Development of a Linear Programming Model for the Diet Plan of University Students

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Abstract

According to the sources, nearly half million students are enrolled in 53 public universities throughout Bangladesh.A major percentage of students live in residence halls that the university provides. Most students are habituated to eating their regular meals at the dining hall of the dormitory because of cheap food. The primary investigation reveals that meals are lack of adequate nutrition in the dining of dormitory. As a result, students who live in residence halls are not getting sufficient nutrition from their daily meals. Investigating the lack of nutrients in these meals and optimizing them through accurate nutritional assessment are the main objectives of this study. Using primary data gathered from Hall's meal as a starting point, this study developed a linear programming model and then used software to optimize it using the simplex method.The analysis discovered a notable variation from the current meals. Existing meals are insufficient in terms of daily protein intake, but following optimization, the meals are adequate. The main goal of this optimization procedure is to reduce extra carbohydrates in the dining hall meals, fix them at a consistent amount, and spend the money on portions of fish or chicken that contribute more protein to the meals. Additional nutrients like vitamins, minerals, and such are not explored in this study. The study can be improved further by including these nutrients, and it will be updated regularly to reflect market pricing.

Key words
Linear Programming, Diet Problem, Nutrition and Optimization