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# Using a randomised experiment to test the causal effect of service quality on visitor satisfaction and loyalty in a remote national park

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## HIGHLIGHTS

• Tested the causal relationship between service quality, visitor satisfaction and loyalty using a randomised experiment.

• Experimentally manipulating two service quality attributes significantly changed attribute performance.

• The manipulation of service quality did not have a statistically significant effect on visitor satisfaction and loyalty.

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### ABSTRACT

For parks and protected areas knowledge of visitor expectations and loyalty is limited. Understanding the relationships between service quality, satisfaction and loyalty continues to both intrigue and frustrate researchers and the managers of protected areas. Significantly, past research has focused on observational data where conclusions of causality rather than association are assumed. This study tested the causal relationships between service quality, visitor satisfaction and loyalty using a randomised experimental design. Two service quality attributes (ranger presence and provision of information) were manipulated to test whether they have an effect on visitor satisfaction and loyalty in a remote national park. Although experimentally manipulating these two service quality attributes did significantly change their perceived performance, they did not have a statistically significant effect on visitor satisfaction and loyalty. The disparity between the results from this randomised factorial experiment and the majority of previous research, with its reliance on observational studies and correlations determined through regression analyses, suggests the need for further collection of experimental data and further consideration of causal effects in protected area research.

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1. Introduction

Parks and protected areas have the dual mandate of nature conservation whilst still being social spaces. Recent research suggests an awareness of the increased possibilities for park-people symbiosis where visitors are seen as an asset rather than a burden (Weaver & Lawton, 2011). With changing political and economic values park agencies across the world and in Australia are in many cases required to become more financially self-sufficient as a result of reduced budgets or greater budgetary constraints (Campbell, 2012; Eagles, 2001; Kaczynski & Crompton, 2004;

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Moore, Rodger, & Taplin, 2013). This has seen a shift in the consideration of visitor management towards a business context, from simply limiting numbers and activities to the consideration of public involvement in park goal-setting, and greater emphasis on maintaining visitor satisfaction and competent financial management (Eagles, 2001). Park managers are now viewing visitors as clients with their needs and wants given greater priority. Financial contributions from visitors are acknowledged as potentially increasing the capacity of park managers to not only provide a service to the public, but also protect the environment (Buckley, 2009; Eagles, 2001).

While visitors were previously monitored in terms of satisfaction, other concepts are now being used to measure and evaluate the experience of the client (visitor). Visitor loyalty is one such concept. In the last decade more studies of loyalty and its antecedents have appeared in the tourism literature (Lee, Graefe, &





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Burns, 2004; Weaver & Lawton, 2011; Moore et al., 2013). Marketing research has progressed from achieving a high level of satisfaction as the ultimate goal to understanding and influencing behavioural intentions (i.e. loyalty behaviours) as a better predictor and measure of performance (Chi & Qu, 2008). Through producing loyal visitors, tourism managers can establish and better defend a market position in the competition for limited resources and money (Eagles, 2001).

Visitor loyalty to protected areas focuses on the commitment of the individual to a park or destination and is often measured by intention to revisit or recommend to others (del Bosque & Martin, 2008). Loyal visitors are important as they can provide on-site support through willingness to pay higher user fees as well as off-site through positive word of mouth, recommending to others, donations and in some cases political advocacy (Hawkins, Lamoureux, & Clemmons, 2005; Lee et al., 2004; Moore et al., 2013; Weaver & Lawton, 2011).

Measuring visitor loyalty remains a challenge and is primarily measured through the behavioural intentions of those who have visited (Moore et al., 2013; Weaver & Lawton, 2011). Previous research refers to both loyalty and behavioural intentions. Here we preferentially use the term loyalty, taking it to encompass intention to revisit and recommend to others, as well as an allegiance more broadly to natural attractions including national parks and protected areas. Pro-environmental behavioural intentions unrelated to protected areas, such as an interest in recycling or water conservation for example, are not included.

To understand loyalty as a construct, structural equation modelling (SEM) has been used in past tourism studies, including studies of parks and protected areas, to statistically test relationships between service quality, satisfaction and loyalty (e.g. del Bosque & Martin, 2008; Wang, Zhang, Gu, & Shen, 2009; Zabkar, Brencic, & Dmitrovic, 2009). Improvements in service quality have been correlated with increased satisfaction and loyalty behaviours, including retention or expansion of tourist numbers, more vociferous and active tourism support, and ultimately enhanced profitability and political support (Zabkar et al., 2009).

In all these studies causality between the constructs has been inferred through correlation and theoretical assumptions. This is standard practice in statistical analyses of observational data and where the design is embedded in theory testing or building (Vaske, 2008). This means that service quality is assumed to be a determinant of satisfaction and behavioural intentions when they are correlated. Experimentally manipulating one or more of the service/facility items and measuring the influence on these dependent variables would be a useful way to test this assumption. Using experimental approaches based on randomized experiments can be used to complement observational studies, which currently dominate leisure, recreation and tourism research. Although randomised experiments are not frequently undertaken in tourism and recreational research undertaking them would contribute to more definitive conclusions about causal relationships between service quality, satisfaction and loyalty (Chi, 2012).

Therefore, the aim of this study was to test the causal relationships and directions between service quality, visitor satisfaction and loyalty using a randomised experimental design. To achieve this the study manipulated the presence and absence of rangers and provision of information in a large national park in northwestern Australia. These two attributes were chosen for this study as they are recognised as adding value to the visitor experience in protected areas as well as being a predictor of visitor satisfaction (Fletcher & Fletcher, 2003; Manning, 2011; Rivera & Croes, 2010). Visitor surveys conducted across the experimental period provided data on the importance and performance of several service attributes as well as overall satisfaction and loyalty, allowing causality to be explicitly investigated. This is one of only a handful of studies to experimentally manipulate service quality in an operational setting. As such, reflections on the methodology and lessons learnt are an important part of this paper's discussion.

### 2. Literature review

This section reviews literature on loyalty and loyalty behaviours including the acknowledged antecedents of service quality and satisfaction and the methodologies used to determine causality. This review incorporates recent research on visitor loyalty at nature based tourism destinations, with an emphasis, where possible, on protected areas such as national parks.

#### 2.1. Loyalty

In its simplest form visitor loyalty is a commitment to a particular destination, place or brand (Baker & Crompton, 2000; Rivera & Croes, 2010). In the last decade there has been an increased number of loyalty studies in protected area tourism research. This is because visitor loyalty is seen as a more accurate predictor of actual behaviour than satisfaction (Chi & Qu, 2008). Research into visitor loyalty to protected areas has focused on how to measure loyalty, the different influences on loyalty, and more recently pro-environmental behaviours (Moore et al., 2013).

For protected area research (and nature based tourism more broadly) loyalty has been largely recognized and measured on the basis of intention to re-visit and recommend to others (Moore et al., 2013; Tian-Cole, Crompton, & Wilson, 2002; Weaver & Lawton, 2011). Behavioural intentions, as derived from the theory of reasoned action (Ajzen & Fishbein, 1980), measure a person's intention to undertake a certain type of behaviour. This theory deems that the intention to perform a behaviour reflects a high level of motivation to actually perform it (Baker & Crompton, 2000; Moore et al., 2013).

The term 'loyalty' is frequently used in protected area research rather than behavioural intentions (e.g. Rivera & Croes, 2010; Weaver & Lawton, 2011). Loyalty is an easy to understand term, and loyal visitors are those who demonstrate commitment to a place or protected area through repeat visitation, recommend others visit or relay positive word of mouth communications (Baker & Crompton, 2000; Zabkar et al., 2009). All of these actions are desirable for park managers due to their positive outcomes. Repeat visitation requires less expenditure than capturing first time visitors. Other positive outcomes of loyal behaviours that are of interest to managers can include enhanced reputation, political support and greater profitability (Baker & Crompton, 2000; Wang et al., 2009; Zabkar et al., 2009). Perhaps the simplest way to understand the relationship between the two is to regard behavioural intentions as a means of measuring visitor loyalty.

Tian-Cole et al. (2002) examined the behavioural intentions of visitors to a wildlife refuge in Texas. Lee et al. (2004) investigated the behavioural intentions of tourists at the Umpqua National Forest in Oregon, while Weaver and Lawton (2011) explored the loyalty of visitors to South Carolina's Francis Beidler Forest. In all cases, the core items measured included intention to revisit and recommending the destination to others. Research has generally found a lower mean for revisiting than recommending, suggesting that intention to revisit may not be a good predictor of loyalty, especially for iconic destinations which may be seen as a 'once in a lifetime' experience (Rivera & Croes, 2010).

Other measurement items for loyalty include willingness to, pay a higher entrance fee, advocate to politicians, volunteer time to protected areas, and donate money to managing the area. These last four intentions require greater commitment and overlap with actions Download English Version:

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