

# Monitoring & Evaluation for Results

## Mixed-Methods



## Mixed-method Design

- Combining quantitative and qualitative methods at all stages of the data collection and analysis for stronger M&E
- Relies on the presentation of facts through words (qualitative) and statistical results represented with numbers (quantitative)
- Combines depth (qualitative) and breadth (quantitative)
- Overcomes the weaknesses of both methods
- Enables multilevel analysis (individual, household, community, organization, etc)
- Strengthens validity through triangulation

# Main approaches

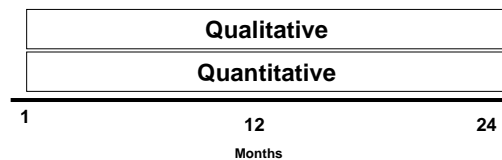
## Sequential

- quantitative and qualitative methods used one after the other



## Parallel

- quantitative and qualitative methods used at the same time



# Sequential Approach

## Example 1:

- Qualitative study to define issues and concepts/indicators [qualitative]
- Sample survey with closed-ended items [quantitative]
- Test results [quantitative]
- Qualitative studies to explain questions arising from the statistical analysis [qualitative]

## Sequential Approach

### Example 2:

- Sample survey with closed-ended items [quantitative]
- Identification of key groups or topics for in-depth analysis and identification of subjects to study [quantitative]
- Use of case studies, participant observation and other qualitative techniques with the selected subgroups [qualitative]

## Parallel Mixed-Method Approach

Level	Method	Topics
Project setting (context)	qualitative	<ul style="list-style-type: none"><li>• influence of economic, political, institutional factors on project implementation and outcomes</li></ul>
Organization: school, clinic	qualitative	<ul style="list-style-type: none"><li>• treatment of different groups</li><li>• quality of service delivery</li></ul>
Individual and household	quantitative	<ul style="list-style-type: none"><li>• household survey</li><li>• tests</li></ul>

## Common Data Collection Approaches

- Surveys (paper, mail, internet)
- Interviews
- Focus Groups
- Observations
  - Participant observation
  - Structured observation
  - Unstructured observation
  - Photography and video recording
- Analysis of documents and artifacts (e.g., test results)

## Quantitative Data: Strengths and Weaknesses

We sometimes (not always) find these strengths and weaknesses

### Strengths

- Generalization
- Statistical representation
- Estimation of magnitude and distribution of impacts
- Clear documentation of methods
- Standardized approach
- Statistical control of bias and external factors

### Weaknesses

- May not capture many types of information well (e.g., context)
- May not work well for “difficult to reach” groups (e.g., displaced persons)
- Data reduction loses information
- Can be time consuming to develop instruments and implement data collection

## Quantitative Data Collection

- Allows calculations to be made about post-intervention changes
- Uses aggregation to make judgments
- Used to construct explanatory or predictive models
- Permits analysis of patterns and regularities
- Permits some degree of comparison across settings
- Allows for trend analyses over time
- Provides an overview, which informs follow-up qualitative analysis
- Permits analysis of independent variables and external factors that might confuse interpretation of project effects

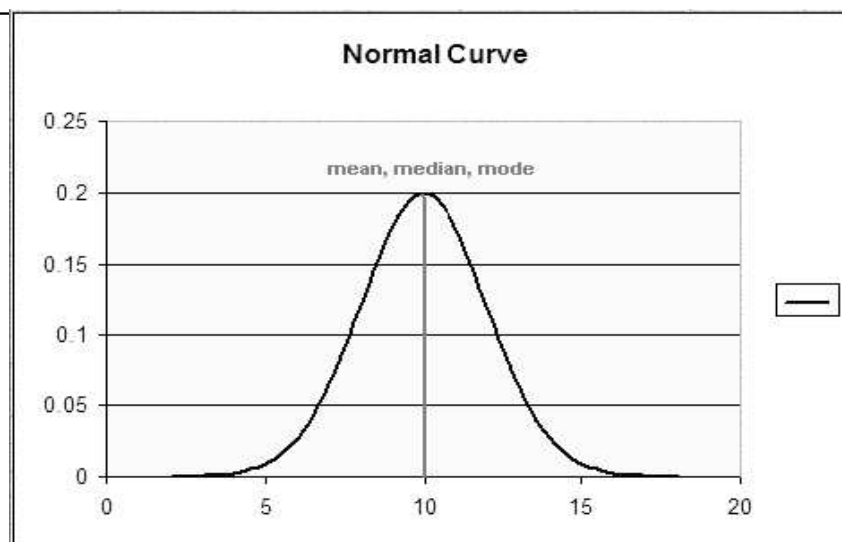
## Measures of Central Tendency

- **The 3-Ms:** Mode, Median, Mean
- **Mode:** most frequent response
- **Median:** midpoint of the distribution
- **Mean:** arithmetic average

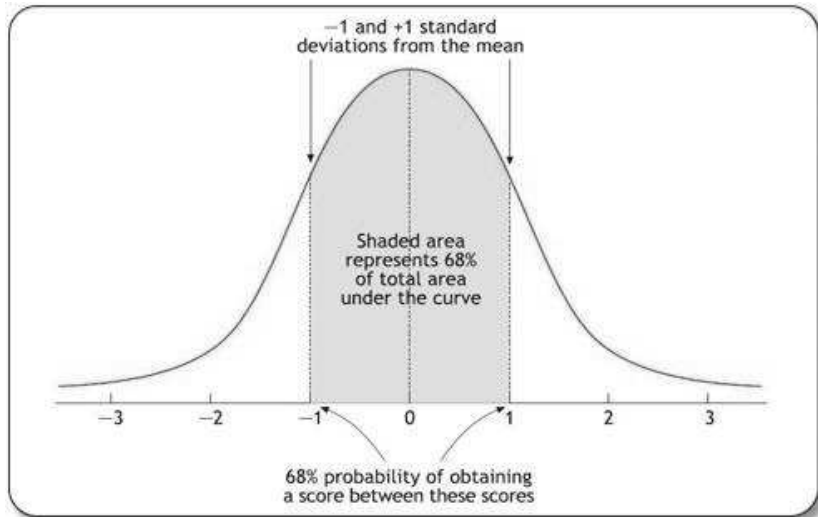
## Measure of Dispersion: Range and Standard Deviation

- **Range:** the difference between the largest and the smallest values
- **Standard deviation:** measures the dispersion of scores – the distance from the mean
- Small standard deviation: not much dispersion; most of the data or “scores” are close to the mean
- Large standard deviation: lots of dispersion and many scores are far from the mean

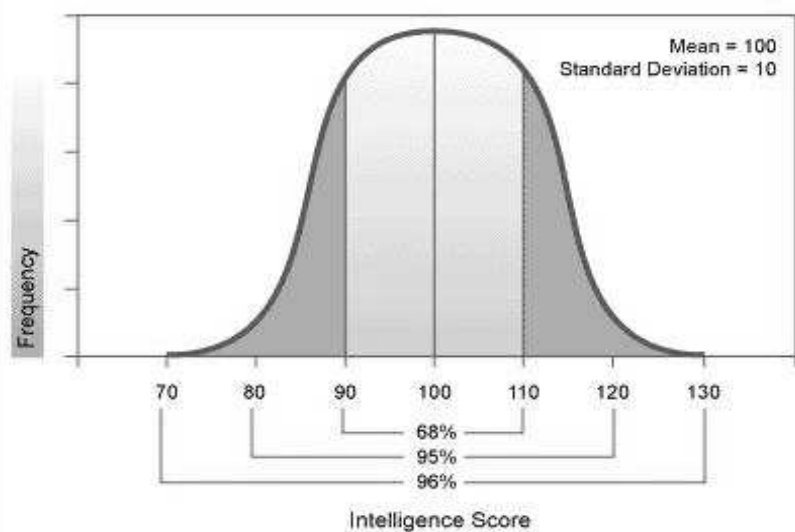
## Quantitative Data Analysis: Normal Curve



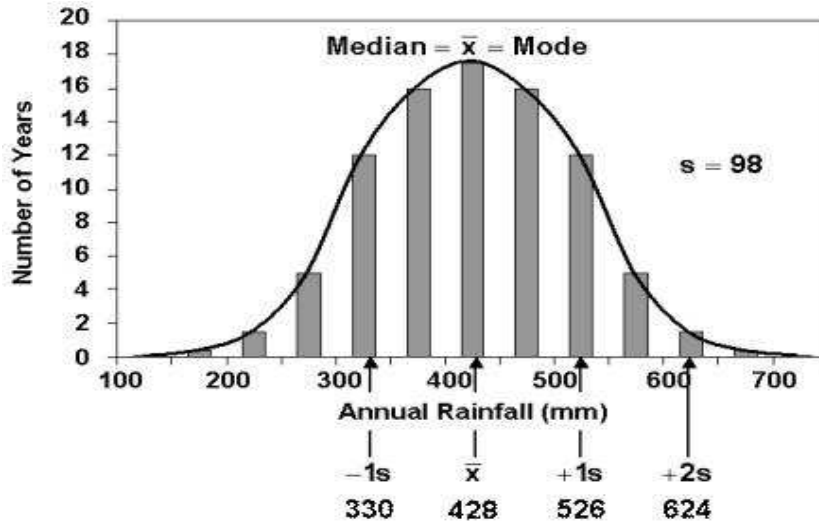
# Understanding How to Use the Normal Distribution



# The Normal Distribution and Intelligence Quotients

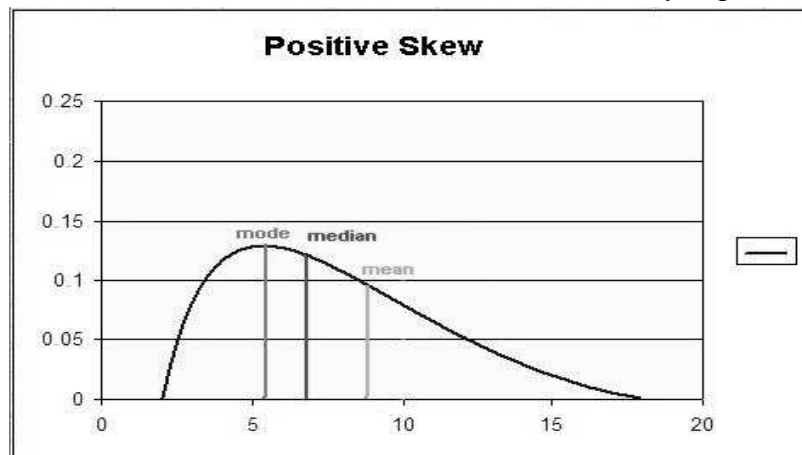


# Applying the Normal Distribution



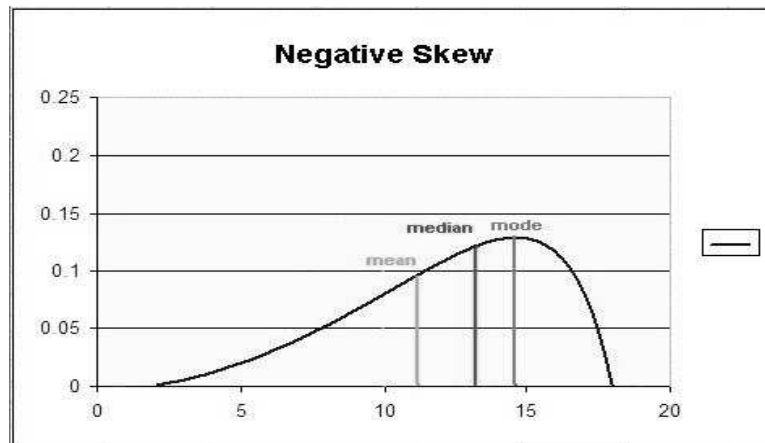
# Positive skew

Positive skew: The right tail is longer and a few large numbers distort the mean score -- the mean score is artificially high.



# Negative skew

The left tail is longer, and a few extremely small numbers distort the mean -- the mean score is artificially low.



# Qualitative Data: Strengths and Weaknesses

We sometimes (not always) find these strengths and weaknesses

## Strengths

- Flexible to evolve
- Sampling focuses on high value subjects
- Holistic focus ("the big picture")
- Multiple sources provide complex understanding
- Narrative more accessible to non-specialists
- Triangulation strengthens validity of findings

## Weaknesses

- Lack of generalizability
- Multiple perspectives (hard to reach consensus)
- Individual factors not isolated
- Interpretivist methods may appear too subjective
- Can be time consuming to prepare analysis

# Qualitative Data Analysis: Inductive Analysis

- “The primary purpose of the inductive approach is to allow research findings to emerge from the frequent, dominant or significant themes inherent in raw data, without the restraints imposed by structured methodologies.”



Dr. David Thomas

<http://www.health.auckland.ac.nz/hrmas/resources/qualdatanalysis.html>

# Example

1. What is your overall opinion of the new road?

The road has too many curves and is dangerous.
The road already has too many holes.
I am able to commute to the city every day instead of twice a week because of it.
My husband can spend more time at home and spend more family time due to faster commuting to his job.
It is good. I can travel to market quickly because it is smooth and there is not too much traffic.

## Qualitative Data Analysis: Inductive Analysis – Goals

- To condense extensive and varied raw text data into a brief, summary format.
- To establish clear links between the research objectives and the summary findings derived from the raw data and to ensure these links are both transparent (able to be demonstrated to others) and defensible (justifiable given the objectives of the research).
- To develop model or theory about the underlying structure of experiences or processes which are evident in the text (raw data).

Dr. David Thomas  
<http://www.health.auckland.ac.nz/hrmas/resources/qualdatanalysis.html>

## Qualitative Data Analysis: Inductive Analysis – General Process

1. Read the qualitative data carefully and fully.
2. Identify themes or categories from statements (or phrases) found in the qualitative data.
3. For each theme or category, identify all of the statements (or phrases) that go with that theme.
4. Determine linkages and relationships across themes (or phrases).
5. Reduce the number of themes or categories (3 to 8).
6. Create a model based on primary themes or categories

## Qualitative Data Analysis: Deductive Analysis

- “Deductive analysis involves analyzing data according to an existing framework (e.g., the results chain).”

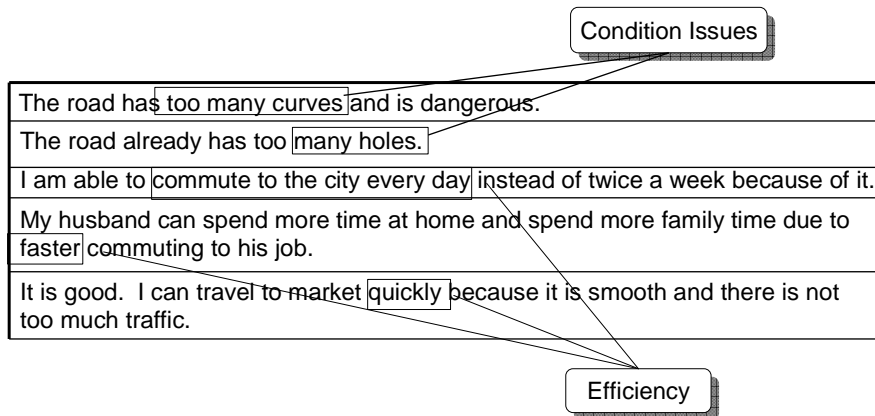
<http://www.wmich.edu/evalctr/checklists/qec/checkpoint9.htm>

## Qualitative Data Analysis: Deductive Analysis – General Process

1. Review the project model or framework.
2. Identify categories or groupings for data prior to data analysis.
3. Read the qualitative data carefully and fully.
4. Label statements (or phrases) in the qualitative data with the appropriate category or grouping based on the project model or framework.

# Content Analysis Example

1. What is your overall opinion of the new road?



# Coding of Content

## Sample of codes and categories

Yellow = income increased  
Green = access to markets and customers improved  
Pink = employment opportunities improved

Blue = access to education improved  
Grey = bypassing village and less income  
Purple = air pollution  
Red = traffic and safety issues

I can sell my produce in more markets. This allows me to earn more money each day.

My daughter can now attend vocational college in the city because bus service is now available.

My income has increased because I was able to find a better job in the city.

I sometimes wish that the road had not been constructed. We have more traffic traveling at higher speeds.

There are so many more cars. The air pollution has affected my grandmother's breathing.

Once the road was completed, fewer travelers stopped at my store. They now bypass the village and my monthly income has dropped 30%.

We have more money because my husband can get to a second job.

More people in the community are able to attend the city's vocational college and due to the regular bus service.

My wife was able to get a part-time job in the city and our family income has increased.

More air pollution, but overall more market access has helped my company grow, increasing our revenues

# Matrix for Coding

Sample of data coded and documented in an Excel file.

Respondent ID	Access to the market improved	Income increase	Access to secondary school improved	Employment opportunities improved	More traffic	Traffic accident	Air pollution	Bypassing the village	Access to health service improved
C128	X	X							
K245			X						
M358		X		X					
Etc...									
Total	20	26	15	18	11	5	10	8	16

# Activity: Qualitative Analysis

1. Identify a partner at your table.
2. One person in each pair will complete an inductive analysis of the qualitative data.
3. One person in each pair will complete a deductive analysis (using provided categories).
4. Code the data from the handouts.
5. Compare your notes when done (Inter-coder /Inter-rater reliability).

## Activity: Qualitative Analysis

- After completing your analysis with your partner, compare results with others.
- Discuss the following with your group members when everyone is done:
  - What were the strengths and limitations of the deductive analysis process?
  - What were the strengths and limitations of the inductive analysis process?
  - How would you go about using both approaches in your work?

## Different approaches to measure different expected results

Data Collection Tools

	Survey	Interview	Focus Groups	Observations	Document Review
Impact A		X		X	X
Impact B	X			X	
Outcome A	X		X		
Output A		X			X
Output B	X			X	X

## Triangulation

- The validity of estimates of process, outcome or impact indicators can be improved if estimates from two or more independent sources can be compared:
  - Household income reported in surveys
  - Observation of the quality of the house, consumer durables and quality of clothes

## Triangulation

- Triangulation requires that different estimates be systematically compared
  - If there are differences it is essential to understand and explain the differences
    - Are different data collection methods measuring different things?
    - Are some estimating methods more reliable/accurate than others?
- If the differences cannot be explained this must be stated in the evaluation report.