

Long term benefits of visitor monitoring – An Australian experience

Dino Zanon, John Hall, Robin Shaw

Abstract — Parks Victoria manages Victoria's (Australia) national, state and urban parks. These parks make up approximately 17% of the state's area and annually receive 45.3 million visits. Parks Victoria has been dedicated to the development of scientifically sound methods for monitoring visitors and the community since 1994. The three main ongoing monitoring streams are: visit quantities, community perceptions of management and visitor experience (Visitor Satisfaction Monitor). Accumulated research data from the Visitor Satisfaction Monitor (VSM) has been used to profile and refine the organisation's understanding of its various park visitors. After 10 years that data has matured to produce a comprehensive visitor-product market segmentation. Over 11,000 interviews at 34 major parks (including 68 visitor sites) between 2000 and 2004 were used to group park visitors into seven segments. The segments are Nature Admirers, Urban Socials Trail Users, Passives and Other Users, Activity Centrics, Access Made Easy and Country Vacationers. Each park visitor segment, or group, had substantial differences from the other groups, while the individuals within each segment had much more in common; Nature Admirers visit in small groups for a short spectacular scenic experience whereas Urban Socials visit in large groups for half-day social interactions such as birthday parties and picnics. Further analyses have been conducted to identify individual sub-segments within each of the major segments. These sub-segments provide detailed information that can be used for the future development of parks and associated services. Subsequent analysis using Structural Equation Modelling provides evidence that the relationships between services and satisfaction are better understood when considering segments. Parks Victoria has been using segments in park management applications such as wild fire recovery plans, tourism strategy formulation, park management planning and visitor risk management. It has proved to be an efficient and effective systematic way of meeting visitor needs.

Index Terms — Visitor Satisfaction, Visitor Segments, Park Visitors, Structural Equation Model, Park Management Planning.



1 INTRODUCTION

Park organisations worldwide manage a high proportion of their country's natural resources, in trust for their population and under the direction of government. Most park managers do not, however, have a clear understanding of how their organisation and products are perceived by the public, what the public expects of them and how they are performing in relation to the multiple market

segments that the government wants them to serve. The primary goal of managing parks and recreation areas is to provide satisfying experiences to visitors¹, while protecting natural values. In order to achieve this goal objective information regarding park visitor satisfaction and activity preferences is needed to form the basis of sound policy, personnel, budgeting and programming decisions.

Practitioners and researchers agree that the basic purpose of managing outdoor recreation is to provide satisfying experiences to visitors. Many leisure and tourism organisations, including publically funded agencies, struggle to maintain adequate services and facilities within a limited budget. One of the primary objectives of recreation manage-

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ment has become the maximisation of user satisfaction within given financial and operational constraints. This situation has resulted in park and recreation agencies looking for techniques to promote efficiency in service management within tightening budget constraints.

Marketing theory can be applied to enhance management efficiency by improving the match between park services and visitor preferences. Park management has embraced some elements of marketing theory, but it has generally been viewed with scepticism as it is often thought to be synonymous with commercialisation or narrowly focused on capacity management. Marketing theory can be used, however, to identify and characterise different park-user groups. Fundamental to modern marketing is the notion that consumers are heterogeneous, which makes market segmentation virtually always relevant. Heterogeneity exists regarding who visits parks and with what frequency, what is visited, with whom, what is engaged in, and what is valued, amongst many other aspects². This theory has been successfully applied within a number of contexts, including tourism³; leisure⁴; and wine marketing⁵. Park management is yet to apply this marketing theory in a strategic manner. This study seeks to address this limitation through the development of market segments within the context of park management.

2 METHOD

2.1 Participants

The participants in this study were 11,387 visitors to Parks Victoria (Australia) managed parks. Just over half the sample was male (54%) and all participants were aged 18 years and over, with a median age in the 35-39 year category. The majority of the sample was born in Australia (65.4%), followed by the United Kingdom (9.5%) and New Zealand (2.8%). In terms of the highest level of education achieved 7.5% had completed

primary and some secondary school, 29.6% had completed secondary school and 63% had completed a tertiary degree.

2.2 Instrument

The instrument used in this study is from the Visitor Satisfaction Monitor (VSM Parks Victoria, 2000-2004). The VSM has a 69 item questionnaire. Seven items measured visitor demographics, such as age, gender and lifecycle category and three items assessed the weather during the visit. Two questions assessed visit history and eight items assessed characteristics of their visit, such as party size, length of stay, and reasons for visiting. Open ended questions were used to assess how they found out about the park, the main and other reasons for visiting, activities the park does not provide for, how their visit satisfaction could be improved and the most and least positive aspects of the visit. Satisfaction relating to the overall visit and satisfaction with park management was assessed using a 6-point Likert scale ranging from 1 (completely dissatisfied) to 6 (fully satisfied). The likelihood of recommending the park to others was measured using a Likert scale ranging from 1 (would strongly recommend) to 4 (would strongly not recommend). Service Attributes in the park were assessed using five subscales, labelled Park Accessibility (4 items), Ranger Service (3 items), General Management Service (4 items), Recreation Facilities (3 items) and Information, Interpretation & Education (4 items). Each item was rated twice, in terms of what was expected of these services and how well they performed, using a 6-point Likert scale ranging from 1 (agree) to 6 (very strongly agree).

2.3 Procedure

Face to face interviews were conducted at 68 visitor sites in 34 major parks by an independent market research company. The surveys were conducted during summer, spring and winter over four years ranging from 2000-2004.

3 RESULTS

3.1 Segmentation

Prior to conducting the segmentation analysis, a two-stage factor analysis was conducted using the continuous, dichotomous and ordinal variables, to reduce the number of Service Attribute included in the cluster analysis. It should be noted that the main reason for visiting was recoded into five dichotomous variables, so that it could be included in this analysis.

Simple hierarchical clustering, followed by quick K-clustering was conducted using the 12 factors identified in the above analysis. Cluster membership dispersion was examined for 2 to 12 K-cluster solutions and relatively good reduction occurred on the 2, 5 and 7 cluster solutions. The remaining solutions either failed to converge or had inferior membership dispersion. The 7 cluster solution had the lowest dispersion and most differentiation between clusters so was selected as the best solution. Each of the 7 segments was shown to be well differentiated from the other segments and to have strong consistency within the segment.

The segment centres on each factor were examined to determine the distinctive differences between the segments. The factor-items contained in the distinguishing factors were then examined to evaluate which variables contributed most to the differentiation between the segments. These items were checked by cross tabulating the segments with the variables in question.

Finally, all variables were analysed for differences across the seven segments. These differences were found using cross-tabulations between segments and each variable. Continuous variables were compared using t-tests; chi-square tests were used to compare the remaining variables.

A summary of the distinctive characteristics of each segment is presented below:

Nature Admirers (26.1% of the sample). This segment visits for a novel but short vis-

ual experience of nature; especially seeking scenery, plants, animals or cultural attractions.

Urban Socials (25.9% of the sample). They visit typically for a large social gathering with the park serving as a suitably large and recreationally serviced venue for such occasions. Nature is simply serving as the backdrop for the social occasion.

Trail Users (14.4% of the sample). They visit for a variety of trail activities, mostly walking but also cycling or jogging, with the park providing a suitable track or trail.

Passive and Other Users (9.4% of the sample). They visit to relax and unwind in a natural setting or visit for some other activity, which is typically low energy such as sun baking or reading.

Activity Centrics (8.5% of the sample). They visit to undertake specific activities where the park provides a suitable venue to undertake such activity, typically water based and/or high energy such as surfing or rock climbing.

Access Made Easy (8.1% of the sample). Unlike other segments this segment does not visit for any one specific activity; also they differ in that they have lower satisfaction because they encounter more problems related to park accessibility.

Country Vacationers (7.5% of the sample). They like to spend a weekend away or a substantial period of their vacation, staying or camping in National Parks and undertake a wide range of secondary activities.

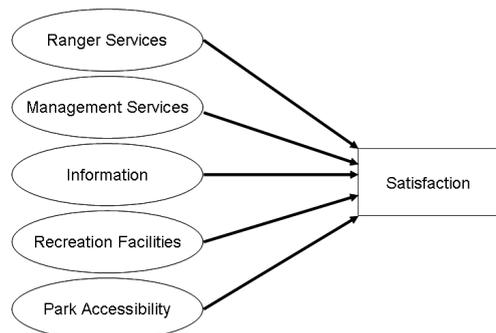


Fig. 1. Model of visitor satisfaction.

3.2 Structural equation modelling

Confirmatory factor analysis (CFA)⁶ was used to extract the items that provided a reliable measure of the constructs under investigation in this study. Structural Equation Modelling (SEM) was used subsequently to analyse the relationships between the constructs of park visitation and visitor satisfaction (see Figure 1).

The model developed and estimated in this study investigates the influence of the various constructs developed from the factor analysis and confirmed in the literature, (i.e. ranger services, information, recreation facilities, park accessibility and management services) relating to overall visitor satisfaction. One-factor congeneric models were developed for each construct. Unsuitable items (i.e. those that had low standardised factor loadings or a low level of explained variance) were removed when the one-factor models were fitted to the full measurement model. The path model's fit indices indicated a good fit of the eight models to the data, (i.e. CMIN/DF<3, significant P value, GFI>.90, AGFI>.90, TLI > .90, CFI > .90, RMSEA<.08). Reliability, convergent and discriminant validity were also identified in the constructs of the models through examination of the correlations of items and constructs and were found to be acceptable.

TABLE 1
SEM OF PARK SEGMENTS

	Variance Total Satisfaction	Ranger Services	Information	Recreation Facilities	Park Accessibility	Management Services
Passive	.30	.10	.08	.24+	.47**	.16
Trail Users	.21	.00	.16*	.07	.25**	.07
Activity Centrics	.32	.03	.03	.13+	.52**	.04
Urban Social	.36	.11*	.03	.53**	.25**	.12+
Access Made Easy	.27	.05	.05	.06	.40**	.12
Country Vacationers	.27	.09	-.03	.22+	.29**	.03
Nature Admirers	.15	.01	.11*	.08	.30**	-.03
Total Sample	.17	.07**	-.01	.18**	.37**	.06*

**Significant .001, *Significant .05, +Significant .01.

It is important to note from the results (see Table 1) of the structural equation modelling that the combination of significant constructs and the relative importance of each vary across the segments e.g.: Passive users (park accessibility .47 and recreation facilities .24), Urban Socials (recreation facilities .53, park accessibility .25, management services .12 and ranger services .11). Furthermore by considering each segment separately, a very different insight is gained of park visitors than which would be achieved by considering the sample as a whole. The value of the segmented approach is also highlighted by the fact that each of the segments except Nature Admirers accounts for more variance than that achieved in the general model.

4 CONCLUSION AND IMPLICATIONS

Park management is a multifaceted problem. Visitor and environmental priorities need to be balanced within increasingly tight budgetary constraints. This has created a need for efficient and effective decision support tools that can assist park managers to administer resources, assess planning decisions, cater for an increased range of users, avoid user conflicts, manage visitor safety risks and minimise negative impacts on the environment.

The segmentation of park visitors shows that different types of parks attract different types of users, who undertake site specific activities, have specific service needs and specific predictors of visit satisfaction. The two biggest user groups highlight this point. Nature Admirers are willing to travel long distances to National Parks where they admire natural or spectacular scenery. They have high expectations relating to General Management and Ranger Services and have high visit satisfaction. In contrast, Urban Socials use urban parks as a venue for a large social gathering. They don't travel far and have high expectations for Recreational Facilities, which are strong predictors for their overall visit satisfaction.

Park managers can use this information to tailor services within their parks to meet their specific market's needs. It has multiple uses including the development of service and infrastructure plans, targeted communication strategies, visitor risk mitigation strategies, and park management plans. Applying this research 'on the ground' is likely to lead to improved visitor experiences and reduced costs for the park management organisation.

An example of one such application is shown in Table 2. It shows part of a procedure developed to manage visitor risk in parks. The table demonstrates how segment groupings can be effectively used to organise visitor risks. The procedure goes on to identify appropriate control actions, e.g. monitor, harden or reduce, for different risks at varying site service levels.

TABLE 2
ASSESSING RISK CONTROLS IN PARKS

Type of Visitor (Market Segment)	Recreation Category	Example of potential risk	Level of Risk Tolerance
Nature Admirer	• Walking / Sight Seeing	• Insect Bite • Tree limb fall • Trip hazard	Low
Urban Social	• Children's Play • Picnicking / Socialising	• Tree limb fall • Trip hazard	Low to Medium
Country Vacationer	• Camping / Accommodation • Four Wheel Driving	• Bushfire • Exposure • Tree limb fall • Trip hazard • Vehicle rolling	Medium to High

Parks Victoria is in the early stages of using the segmentation but it has already been used in a number of park management applications. Similar visitor segmentation is being extended for other venues such as piers and bays. Finally, it is also being extended to evaluate the various sub-segments within each park segment. For example Trail Users includes 5 sub segments: High Speed Melbournians, Regular Melbourne Walkers, Occasional Pleasant Walkers, Cross Country Skiers and Long Distance Bushwalkers.

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