

Energy Conservation and Public Bathrooms: The Power of Social Influence

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Introduction

- Societal recognition of the importance of promoting environmentally sustainable behavior has grown considerably over the past decade (Kazdin, 2009), with much of this attention focused on the importance of conserving energy.

- Whereas norms (Cialdini & Trost, 1998) have been shown to have a powerful influence on environmentally sustainable behavior, little is known about how perceived past behavior of others may influence norm perceptions in the domain of energy conservation.

- To further investigate these influences, the effect of a field intervention targeting energy conservation behavior was tested, in which the status of the lights (i.e., on or off) was unobtrusively manipulated before someone entered an unoccupied public bathroom.

We hypothesized that the status of the lights in a bathroom upon entry would signal the social norm around electricity usage for that setting. Thus, when people enter a bathroom where the lights are off, they will be more likely to turn the lights off upon exiting.

Methods

- Participants were 447 people using one of six public bathrooms on the campus of a large university during the fall of 2010.

- Bathrooms were monitored during one-hour shifts by researchers. The lights in the bathroom were manipulated while it was empty to be either on or off.

- After an individual exited the bathroom, the researcher recorded the status of the lights.

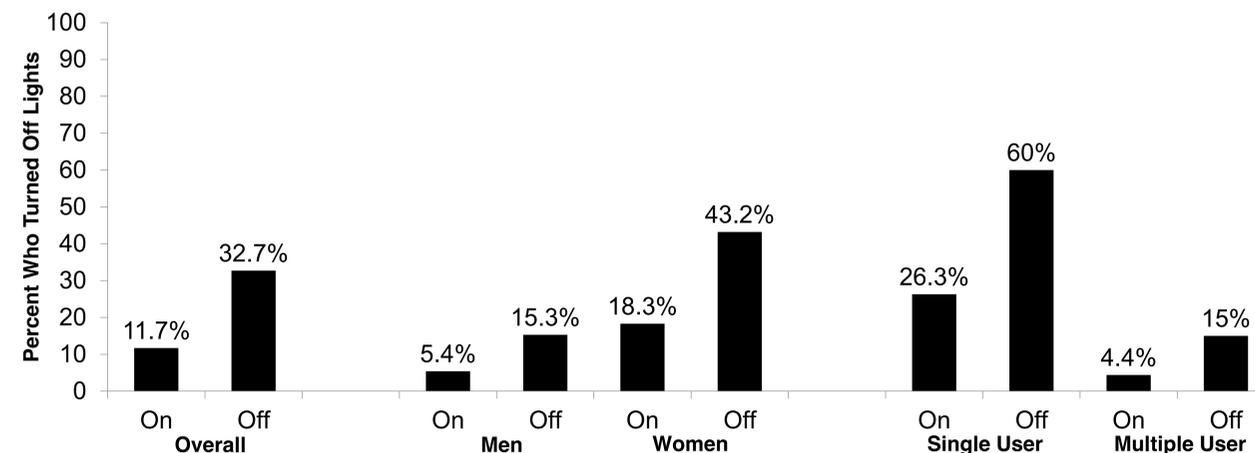
Descriptive and Chi-Square Results

- Participants in the “lights off” condition were significantly more likely to turn off the lights when they exited, as compared to participants in the “lights on” condition (32% vs. 12% respectively, $\chi^2(1, N = 447) = 28.46, p < .001$).

- We also observed that, regardless of condition, women were more likely to turn off the lights than were men (31% vs. 10%, $\chi^2(1, N = 430) = 28.91, p < .001$).

- In addition, participants in single user bathrooms were generally more likely to turn off the lights than were participants in multiple user bathrooms (43% vs. 9%, $\chi^2(1, N = 447) = 71.23, p < .001$).

- Results are presented in *Figure 1*:



• *Figure 1*: Status of the lights after the participant left the public bathroom. The overall results for the on and off conditions are reported on the left hand side of the figure. Results broken down separately by gender are in the middle of the figure and by single versus multiple user bathrooms are on the right side of the figure.

Loglinear Analysis

- A loglinear analysis was conducted to test whether gender and single versus multiple user bathrooms moderated the effect of the light status manipulation. Stepwise backward elimination began with a model containing all potential interactions.

- The loglinear model converged on a solution that included both the main effect of the light status manipulation on whether or not participants turned off the lights, $\chi^2(1, N = 430) = 25.19, p < .001$, as well as an independent interaction of gender and single versus multiple user bathrooms for predicting whether the lights were turned off or left on, $\chi^2(2, N = 430) = 7.54, p < .001$. The overall likelihood model was $\chi^2(6, N = 430) = 1.60, p = .90$.

Conclusion

- It was found that the status of the lights in a public bathroom has a large effect on the likelihood that people will turn off the lights when they leave.

- Gender differences were discovered in rates of turning off the lights, in line with past research suggesting women tend to engage in more pro-environmental behavior (Zelezny, Chua, & Aldrich, 2000).

- Our study is unique as it focuses on overt conservation behavior (Baumeister, Vohs, & Funder, 2007), and relies on perceived past behavior to convey norms (Goldstein, Cialdini, & Griskevicius, 2006).

- Future research should explore the drastic differences in rates of turning off the lights in single versus multiple user bathrooms. Research on diffusion of responsibility might be particularly relevant (Darley & Latané, 1968), as people might feel more personally responsible for turning off the lights when in a single user bathroom, as opposed to a multiple user bathroom, over and above the social norm effect demonstrated in our study.

References

- Baumeister, R. F., Vohs, K. D., & Funder, D. C. (2007). Psychology as the science of self-reports and finger movements: Whatever happened to actual behavior? *Perspectives on Psychological Science, 2*, 396-403.
- Cialdini, R. B., & Trost, M. R. (1998). Social influence: Social norms, conformity, and compliance. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The Handbook of Social Psychology* (4th ed., Vol. 2, pp. 151-192). Boston: McGraw-Hill.
- Darley, J. M., & Latané, B. (1968). Bystander intervention in emergencies: Diffusion of responsibility. *Journal of Personality and Social Psychology, 8*, 377-383.
- Goldstein, N. J., Cialdini, R. B., & Griskevicius, V. (2006). A room with a viewpoint: Using social norms to motivate environmental conservation in hotels. *Journal of Consumer Research, 35*, 472-482.
- Kazdin, A. E. (2009). Psychological science's contribution to a sustainable environment: Extending our reach to a grand challenge of society. *American Psychologist, 64*, 339-356.
- Zelezny, L. C., Chua, P., & Aldrich, C. (2000). Elaborating on gender differences in environmentalism. *Journal of Social Issues, 56*, 443-457.

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