

Engineering Skin Lotion

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Abstract

The objective of this paper is to find the perfect skin lotion for ichthyosis vulgaris patients and to make it profitable to produce. A consumer satisfaction model was created and evaluated using Microsoft Excel to choose the ingredients and concentrations to maximize the consumer satisfaction. The consumer satisfaction is based on the physical properties of the lotion which are directly related to the consumer properties. A demand model was then created in Excel to choose the ingredients and concentrations to maximize the profit.

The maximum consumer satisfaction was found to be 68% with 100% being ideal. The perfect product is not economically feasible while the demand model found a profitable solution with a consumer satisfaction of 62%. The average ROI for the profitable lotion with high advertising is 414%. The NPW for the same profitable lotion is \$19 million.