DESIGN OF MULTIFACTOR EXPERIMENTS

Design of Experiment (DOE) – Multivariate testing

In manufacturing companies, every process is exposed to multiple sources of variation: the combination of materials, equipment, methods, and environmental conditions. All these elements are naturally present and must be considered in both process design and operation to reliably achieve the desired output characteristics.

With three or more variables, understanding the impact of changing the values of these variables becomes complex, especially when there are interaction effects between these variables. An interaction occurs when the impact of one variable on an output characteristic depends on the level of one or more other variables.

Powerful methods

Adapted approach

We are practical experts!

Combining hard work with fun

HOW WE CAN HELP YOU

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Benefits

The multivariate experimental design (DOE) allows us to understand a complex situation due to the presence of interactions to acquire in-depth knowledge of the process.

Its main strength is the ability to model the effect of multiple variables in a very small number of trials, making it an efficient and often much less expensive approach than studying one variable at a time.

Difference, with its expertise in statistics, systematic approach, and ability to work in a team, can assist you in planning and analyzing your next trial.

Problem-solving

- Validate multiple potential causes of a problem in a small number of tests
- Discover an operating range that, in addition to producing the desired result, minimizes process variability

Research and development

- Develop a process that will be robust to uncontrollable sources of variation during normal production conditions
- Have an idea, even before beginning testing, of the multiple hypotheses that can be tested
- Obtain a mathematical model demonstrating the simultaneous impact of several variables and thus more quickly identify the next tests that will allow the desired objectives to be achieved