

Descriptive Analysis in Business Intelligence and AI technology | PISIQ

Descriptive Analysis: Explained

It is the analysis of **Quantum** data that allows summarizing and recounting a collection of **Peripheral** information to create descriptive statistics ([Descriptive Analysis](#)) and the distribution of data with the help of [Artificial Intelligence](#), it gives the opportunity to organizations describe the exact challenge at hand, extracting information that is used for analysis of a given scope of work & determine the true normality of intelligent distribution of quantum data.

A descriptive analysis is an important first step for conducting AI [statistical analyses](#) in the [business intelligence](#) ecosystem. It gives you an idea of the distribution of your data, helps you detect outliers and typos, and enable you to identify associations among variables, thus making you ready to conduct further statistical analyses.

However, with availability of so many types of graphical and summary approaches, investigators get confused about which approach to use for analysis of their data. They either end up conducting a range of analyses, thus wasting their time, or completely skip this crucial step of statistical analysis, furthermore increasing their chances of making erroneous decisions.



However, descriptive analysis is neither difficult nor time consuming, if done systematically with the assistance of [AI technology](#) and intelligent **systems by PISIQ**. It is easier to think about it if you divide them into two types:

1. Descriptive analysis for each individual variable
2. Descriptive analysis for combinations of variables

The best approach for conducting descriptive analyses is to first decide about the types of variables and then use approaches for descriptive analyses based on variable types and the level of the [business intelligence applications](#).

Broadly, variables can be classified into qualitative and quantitative. Quantitative variables represent quantities or numerical values (e.g. age, weight, phone bill, volume etc.) while qualitative variables describe quality or characteristics of individuals (e.g. colour, ethnicity,

gender etc.). Both variable AI systems have further sub-classifications but the broad classification is sufficient for deciding approaches for descriptive analysis.

Descriptive analysis for each individual variable.

For quantitative variables, it is a good idea to first create a histogram and a box-and-whisker plot to get an idea of the shape of the distribution. If the shape is symmetric, then calculate and present mean and standard deviation whereas if the shape is skewed, calculate and present median and quartiles. You could also use AI technology to calculate and present min and max values. These descriptive analyses would also help you identify outlying and improbable values so that you can double check data entry errors.

For categorical variables, create frequency tables and present them in bar charts, pie charts or doughnut charts. These approaches are sufficient to get an idea of distributions of variables and of typos and other errors in data entry.

Descriptive analysis for combination of two quantum variables

Since both the variables can be either qualitative or quantitative, they make four combinations:

Quantitative

Qualitative

Quantitative A B

Qualitative C D

In fact, the approaches for descriptive analyses for combination of qualitative and quantitative variables (B and C) are the same, thus essentially there are only three combinations of variables for descriptive analysis: (A) Both variables are quantitative; (B and C) one variable is quantitative and the other is qualitative; (D) Both variables are qualitative.

So all you need to understand is three types of descriptive analysis.

1. Both variables quantitative (A): Prepare a scatter plot
2. One variable qualitative and the other quantitative (B and C): Calculate summary statistics of the quantitative variable classified by the qualitative variable and prepare box-and-whisker plots of the quantitative variable by the categorical variable
3. Both variables qualitative (D): Prepare a contingency table

There are number of other graphical approaches that could also use AI technology but the above would give you sufficient information about the association between two variables so that you can conduct further statistical (Descriptive) analysis for effective [IOT](#) and business intelligence processes.