



Success Breeds Success: Weight Loss Dynamics in the Presence of Short-Term and Long-Term Goals



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Abstract

We investigate the role of short-term goal achievement on long-term goal achievement under the context of weight loss. Using novel large-scale data from a freemium mobile weight management application, we track the daily dynamics of weight loss across a large number of users. The application sets a salient daily budget for calories, and by comparing cases in which the user is slightly under or over-budget, we provide an empirical link between short-term goal achievement and various long-term outcomes. Most importantly, we show that our results are robust to potential manipulation of calories consumption around the goal by implementing a nonparametric manipulation-robust regression discontinuity design. Next, we demonstrate using a dynamic regression discontinuity design that the short-term goal achievement effects persist over time, which reveals the self-reinforcing nature of short-term achievements. Finally, estimates from a dynamic structural model of calories management reveal that users receive positive utility from past short-term goal accomplishments, and counterfactual analysis with the estimated model quantify the long-run user benefits of various hypothetical policies that adjust the budget of calories.

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