



## Situational influences on normative evaluations of coastal tourism and recreation management strategies in Hawai'i

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### ABSTRACT

Acceptance of tourism and recreation management strategies depends on situational factors including social, resource, and facility impacts. If an area has adequate facilities, little crowding, and minimal environmental impacts, modifying existing management may be opposed. If an area is damaged and overcrowded, actions such as limiting access may be acceptable. This article measures normative acceptance of management strategies and how situational factors differentially influence acceptance. Surveys of 1399 tourists and residents at coastal sites in Hawai'i included eight hypothetical scenarios describing impacts to four factors: use level/density, presence of litter, damage to reefs, and condition of facilities. Respondents rated their acceptance of improving awareness/education, restricting use, increasing facilities, and improving maintenance for each scenario. Factors differentially influenced acceptance of these actions. Damage to reefs was the most important factor influencing acceptance of improving awareness. Use level was most important when rating acceptance of restricting people, and facility conditions were most important in acceptance of increasing maintenance and facilities.

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### 1. Introduction

Coastal and marine environments are popular settings for tourism and recreation activities. In recent years in Hawai'i, for example, more than 80% of the state's seven million annual visitors engaged in coastal and marine activities with the majority participating in scuba diving (e.g., 200,000 people per year between 2001 and 2005) or snorkeling (e.g., three million people per year between 2001 and 2005; Friedlander et al., 2005; Hawai'i DBEDT, 2002; van Beukering & Cesar, 2004). Coastal and marine areas are also important recreation resources for local residents. Approximately 30% of households in Hawai'i, for example, had at least one person who participated in recreational fishing in 2004 (QMark, 2005). Other popular activities in these settings include ocean kayaking, swimming, sunbathing, beach walking, and surfing.

As the popularity of coastal and marine areas for tourism and recreation continues to increase, concerns have been raised that additional use could damage the ecological integrity of resources, reduce the quality of user experiences, depreciate the condition of facilities accommodating users, and generate conflict among

interest groups (Lück, 2008; Manning, 1999, 2007; Orams, 1999; Weaver, 2001). Regulatory agencies face a number of challenges in this context as they attempt to implement appropriate management strategies that mitigate social, environmental, cultural, and facility impacts of increasing public use to ensure that user satisfaction and environmental and facility conditions do not deteriorate (Ryan, 1995).

Given recent demographic shifts (Cordell, Bergstrom, Betz, & Green, 2004), changes in public attitudes and values (Manfredo, Teel, & Bright, 2003), and the increased effectiveness of interest groups (Needham & Rollins, 2005), a broad spectrum of the public now demands and expects involvement in decision making about coastal tourism and recreation management issues (Marion & Rogers, 1994). Groups may resort to administrative appeals, court cases, or ballot initiatives if they perceive that their concerns are not being addressed, and management actions lacking public support may be ineffective (Williamson, 1998). It is important, therefore, to understand user opinions about tourism and recreation management strategies in coastal areas (Higham & Lück, 2007; Ryan, 1995). This article examines tourist and resident support and opposition toward potential strategies for managing tourism and recreation impacts at several coastal sites in Hawai'i, and how situational factors such as coral reef damage, use levels, and amount of litter differentially influence support and opposition to these management strategies.

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### 1.1. Conceptual background

Management of tourism and recreation can be categorized into two general approaches. First, direct management strategies act directly on user behavior leaving little or no freedom of choice. Second, indirect strategies are more voluntary and attempt to influence decision factors on which users base their behavior (Manning, 1999, 2007; Needham & Rollins, 2009). To illustrate, direct management practices aimed at reducing litter in a coastal area could include a regulation prohibiting littering and then enforcing this policy with fines or other sanctions. An indirect practice could be an education program informing users of undesirable environmental and aesthetic impacts of litter, and encouraging users to stop littering. Additional direct actions include quotas and other methods for limiting use such as zoning, user fees, and prohibiting certain activities. Other indirect strategies include voluntary guidelines and facility upgrades and maintenance (e.g., trash cans, boardwalks). This article examines user reactions to three indirect management strategies (improve user awareness/education, increase maintenance or upkeep, provide more facilities or services) and one direct strategy (restrict use by limiting the number of people allowed) that were prioritized by local, county, and state agencies.

Norm theory offers a theoretical and conceptual approach for identifying public support and opposition toward these types of direct and indirect management practices (e.g., restrict use, increase maintenance), and can help explain why these types of practices are judged acceptable or unacceptable (Vaske & Needham, 2007). One line of research defines norms as standards that individuals use to evaluate activities, environments, or management strategies as good or bad, better or worse; norms are what people believe individual or agency behavior should be in a given context (Manning, 1999, 2007; Needham, Rollins, & Vaske, 2005; Shelby, Vaske, & Donnelly, 1996; Vaske & Donnelly, 2002; Vaske & Whittaker, 2004). In a coastal context, norms or evaluative standards may refer to the extent that agency strategies for addressing user crowding or damage to coral reefs would be acceptable or unacceptable to users.

Measuring norms toward tourism and recreation management strategies has traditionally involved asking single item questions to investigate whether people support or oppose individual strategies (Manning, 1999, 2007). Users in coastal areas may be asked, for example, whether they feel that providing more educational information on signs or brochures is acceptable or unacceptable (Shafer & Inglis, 2000; Tonge & Moore, 2007). This approach can be problematic for two reasons. First, it can result in a “ceiling effect” where many strategies are supported by most respondents, but implementing all supported strategies may be impossible for logistical or financial reasons (Lawson, Roggenbuck, Hall, & Moldovanyi, 2006; Oh, 2001). Research may reveal, for example, that users support restricting the amount of use and providing more information at a site, but budget cuts and lack of personnel may constrain the ability to provide educational materials and monitor use levels (Needham & Rollins, 2009). Second, acceptance of strategies can depend on situational factors such as associated levels of social, environmental, and facility impacts (Kneeshaw, Vaske, Bright, & Absher, 2004; Vaske & Needham, 2007). If a coastal area, for example, has adequate facilities, little crowding, and minimal coral reef impacts, modifying an existing management regime may not be supported by users. Conversely, if the reef is damaged and the site is overcrowded, then direct actions such as limiting use may be more acceptable. Practices acceptable in one context may not necessarily be acceptable in another, depending on the norms that individuals hold for a particular context and management action.

This traditional approach for measuring norms toward management rarely reflects the complexity of actual tourism and recreation management and decision making processes. This approach also generally fails to address contextual or situational factors that may differentially influence decisions to support or oppose particular management actions (Kneeshaw et al., 2004; Lawson et al., 2006; Sorice, Oh, & Ditton, 2007, 2009). A need exists in coastal tourism and recreation to understand both the range of contextual or situational factors influencing management, and how users and other interest groups respond to these factors (Sorice et al., 2009). Understanding these situational influences on public acceptance of management may increase manager confidence when choosing among various potential management alternatives. Given the complexity of most management situations, it may be more useful to examine how individuals tradeoff their support for specific management strategies in light of situational factors such as social, resource, and facility impact levels (Kneeshaw et al., 2004; Lawson et al., 2006).

Recent research has used multivariate statistical techniques such as conjoint analysis (Gustafsson, Herrmann, & Huber, 2003; Luce & Tukey, 1964) to investigate the relative importance that users place on various aspects of a tourism and recreation setting, and the extent that users consider tradeoffs among these situational factors in their normative support of management practices (Dennis, 1998; Kneeshaw et al., 2004; Lawson et al., 2006; Sorice et al., 2007, 2009; Teisl, Boyle, & Roe, 1996). Instead of asking individuals to rate their support for a single factor or strategy (i.e., traditional approach), these newer survey based techniques involve scenarios or profiles describing configurations of a combined set of factors. Respondents react to a package or profile of situational factors in a scenario and weigh tradeoffs among these factors when reporting norms for each management strategy. This approach provides managers with an understanding of how people could respond to implementation of strategies given combinations of current or future social, resource, and facility impacts or conditions (Sorice et al., 2007).

Conjoint analysis originated in mathematical psychology and marketing to estimate how different situational factors (e.g., car color, fuel efficiency, price) influence consumer purchasing preferences (Green & Srinivasan, 1978; Luce & Tukey, 1964). Consumers rarely have the option of purchasing products that are the best in every attribute, so they often make tradeoffs. Conjoint analysis determines what combination of a limited number of factors and levels is influential on respondent decisions. This approach has been used in tourism, recreation, and natural resources to examine factors influencing windsurfer satisfaction (e.g., crowding, wind; Ninomiya & Kikuchi, 2004); effects of wildfire (e.g., risk to homes, lightning or human started) on acceptance of management (e.g., put fire out, let it burn; Kneeshaw et al., 2004); camper tradeoffs among setting preferences such as facilities and fees (Lawson et al., 2006); and factors influencing tourism destination and activity choices (Suh & McAvoy, 2005; Thyne, Lawson, & Todd, 2006).

Steps in conjoint analysis include characterizing the decision problem, identifying and describing situational factors and their levels, developing an experimental design, constructing the data collection instrument, collecting data, and estimating the model (Holmes & Adamowicz, 2003). If the decision problem is acceptance of closing a particular beach, for example, factors influencing this decision may include crowding, beach erosion, facility conditions, endangered species presence, litter, dangerous shore break, and coral reef health. Researchers specify two or more levels for each factor (e.g., litter, no litter). The number of possible combinations increases exponentially as the number of factors and levels increases, and it is often too prohibitive and burdensome to have respondents consider all combinations of possible factors and

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