A Soft-Drink Experiment using Replicated Full Factorial (RFF) Design

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Abstract

An experiment using factorial design allows one to examine simultaneously the effects of multi-independent factors and their degree of interactions. In this paper, a replicated full-factorial (RFF) design is run to determine the factors that have significant impact on the response of soft drink experiment. We consider the four factors each with two levels and observe the impact of these factors on the volume of foam of soft drink when pour into a glass. Our investigation finds that the significant main effects are soft drink type (A), amount of soft drink (C), and diameter of glass (D), whereas the significant two-factor interactions B (temperature) with C, and C with D. Furthermore, to support our analysis we do modeling using regression approach based on significant factors and interactions. From the analysis of model adequacy, it is observed that the assumptions underlying the estimated model are appropriate.

References

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York.


Index Terms

Computer Science  Artificial Intelligence

Keywords

Replicated full-factorial design, Soft drink, Interactions, Regression analysis, Model adequacy