

## **A Bayesian Decision Model for the Light-buyer Segment**

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### **Abstract**

Organizations must identify whether it would be profitable to spend marketing resources to encourage the growth of light buyers or to abandon them from their lists. Despite their comparatively small financial contribution in the present, a large number of "light buyers" may eventually generate large profits for a company. This paper proposes a Bayesian model and derives an optimal sampling plane under the assumption that the total amount spent by a light-buyer customer follows an exponential distribution. A loss function is considered that includes maintenance cost and profits. We present an optimal decision rule in the case of the light-buyer segment that can be provided for managerial decisions. A real data set is given to illustrate the derived Bayes rule and its practical applications. The derived rule is also compared to the traditional decision rule.

*Keywords:* Marketing, light buyer, Bayesian model.