

Calorie postings on menus cause more health mentions in online restaurant reviews

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Credit: Institute for Operations Research and the Management Sciences

In 2008, New York City mandated all chain restaurants to post the calories of items on their menus. The intent was to induce consumers to choose healthier items in the restaurant.

A forthcoming study in the INFORMS journal *Marketing Science*, a leading scholarly marketing publication, investigated whether the calorie posting on menus has broader spillovers by impacting consumer evaluations of the restaurant. The study finds that [health](#) mentions about the foods increased significantly in online reviews after the calorie

posting regulation. The result suggests that calorie posting can not only shift consumers towards healthier alternatives when inside a restaurant, but can also have spillovers on other customers reading the reviews by potentially redirecting them towards healthier restaurants and food items.

The study, "The Effect of Calorie Posting Regulation on Consumer Opinion: A Flexible Latent Dirichlet Allocation Model with Informative Priors," is co-authored by Dinesh Puranam of the University of Southern California, Vishal Narayan of the National University of Singapore, and Vrinda Kadiyali of Cornell University.

The authors analyzed 761,962 restaurant reviews across 9,805 restaurants on an online restaurant [review](#) website in New York City from 2004 to 2012. Using text-mining methods, the authors examined the change in the mentions of health in reviews over time before and after the calorie posting rule went into effect. To rule out the possibility that the health mentions increase was simply due to increased public interest in health issues over time, they compared the change in topics discussed for chain restaurants, relative to non-chain restaurants which were not mandated by the rule to post calorie information. The authors found a significant increase in the proportion of reviews that discussed health for chain restaurants, relative to non-chain restaurants.

The authors also explored in greater detail the source of the increase in health topics. They found that it was largely driven by new reviewers who were previously not active in posting reviews, but began to post more reviews after the mandate. Puranam noted that "interestingly, the increase in health discussion in opinions was not confined to restaurants in more affluent localities, commonly associated with more health-conscious consumers. This is an encouraging sign of the success of the rule across the socioeconomic divide - especially given the greater incidence of obesity among lower socio economic classes."

New York City recently expanded the rule to beyond chain restaurants to also include fine dining restaurants. Narayan noted that, "our result that calorie posting on menus impact online reviews is significant for this rule expansion since consumers are even more likely to consult reviews for fine dining restaurants than for chain restaurants that they habitually visit. Whether this will have an impact on calorific content of items on fine dining [restaurant](#) menus of restaurants of course remains to be seen."

Kadiyali cautioned that more work is needed to study whether the increased discussion of health topics actually do lead to greater choice of healthier restaurants. "It is possible that the health conscious [consumers](#) may choose healthier restaurants while the less health conscious may avoid them. In this case, health benefits across the population may be ambiguous. Nevertheless, our study suggests that online reviews are a useful place to look for potential changes in consumer behavior due to this rule," she said.

More information: Dinesh Puranam et al. The Effect of Calorie Posting Regulation on Consumer Opinion: A Flexible Latent Dirichlet Allocation Model with Informative Priors, *Marketing Science* (2017). [DOI: 10.1287/mksc.2017.1048](https://doi.org/10.1287/mksc.2017.1048)

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