstrate improved fluency in reading	70%	68%
Percent of parents who report that they engage in literacy activities with children at home	70%	60%
% of volunteers demonstrate "very good to excellent" tutoring skills	70%	90%

Example 3.

Number of producers making recommended dairy nutrient improvements (25 farmers)

<i>Recommended practice</i>	<i>Pre-program</i>	<i>Post program</i>
Balance ration	10	20
Incorporate manure into soil	5	10
Apply blended fertilizer	15	25

3. Tables: Comparison of Outcomes for different participants (demographic groups)

Example 1.
Campers' rating of 2007 summer camp

<i>Type of camper</i>	<i>n</i>	<i>Super</i>	<i>Good</i>	<i>Fair</i>	<i>Poor</i>	<i>Ave. rating</i>
First time campers	200	130	65	5	0	3.6
Repeat campers	101	52	34	13	2	3.3
Camp leaders	30	28	2	0	0	3.9

Example 2.
Percent participants who reported improvements after completing the leadership development program

<i>Participants</i>	<i>n</i>	<i>Improved skills</i>	<i>Applied skills in community</i>	<i>Increased civic engagement</i>
<i>Gender</i>				
Male	65	70%	55%	60%
Female	35	75%	65%	70%
<i>Age group</i>				
20-29	30	83%	66%	73%
30-39	35	77%	71%	70%
40-49	30	50%	33%	54%
50-59	5	60%	100%	100%
<i>Race/ethnicity</i>				
African-American	30	70%	66%	75%
Asian	5	60%	60%	68%
Hispanic	25	68%	60%	64%
Caucasian	40	70%	60%	76%

4. Tables: Comparison of Outcomes by program characteristic

Example 1.

Participant confidence levels in being able to conduct a useful evaluation by type of program attended

<i>Type of program</i>	<i>n</i>	<i>Very confident</i>	<i>Somewhat satisfied</i>	<i>Neither satisfied not dissatisfied</i>	<i>Somewhat dissatisfied</i>	<i>Very dissatisfied</i>
Face-to-face workshop	35	29 (83%)	5 (14%)	1 (3%)		
Online learning	40	24 (60%)	10 (25%)	4 (10%)	2 (5%)	
Community of practice	30	28 (93%)	2 (7%)			

Example 2:

Percent of gardeners reporting benefits of community gardening program by location of garden

<i>Outcomes</i>	<i>Neighborhood A (35 gardeners)</i>	<i>Neighborhood B (30 gardeners)</i>	<i>Neighborhood C (31 gardeners)</i>
Increased knowledge of gardening	92%	58%	89%
Increased access to fresh, nutritious food	100%	60%	86%
Increased exercise	68%	40%	62%
Increased sense of community	98%	48%	78%
Improved natural environment	100%	82%	92%
Improved relations among neighbors	80%	49%	78%
Saved money	65%	38%	59%
Enjoyment and personal satisfaction	90%	52%	88%

From *Building Capacity in Evaluating Outcomes*, Unit 6 Handout 8.

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Relevant participant characteristics affecting outcomes

Add to this list with characteristics that are relevant for your own study and program.

Gender	Male, female; boy, girl
Age	Relevant age range
Race/ethnicity	White/Caucasian, African American, Asian, Latino, other
Ability/disability	Various types of abilities
Educational level	Current grade; level of educational attainment; type of education
Household	Size, generations, numbers of children
Income	Current annual household income; highest income; current monthly income; income levels
Previous experience	
Repeat participant	

Relevant program characteristics affecting outcomes

Add to this list with characteristics that are relevant for your own program.

Program activities	Examine outcomes by type of activities provided. For example, a parenting education program might involve a workshop, in-home visits, and parent support groups. A tobacco control program might include youth prevention, cessation and treatment, and policy change.
Location	Examine outcomes by individual facility, school, business, town, or county where the program is delivered.
Provider	Examine outcomes by who provides the program: volunteers, teachers, Extension agents, or an individual instructor.
Amount of service	e.g., number of sessions attended, number of contact hours for the participant, or the length of the program