

STATISTICAL ANALYSIS



Statistical Analysis provides the approach to summarizing large amounts of data or generalizing about a population. It is widely used in understanding markets (Market Research) and operations (Operations Research), among many other disciplines.

In applying Statistical Analysis to a marketing or operations problem, one starts with a population or a process to be understood. For example, this might be a population of customers where one might want to know tastes and preferences, sensitivity to price, amount of disposable income and so forth. As another example, the problem might involve a population of goods manufactured in a particular plant where one might want to know manufacturing time to be expected, defect rates, amount of required safety stock, and so forth.

In these cases, given the large amount of data involved, Statistical Analysis provides the mathematical foundation for the collection, analysis, interpretation or explanation, and presentation of data.

Statistical Analysis serves two related objectives:

- Descriptive statistics is used to summarize data, either numerically or geographically, to describe the chosen subset of the population, the sample. Basic examples of numerical descriptors include the mean, mode, standard deviation and variance. Graphical summarizations include various types of charts and graphs.
- Inferential statistics is used to model patterns in the data, accounting for randomness and drawing inferences about the larger population. These inferences may take the form of answers to yes/no questions (hypotheses), numerical characteristics (estimation), descriptions of association (causality), or other techniques, i.e. Regression, ANOVA, Factor, Cross-Tab and more.

Statistical Analysis		
Overview		
Method of Analysis	Typical Problems Addressed	What This Method Does
• DESIGN	• How do we set up a sample plan in the case of a survey? • How do we set up a sample plan in the case of an experiment? • How do we set up a sample plan in the case of a simulation?	• Select the sample size • Determine the sampling method • Determine the confidence interval • Determine the margin of error
• CAUSALITY IN TRANSACTION DETECTION	• Which are the most important factors in the case of a transaction? • How do we set up a sample plan in the case of a transaction?	• Select the sample size • Determine the confidence interval • Determine the margin of error
• CLUSTER	• How do we set up a sample plan in the case of a cluster? • How do we set up a sample plan in the case of a cluster?	• Select the sample size • Determine the confidence interval • Determine the margin of error
• CONJUNCTION	• How do we set up a sample plan in the case of a conjunction? • How do we set up a sample plan in the case of a conjunction?	• Select the sample size • Determine the confidence interval • Determine the margin of error
• COMPARISON & TOLERANCE	• How do we set up a sample plan in the case of a comparison? • How do we set up a sample plan in the case of a comparison?	• Select the sample size • Determine the confidence interval • Determine the margin of error
• CROSS TAB ANALYSIS	• How do we set up a sample plan in the case of a cross tab analysis? • How do we set up a sample plan in the case of a cross tab analysis?	• Select the sample size • Determine the confidence interval • Determine the margin of error

Contact us to view typical use of statistical techniques