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Benefits of botanical garden visitation: A means-end study☆

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ABSTRACT

Botanical gardens vary widely in design and purpose, but most are typically associated with environmental conservation, education, or historical interpretation. Yet, studies have shown that botanical garden visitors are often motivated by recreational and leisure interests. While visitor motivations and benefits have been the focus of a number of botanical garden and green space visitor studies, this research has often been conducted without a theoretical backdrop. This study employed means-end theory to investigate the links visitors make between garden attributes, consequences, and values. In-person interviews were conducted with 83 garden visitors during the spring and summer of 2011 at a university botanical garden. Overall, the findings revealed that participants felt that the *botanical garden* and *plants* were the most meaningful garden attributes, leading participants to experience the consequences *new experiences and learning*, and *stress relief and relaxation*, and finally reaching the most frequently mentioned values: *transference* and *improved quality of life*. Analysis revealed no meaningful differences between visitation outcomes for males and female. For students, visiting the botanical garden lead to *stress relief and relaxation* and the value of *improved quality of life*, while non-students reported that their visits increased their *fun and enjoyment of life*. Those participants who work or go to school on campus reported an important means-end chain that led from *escape* to *stress relief and relaxation* to *improved quality of life*, which was not present for campus' visitors. The results indicate that botanical gardens should be managed to provide a rich, overall experience that promotes relaxation, in addition to maintaining a healthy, interesting, and diverse collection of plant materials that enables visitors to experience new plants and enables opportunities for learning.

Introduction

Botanical gardens have been an integral part of society for hundreds of years. The first true botanical gardens were built in Europe as "physic gardens" in the 16th Century when plant species were brought back from newly discovered lands (BGCI, n.d.). These botanical gardens served as a repository for the newly discovered botanic wealth, a place to evaluate and research these plant species for their economic (Ward et al., 2010) and esthetic potential, and a place for community members to interact with these plants. At the same time that the first European botanical gardens were being developed, private homes and gardens were opened for public visitation. According to Connell (2005), such gardens were not developed for visitors but over time these gardens "adopted and adapted their facilities for this function—the consumption of pleasure by the public" (p. 185). Private garden visitation began as country homeowners allowed other elite, upper class people to visit their country homes and gardens (Connell, 2005). Public interest in gardens grew in the 19th century as the growing urban middle class emulated upper class recreation pursuits (Constantine, 1981). Major cities established public botanical gardens in the 1800s, which also added to the growing public interest in garden visitation. As visitation steadily increased, the reasons for visitation evolved from a simple desire to see flowers to a complex blend of social, intellectual, and personal factors. In part, gardens create an opportunity to retreat from everyday modern life into a pleasant environment. These ideals are echoed in other research that point to gardens as being spiritually satisfying and creating a tranquil environment for leisure consumption (Connell, 2005). These gardens and plants allowed people to learn about and vicariously explore distant lands in a time before mass media and global tourism.

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This tradition of building gardens as a way for people to interact with plants has continued to flourish. Approximately 200 million people visit botanical gardens each year (Chang et al., 2008), this figure is comparable to the almost 279 million visitors to National Parks in 2011 (NPS, 2012). With 2500 botanical garden-related organizations spread throughout the world (Ward et al., 2010), botanical gardens perform a major role as research sites, reservoirs of biodiversity, tourist destinations, education and public outreach centers, as well as by providing exposure to species and ecosystems that visitors may never otherwise experience. As a public learning institution, botanical gardens have "an increasing important role to play in society, and [this] leisure setting will provide an important medium through which people can acquire information, develop ideas and construct new visions for themselves and their society" (Packer and Ballantyne, 2002, p. 183). Botanical garden managers often develop and maintain gardens with the assumption that visitors frequent botanical gardens for educational purposes (Ballantyne et al., 2008). A large portion of garden resources is often dedicated to educating visitors about issues ranging from gardening techniques and skills to environmental awareness and resource conservation. However, studies on visitor motivations have shown that in reality, botanical garden visitors are often motivated to pursue a wide range of leisure activities outside of horticultural interests (Connell, 2004; Nordh et al., 2011; Ward et al., 2010).

Little is understood about garden visitors and the outcomes they obtain from visiting botanical gardens. Overall, Connell (2004) asserted that "there has been a consistent neglect of the subject in tourism and recreation management literature" (p. 229) and other researchers (Ballantyne et al., 2008; Murray et al., 2007) have cited the need for further studies into botanical garden visitation. Additionally, research-to-date lacks analysis of how garden attributes affect personal values. Such information could assist garden managers in developing management plans and garden policies to create garden experiences that enable visitors' outcome attainment.

Therefore, the purpose of this study was to understand the outcomes that individuals experience from visiting a botanical garden. Means-end theory was utilized because it allows researchers to directly link the attributes of an experience—in this case visiting a botanical garden—to values identified by participants. The following two research objectives guided this study:

1. To identify the means-end theory outcomes—the attributes, consequences, and values and the interrelationships among these elements—associated with the experience of visiting a botanical garden.
2. To examine differences in outcomes across visitor subgroups.

Literature review

In addition to studies on botanical gardens, this literature review includes research conducted in several other similar types of spaces, including urban green spaces (such as public parks) and greenways. These research areas were reviewed to explore the types of research and theory being applied to places that are similar in function to botanical gardens. While botanical garden user research has been conducted for numerous years in an attempt to understand garden users, this research has often been conducted without a theoretical backdrop. These studies simply attempt to identify who is visiting and why (Sherburn and Devlin, 2004), utilizing simple surveys or questionnaires and focusing on visitor attributes and demographics. However, some research has been conducted on visitors' motivations and outcomes.

Visitor motivations

The field of outdoor recreation research has studied visitor motivations extensively. This body of research has yielded a standardized list of categories "that can be used to measure motivations" in recreation (Manning, 1999, p. 171). The majority of results from botanical garden visitor motivations studies align with terms and phrases from this list, including family togetherness, similar people, learning, creativity, enjoy nature, escape personal/social pressures, and escape physical pressure (Manning, p. 168–170). Understanding users' motivations for visiting botanical gardens and other similar outdoor spaces has been considered important because botanical garden managers often develop and maintain gardens with the assumption that individuals visit botanical gardens for educational purposes. Studies from across the globe have revealed that visitors are less interested in environmental, educational, and conservation concerns than by social, horticultural, and setting based motivations (Ballantyne et al., 2008; Connell, 2004; Nordh et al., 2011; Ward et al., 2010). These studies demonstrated the need for understanding garden visitors and their motivations to help guide botanical garden or other outdoor space managers to plan future developments and maintain current operations.

Visitor benefits

Lewis and Kaiser (1991) argued "benefits are too important to too many people to ignore their magnitude and value when justifying programs and budgets, formulating and analyzing policies, and making investment decisions" (p. 22). Studies of botanical gardens, open spaces, and natural areas have revealed multiple psychological, social, health, and community benefits that botanical garden visitors obtain from their experiences (Holbrook, 2010; Kohlleppel et al., 2002; Maller et al., 2005; Ward et al., 2010). Researchers concluded that botanical gardens offer unique experiences that can positively impact visitors well being and could be used as places to help people cope with stress (Kohlleppel et al., 2002). Moreover, people who live close to nature have a higher satisfaction with life, but just knowing that natural places exist and are available for use can have positive effects, even if people never actually visit them (Holbrook, 2010; Maller et al., 2005). Additionally, people who use green spaces more frequently and for longer periods of time see greater benefits (Lafortezza et al., 2009). Beyond understanding visitor outcomes, such benefits can be used by garden managers to justify financial support and funding requests, as well as to advocate garden visitation as a healthy social pastime. Study results led Ward et al. (2010) to conclude that the important psychological, ecological, esthetic, and health related benefits of urban green spaces warrant new approaches to social inclusion and green space planning.

Studying connections between attributes and outcomes

In researching garden visitation, researchers have sought to find relationships between particular attributes of a botanical garden or similar outdoor spaces and visitor outcomes. Researchers applied a variety of methods to conduct these studies, including means-end theory, survey questionnaires, and landscape narrative. Using means-end theory, Frauman and Cunningham (2001) found that the presence of basic greenway amenities (such as parking lots or pavement) created situations that allowed constrained users (such as people with a disability or people with children) to experience autonomy, which led these users to experience feelings of self-fulfillment and respect. Sherburn and Devlin (2004) discovered that students from environmental studies majors placed more value on campus arboretum than students from other majors, such as business. While the presence of an arboretum was not enough to