

Water Conservation and Extension Participants: An Interesting Synergy¹

Laura A. Warner, Sebastian Galindo-Gonzalez, and Anil Kumar Chaudhary²

Introduction

Conservation is considered one of the most effective strategies for reducing the stress on water resources. The home landscape is a place where there is great opportunity for people to adopt irrigation practices and technologies that conserve water (Hurd, 2006). However, a large proportion of residents lack the required knowledge and skills to adopt some of those practices and technologies. UF/IFAS Extension conducts statewide programs to reduce the strain on water resources and encourage conservation by educating communities and individuals (UF/IFAS, 2011).

Using Innovative Methods to Evaluate Urban Water Conservation Programs

Innovative evaluation approaches are needed to demonstrate the impacts resulting from statewide urban water conservation programs. One approach is to compare the personal characteristics and water use behaviors of people who have and have not engaged in UF/IFAS Extension programs. Comparison outside of the Extension context can add power to evaluation efforts because it reduces the likelihood that respondents are replying because they want to be similar to other Extension program classmates or to please their instructor (Condrasky, Griffin, Catalano, & Clark, 2010; Mincemoyer et al., 2008).

As a formative evaluation strategy, comparing Extension participants to nonparticipants can reveal ways to modify programs, better meet the needs of existing participants, and target nonparticipants. As a summative evaluation strategy, comparing Extension participants to nonparticipants can demonstrate the impacts UF/IFAS programs are making on water resources in Florida.

Understanding Differences Between Extension Participants and Nonparticipants

When individuals have positive attitudes, strong social support, and adequate knowledge and skill about good irrigation (water conservation) practices, they are more likely to adopt them (Ajzen, 1991). We used a survey of Floridians to compare attitudes toward good irrigation practices, social support for engaging in good irrigation practices, knowledge and skill surrounding good irrigation practices, and actual use of the irrigation practices and technologies we encourage (Warner, Kumar Chaudhary, & Galindo-Gonzalez, 2016). We asked 653 Floridians if they had participated in any UF/IFAS urban water conservation Extension programs (Florida Friendly LandscapingTM, Master Gardener Program, Master Naturalist Program, Sustainable Floridians). Of these, 199 had participated in at least one of these programs and were considered Extension participants, while the 454 who had never participated in

1. This document is AEC616, one of a series of the Department of Agricultural Education and Communication, UF/IFAS Extension. Original publication date March 2017. Visit the EDIS website at <http://edis.ifas.ufl.edu>.

2. Laura A. Warner, assistant professor; Sebastian Galindo-Gonzalez, research assistant professor; Anil Kumar Chaudhary, PhD student; Department of Agricultural Education and Communication, UF/IFAS Extension, Gainesville, FL 32611.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Opportunity Institution authorized to provide research, educational information and other services only to individuals and institutions that function with non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, marital status, national origin, political opinions or affiliations. For more information on obtaining other UF/IFAS Extension publications, contact your county's UF/IFAS Extension office.

U.S. Department of Agriculture, UF/IFAS Extension Service, University of Florida, IFAS, Florida A & M University Cooperative Extension Program, and Boards of County Commissioners Cooperating. Nick T. Place, dean for UF/IFAS Extension.

these programs were considered nonparticipants. A summary of the results follows.

- **Attitudes.** There were very positive attitudes towards water conservation, and there was no difference between Extension participants and nonparticipants.
- **Knowledge and skill.** Knowledge and skill were also fairly high, and there was no difference between Extension participants and nonparticipants.
- **Social support.** Extension participants indicated that they had more social support for engaging in good irrigation practices than nonparticipants.
- **Use of good irrigation practices and technologies.** Extension participants were more likely to be engaged in using most of the water conservation practices and technologies disseminated by UF/IFAS. The biggest differences we found were related to technology installation (i.e., drip irrigation, soil moisture sensors, rain barrels) and landscape modifications (i.e., converting turfgrass to landscaped beds or retrofitting landscape so that a portion is not irrigated).

Both Extension participants and nonparticipants have positive attitudes towards using best irrigation practices, and they also both believe that they have the skill and knowledge needed to install water-saving technologies or adopt conservation behaviors. However, Extension participants are surrounded by peers, friends, and family who expect them to engage in water conservation in the home landscape. Extension participants are also more actively engaged in using technologies and practices that allow them to use less water in their home landscape.

We do not know whether Extension participants are more likely to conserve water because of the water conservation savvy people already around them, or if they tend to surround themselves with like-minded individuals. This study did not tell us whether the differences we identified mean different types of people are seeking out UF/IFAS urban water conservation programs or if our programs are responsible for these distinctions. It is most likely a combination of all of these possibilities. The Extension participants could have engaged in a variety of different programs that ranged from short workshops to multi-week or longer classes. Future research may explore the different program types.

How to Use this Information

Extension professionals who work on urban water conservation should consider the following:

- Lack of positive attitudes, skill, or knowledge is not preventing people from engaging in water conservation. Therefore, Extension activities need to be designed to go beyond providing information, raising awareness, or building support—these factors are already in place. Extension can go beyond these outcomes by focusing on encouraging behavior change and developing social support systems. One approach that may be useful is social marketing, which changes behaviors using audience research and tools, such as social norms, from commercial marketing (Monaghan, 2011; Sanagorski & Monaghan, 2014).
- Social support is an important factor in whether someone uses water conservation technologies and practices. Therefore, Extension is playing a role in building social support networks that promote water conservation. Extension programs should focus on building social support that leads to increased adoption. Extension professionals could target people who have not previously engaged in our programs by partnering with community members to make conservation practices more visible and build social norms around water conservation.
- Extension participants are using more water conservation technologies and practices, especially those that require equipment installation or complex landscape modification. As an evaluation finding, this could mean Extension is bringing about positive change in the communities we serve. Since nonparticipants are likely to use less complex water conservation practices and technologies, programs targeting new clientele should first focus on simpler changes and then integrate more complex behaviors.
- There are positive characteristics and changes associated with being an Extension participant. Therefore, Extension should be more intentional about targeting new clientele. Extension can partner with other organizations who are reaching people we are not, especially in the urban Extension context where many potential partner organizations are active.

Conclusions

Comparing Extension participants to nonparticipants may reveal how UF/IFAS urban water conservation programs are performing and provide information on how to change existing programs as well as target new Extension clients. Urban water conservation programs that build social

support will be more effective in encouraging the adoption of behaviors and technologies.

Acknowledgements

The authors thank the University of Florida's Center for Landscape Conservation and Ecology (CLCE, <http://gardeningolutions.ifas.ufl.edu/clce>) for supporting this publication. The authors wish to thank John Diaz, Esen Momol, and Wendy Wilber for their helpful suggestions on an earlier draft.

References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- Condrasky, M. D., Griffin, S. G., Catalano, P. M., & Clark, C. (2010). A formative evaluation of the Cooking with a Chef program. *Journal of Extension*, 48(2), 2FEA1. Retrieved from https://www.joe.org/joe/2010april/pdf/JOE_v48_2a1.pdf
- Hurd, B.H. 2006. Water conservation and residential landscapes: Household preferences, household choices. *Journal of the Agricultural and Resource Economics*, 31(2), 173–192.
- Monaghan, P. (2011). *Community-based social marketing (CBSM): Extension's new approach to promoting environmental behavior change*. Gainesville: University of Florida Institute of Food and Agricultural Sciences. <http://edis.ifas.ufl.edu/wc119>
- Mincemoyer, C., Perkins, D., Ang, P. M. M., Greenberg, M. T., Spoth, R. L., Redmond, C., & Feinberg, M. (2008). Improving the reputation of cooperative extension as a source of prevention education for youth and families: The effects of the PROSPER model. *Journal of Extension*, 46(1), 1FEA6. Retrieved from <https://www.joe.org/joe/2008february/a6.php>
- Sanagorski, L. A., & Monaghan, P. (2014). *Using social norms to increase behavior change in sustainable landscaping*. Gainesville: University of Florida Institute of Food and Agricultural Sciences. <http://edis.ifas.ufl.edu/wc158>

University of Florida Institute of Food and Agricultural Sciences [UF/IFAS]. (2011). *Shaping solutions for Florida's future: The University of Florida extension roadmap 2013–2023*. University of Florida. Retrieved from http://pdec.ifas.ufl.edu/roadmap/FloridaExtensionRoadmap_2013-2023.pdf

Warner, L. A., Kumar Chaudhary, A., & Galindo-Gonzalez, S. (2016). Extension users and non users differ in water conservation normative beliefs, intentions, and behaviors. *HortTechnology*, 26(6), 852–861.