Landscape Treatment and Residents' Satisfaction: Results from Wave 2 of the North Desert Village Social Survey

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Introduction / Research Questions

North Desert Village (NDV) is a housing center on the campus of Arizona State University Polytechnic, in Mesa, AZ. Since 2004, it has been a research site for CAP-LTER scientists who aim to examine the relationships between people and their environment.

A key question has been to ask, **Can the manipulation of residents' environments bring about change in their environmental satisfaction and preferences?** Specifically, the landscapes of four mini neighborhoods at NDV were experimentally manipulated to resemble typical landscaping regimes observed in the Phoenix metropolitan area:

- Native: plants native to the Sonoran Desert, with no watering
- Xeric: low water use plants without turf grass, with a drip irrigation system
- Oasis: a mixture of high and low water use plants and turf grass, with both drip irrigation and sprinkler systems
- Mesic: high water use plants and turf grass, with irrigation

An additional fifth neighborhood was unaltered and used as a control.

A strength of the research project is its experimental design and the pre- and post-treatment surveys. Experimental designs are generally uncommon in social science research.

Project Timeline

2004: Respondents at NDV interviewed (pre-treatment questionnaire)

2005: Landscape manipulation finished

2006: Respondents at NDV interviewed again (post-treatment questionnaire)

Satisfaction & Preferences

Satisfaction:

At both the 2004 and 2006 surveys, residents were asked to comment on their satisfaction with their current NDV landscape: "Would you say you are very unsatisfied, somewhat unsatisfied, somewhat satisfied, or very satisfied with the landscaping in your yard?" These responses were scaled from 1 to 4.

Preferences:

In 2004 and 2006, residents were shown four pictures of an actual NDV home that was digitally altered to resemble the experimental landscapes:

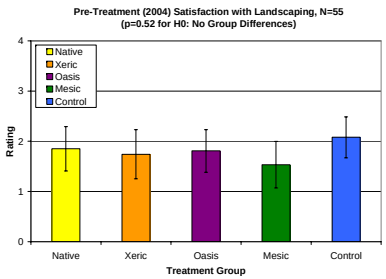
For each picture, residents were asked: "On a scale from 1 to 4, how much do you like this kind of yard?"

1. Dislike very much
2. Dislike somewhat
3. Like somewhat
4. Like very much

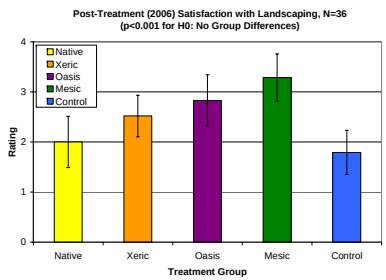
Note: We asked satisfaction and preferences for front and back yards separately, and we showed different pictures for front and back yards. For simplicity, our analysis in this poster averages the values for front and back yards.

Results

Satisfaction:

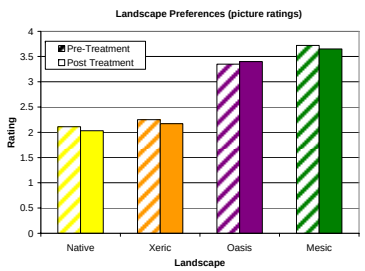


As expected, there are no differences in satisfaction across neighborhoods BEFORE experimental manipulation.



Significant satisfaction differences emerge AFTER experimental manipulation.

Preferences:



Preferences for landscapes, however, remain unchanged from pre- to post-treatment.

Summary

- Residents' satisfaction with their landscaping changed in response to treatment. Residents were most satisfied with mesic landscapes, least satisfied with native desert landscapes.
- Preferences for different types of landscapes did not change. High water use landscapes remained most preferred, and low water use landscapes were least preferred.

What does this mean?

- Preferences appear unchangeable, at least in the short term. Residents' satisfaction changed, but they responded with their pre-existing preferences for high water use landscapes.

Limitations

- Achieving high response rates for in-person interviews at NDV is increasingly difficult. N decreased from 55 (pre-treatment) to 36 (post-treatment). Sample representation and generalizability are questionable.
- Experimental landscapes at NDV are still young. Results may have differed if residents were able to experience mature landscapes.

Implications

- It appears that many people have fairly **unalterable preferences for mesic landscape features**.
- Forcing completely low water use landscapes on individuals may meet strong resistance.
- More **success may be had with oasis or mixed strategies**, where mesic features are present, but minimized. While this does not achieve the lowest water use, it may be a useful compromise to obtain water consumption reductions.