

ABSORBENCY OF PAPER TOWELS

1. Problem Formulation

Paper towel is a part of every day lives and choosing the best one is important. There are dozens of different kinds of paper towel on the market, most claim to be better, in some way or another. Some claim to be softer, some claim to be more absorbent, and some claim to be more durable. Did you ever wonder whether the store-brand of paper towel is as good as the big-name, big-advertising budget, big-price brand?

Objective

In this case study you will be involved in an experiment of comparing the absorbency of paper towels of three brands. We have selected only three brands to minimize the amount of time required to collect the data, but you can carry out the experiment with a larger number of brands. The instructions provided in the study will allow you to compare the absorbency of the brands selected by you and examine your own data. However, if you do not wish to be involved in the data collection process, you can use our data.

We will use the experiment to demonstrate the GLM General Factorial procedure available in SPSS. The procedure encompasses both analysis of variance and regression for one dependent variable by one or more factors and variables. In particular, it allows you to investigate the effects of individual factors as well as interactions between the factors.

You will have to design the experiment, collect the data, enter the data into SPSS, carry out the statistical analysis, and formulate your conclusions. The data collection equipment used in the experiment is very simple and relatively cheap. The experiment can be carried out in a team.

Statistical Concepts

Planned experiments, two-factor design, randomization, complete block design, general linear model.

Materials Needed

For each team, a balance sensitive to the nearest gram, one roll of name-brand paper towels, three rolls of store-brand paper towels having the same size as the name-brand towels, a bucket of water, 12-inch bowl, a coin, tongs, a stopwatch.

Software

The data will be analyzed using SPSS version 8.0.