

# Qualitative and Quantitative research

There are numerous differences between qualitative and quantitative measurement.

## Quantitative Research

Quantitative Research options have been predetermined and a large number of respondents are involved. By definition, measurement must be objective, quantitative and statistically valid. Simply put, it's about numbers, objective hard data. The sample size for a survey is calculated by statisticians using formulas to determine how large a sample size will be needed from a given population in order to achieve findings with an acceptable degree of accuracy. Generally, researchers seek sample sizes which yield findings with at least a 95% confidence interval (which means that if you repeat the survey 100 times, 95 times out of a hundred, you would get the same response), plus/minus a margin error of 5 percentage points. Many surveys are designed to produce a smaller margin of error.

## Qualitative Research

Qualitative Research is collecting, analyzing, and interpreting data by observing what people do and say. Whereas, quantitative research refers to counts and measures of things, qualitative research refers to the meanings, concepts, definitions, characteristics, metaphors, symbols, and descriptions of things.

Qualitative research is much more subjective than quantitative research and uses very different methods of collecting information, mainly individual, in-depth interviews and focus groups. The nature of this type of research is exploratory and open-ended. Small numbers of people are interviewed in-depth and/or a relatively small number of focus groups are conducted.

Participants are asked to respond to general questions and the interviewer or group moderator probes and explores their responses to identify and define people's perceptions, opinions and feelings about the topic or idea being discussed and to determine the degree of agreement that exists in the group. The quality of the finding from qualitative research is directly dependent upon the skills, experience and sensitive of the interviewer or group moderator.

This type of research is often less costly than surveys and is extremely effective in acquiring information about people's communications needs and their responses to and views about specific communications.

***Basically, quantitative research is objective; qualitative is subjective.*** Quantitative research seeks explanatory laws; qualitative research aims at in-depth description. Qualitative research measures what it assumes to be a static reality in hopes of developing universal laws. Qualitative research is an exploration of what is assumed to be a dynamic reality. It does not claim that what is discovered in the process is universal, and thus, replicable. Common differences usually cited between these types of research include.

## Characteristics of quantitative and qualitative research

Quantitative	Qualitative
Objective	Subjective
Research questions: How many? Strength of association?	Research questions: What? Why?
"Hard" science	"Soft" science
Literature review must be done early in study	Literature review may be done as study progresses or afterwards
Test theory	Develops theory
One reality: focus is concise and narrow	Multiple realities: focus is complex and broad
Facts are value-free and unbiased	Facts are value-laden and biased
Reduction, control, precision	Discovery, description, understanding, shared interpretation
Measurable	Interpretive
Mechanistic: parts equal the whole	Organismic: whole is greater than the parts
Report statistical analysis. Basic element of analysis is numbers	Report rich narrative, individual; interpretation. Basic element of analysis is words/ideas.
Researcher is separate	Researcher is part of process
Subjects	Participants
Context free	Context dependent
Hypothesis	Research questions
Reasoning is logistic and deductive	Reasoning is dialectic and inductive
Establishes relationships, causation	Describes meaning, discovery
Uses instruments	Uses communications and observation
Strives for generalization Generalizations leading to prediction, explanation, and understanding	Strives for uniqueness Patterns and theories developed for understanding
Highly controlled setting: experimental setting (outcome oriented)	Flexible approach: natural setting (process oriented)
Sample size: n	Sample size is not a concern; seeks "informal rich" sample
"Counts the beans"	Provides information as to "which beans are worth counting"

In general, qualitative research generates rich, detailed and valid (process) data that contribute to in-depth understanding of the context. Quantitative research generates reliable population based and generalizable data and is well suited to establishing cause-and-effect relationships. The decision of whether to choose a quantitative or a qualitative design is a philosophical question. Which methods to choose will depend on the nature of the project, the type of information needed the context of the study and the availability of resources (time, money, and human).

It is important to keep in mind that these are two different philosophies, not necessarily polar opposites. In fact, elements of both designs can be used together in mixed-methods studies. Combining of qualitative and quantitative research is becoming more and more common.

Every method is different line of sight directed toward the same point, observing social and symbolic reality. The use of multiple lines of sight is called triangulation.

It is a combination of two types of research. It is also called pluralistic research.

Advantages of combining both types of research include:

research development (one approach is used to inform the other, such as using qualitative research to develop an instrument to be used in quantitative research)

Increased validity (confirmation of results by means of different data sources)

Complementarities (adding information, i.e. words to numbers and vice versa)

Creating new lines of thinking by the emergence of fresh perspectives and contradictions.

Barriers to integration include philosophical differences, cost, inadequate training and publication bias.

### **Qualitative data analysis**

Qualitative analysis involves a continual interplay between theory and analysis. In analyzing qualitative data, we seek to discover patterns such as changes over time or possible causal links between variables.