FACULTY & RESEARCH

Modeling Expert Opinions on Food Healthfulness: A Nutrition Metric

by Jolie M. Martin, John Beshears, Katherine L. Milkman, Max H. Bazerman and Lisa Sutherland

Abstract

Research over the last several decades indicates the failure of existing nutritional labels to substantially improve the healthiness of consumers' food and beverage choices. The difficulty for policy-makers is to encapsulate a wide body of scientific knowledge in a labeling scheme that is comprehensible to the average shopper. Here, we describe our method of developing a nutrition metric to fill this void.

Methods

We asked leading nutrition experts to rate the healthiness of 205 sample foods and beverages, and after verifying the similarity of their responses, we generated a model that calculates the expected average healthiness rating that experts would give to any other product based on its nutrient content.

Results

The form of the model is a linear regression that places weights on 12 nutritional components (total fat, saturated fat, cholesterol, sodium, total carbohydrate, dietary fiber, sugars, protein, vitamin A, vitamin C, calcium, and iron) to predict the average healthiness rating that experts would give to any food or beverage. We provide sample predictions for other items in our database.

Conclusions

Major benefits of the model include its basis in expert judgment, its straightforward application, the flexibility of transforming its output ratings to any linear scale, and its ease of interpretation. This metric serves the purpose of distilling expert knowledge into a form usable by consumers so that they are empowered to make healthier decisions.

Keywords: Judgments; Food; Nutrition; Labels; Knowledge Use and Leverage; Demand and Consumers; Measurement and Metrics; Mathematical Methods;

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