# MONITORING VISITOR SATISFACTION: A COMPARISON OF COMMENT CARDS AND MORE IN-DEPTH SURVEYS

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**Abstract:** This paper compares responses to comment cards and more detailed on-site surveys at selected Corps of Engineers lakes. The results shed light on the validity, reliability, and usefulness of these alternative methods of monitoring customer satisfaction.

## Introduction

Recreation managers often conduct sporadic customer service surveys, which provide a "snapshot" of users' satisfaction levels at a given point in time. From this baseline of information, decisions can be made regarding the management of resources, such as staffing priorities, service provision, facility maintenance and development, and so forth. All federal land managing agencies stepped up their efforts to assess recreational customer satisfaction following the 1993 Presidential Executive Order on Setting Customer Satisfaction Standards.

Recreation satisfaction can be ascertained through many different methods. Mail-back and face-to-face surveys can be expensive, time consuming, and somewhat intrusive to visitors, but offer greater opportunity to understand visitor satisfaction and the factors that may impact a visitor's experience. Comment cards are an inexpensive, quick, and easily interpreted method of gaining information about management issues. A manager can make immediate corrections if a specific issue fails to receive high marks, or conversely, make an on-the-spot award to an employee who is mentioned as extremely helpful, friendly, or courteous. But it is difficult to assess the validity and reliability of comment cards due to the limited amount of data that are typically available.

The purpose of this paper is to compare the results of comment cards and more in-depth customer satisfaction surveys. Data were collected at U.S. Army Corps of Engineers lakes over a four-year period (1995-1998). The Corps began its customer satisfaction measurement initiative in 1995 with unstructured, semi-formal interviews of users at selected lakes. This preliminary research effort was intended to identify what is important to Corps visitors, and how satisfied the visitors were with the same attributes. The following year, various satisfaction items were tested through on-site interviews at two lakes in South Dakota (Burns, Graefe & Thapa, 1997). In 1997, a national customer satisfaction study was undertaken at ten Corps lakes in ten different states across the United States (Graefe, Burns, Titre & Absher, 1999). The following year, a similar study was implemented at three lakes near Huntington, West Virginia (Graefe, Burns, Wickham & Titre, 1999). Concurrent with these onsite studies, comment cards were distributed at selected lakes across the country during the summers of 1996 through 1998.

The analysis focuses on items that are common to both the longer, face-to-face surveys and comment cards used in the respective study areas. Bivariate correlations and multiple regression analyses were used to identify the strongest predictors of overall quality or satisfaction within each study.

**Table 1. Analysis of Corps of Engineers Comment Cards, 1996-1998.**

| Comment card items | Relationship with Overall Quality Rating | | | | | |
|---|---|---|---|---|---|---|
| | Zero-order Correlations | | | Multiple Regression Results (Significant Beta Weights Only) | | |
| | 1998 | 1997 | 1996 | 1998 | 1997 | 1996 |
| Safety and security | .61 | .54 | .47 | | | |
| Park appearance | .69 | .71 | .61 | .21 | .25 | .10 |
| Restroom cleanliness | .65 | .48 | .59 | .18 | | .18 |
| Staff helpfulness | .68 | .52 | .45 | .22 | .16 | |
| Condition of facilities | .78 | .69 | .67 | .18 | .19 | .25 |
| General park information | .68 | .55 | .58 | | | |
| Water safety information | .70 | .55 | .56 | .10 | .14 | |
| Value for fee paid | .72 | .71 | .67 | .26 | .29 | .29 |
| | | | | $R^2$=.77 | $R^2$=.70 | $R^2$=.63 |

## Results

### *Comment Cards*

Corps of Engineers comment cards focused on eight specific site attributes and included an overall rating for the site. All individual comment card items were strongly correlated with the overall quality of area facilities and services (Table 1). Multiple regression analysis shows which combinations of items collectively yield the strongest prediction of overall quality. In all three study years, various combinations of attributes (ranging from four to six items) produced relatively strong models of overall quality ($R^2$ ranged from .63 to .77). Certain items dropped out of the equations because they had nothing new to

contribute beyond what was accounted for by other variables in the regression model.

The best predictors of overall quality (significant contribution all 3 years) include: Park appearance, Condition of facilities, and Value for fee paid. Other good predictors (significant two of three years) were: Restroom cleanliness, Staff helpfulness, and Water safety information. The weakest predictors (not significant any year, although still strongly correlated) included: Safety and security and General park information.

**Table 2. Analysis of Huntington District Lakes survey items (1998)**

| Satisfaction Attributes | Zero-order Correlations | Significant Beta Weights |
|---|---|---|
| Cleanliness of restrooms | .33 | .20 |
| Staff knowledge and ability to answer questions | .23 | |
| Information about commercial services and rec. opportunities in the area | .21 | |
| Value for fee paid | .37 | .23 |
| Appearance and maintenance of the area | .26 | |
| Adequate ranger/assistance patrols | .28 | .13 |
| Roadside signs and directions | .12 | -.13 |
| Information about usage fees for the recreation areas | .20 | -.15 |
| Availability of parking spaces (car parking, boat trailer parking, etc.) | .15 | |
| Staff friendliness/courtesy | .12 | |
| Water safety information | .21 | |
| Ease or convenience of paying the fee | .33 | .17 |
| | | $R^2$=.20 |

***On-site Surveys***

The next study examined satisfaction among visitors to three lakes in the Corps of Engineers Huntington District (East Lynn Lake, Grayson Lake and Beech Fork Lake). In this case, the dependent variable was overall satisfaction with quality of experience at the lake (a 10-point rating scale). Attributes included 12 items representing four domains (facilities, services, information, and fee program). The last domain was a new one incorporated in this study. The items were selected by lake managers in this district.

Prediction of satisfaction was not nearly as strong as for the comment card, mainly because the dependent variable is not measuring the same thing. For the comment cards the dependent variable was an overall rating included at the bottom of the list of specific site attributes. In the case of the on-site surveys, it was a separate question asking for the respondents' overall satisfaction with their experience at the lake. This question is not a direct measure of quality of facilities, services, etc., but rather is focusing on a more subjective measure of overall satisfaction with the experience.

Cleanliness of restrooms and value for fee paid were among the strongest predictors of satisfaction, which is consistent with the comment card results. Adequate ranger patrols and ease of paying the fee were also significant predictors.

The negative beta weights for roadside signs and information about usage fees appear to be an anomaly resulting from the combination of all variables in the regression. The negative sign would imply that overall satisfaction is inversely related to satisfaction with these items, which does not make sense and is opposite of the positive sign for the zero-order correlations for the same items. These coefficients should be interpreted with caution.

Basically, results reinforce the importance of restroom cleanliness and value for fee paid. They do not support the importance of: appearance and maintenance of the area, ability of staff to answer questions, staff friendliness and water safety information.

The final database examined was the 10-lake nationwide Corps of Engineers customer satisfaction study (Graefe et al, 1999). Like the Huntington study, this project involved on-site surveys with visitors at various Corps of Engineers lakes. The list of attributes in this case included 19 items representing the four domains of facilities, services, information, and recreation experience (Table 3). In addition to the 10-point overall satisfaction rating, this survey included separate measures of satisfaction with each of the major domains.

**Table 3. Analysis of Ten-Lakes Customer Satisfaction Items**

| | | Multiple Regression Beta Weights (Significant Values Only) | | |
|---|---|---|---|---|
| | | Dependent Variable | | |
| **Satisfaction Item** | **Zero-order Correlation w/ Satisfaction** | **Domain Specific Quality Rating** | **Overall Satisfaction - Reduced Model** | **Overall Satisfaction - Overall Model** |
| **Facilities Domain** | | | | |
| Appearance and maintenance of the area | .26 | .33 | .17 | .13 |
| Adequate ranger/visitor assistance patrols | .26 | .16 | .16 | .08 |
| Value for fee paid | .19 | .13 | .05 | |
| Sufficient number of ramps/campsites/parking spaces | .21 | .10 | .07 | .05 |
| *Accessibility for persons with disabilities | | | | |
| *This item not included because only 8% of visitors reported some sort of disability (220 of 2933 respondents). | | $R^2$=.30 Quality of Facilities | $R^2$=.11 Facilities Items Only | |
| | | | | |
| **Services Domain** | | | | |
| Safety and security at the recreation area | .22 | .19 | .10 | |
| Opportunity to offer suggestions to staff | .23 | .17 | .05 | |
| Courteous and friendly staff | .20 | .16 | .07 | |
| Availability of staff to answer my questions | .26 | .16 | .13 | .10 |
| Visibility of staff | .25 | .06 | | |
| | | $R^2$=.33 Quality of Services | $R^2$=.09 Services Items Only | |
| **Information Domain** | | | | |
| Current and accurate information | .26 | .30 | .14 | |
| Ease of obtaining information | .23 | .18 | .08 | |
| Water safety information | .22 | .15 | .08 | |
| General information about the area | .21 | .09 | .07 | |
| Nature/historical information about the area | .17 | .06 | | |
| | | $R^2$=.41 Quality of Information | $R^2$=.08 Information Items Only | |
| **Recreation Experience Domain** | | | | |
| Places to recreate without conflict from other visitors | .23 | .25 | .10 | |
| Compatibility of recreation activities at the area | .23 | .25 | .15 | |
| Opportunity to recreate without feeling crowded | .21 | .06 | .06 | |
| Opportunity to recreate without interference from other visitors | .19 | | | |
| | | $R^2$=.24 Quality of Recreation | $R^2$=.07 Experience Items Only | $R^2$=.11 All Items |
| | N=2164 | | | N=2164 |

Table 3 summarizes results of the nationwide study. The 19 satisfaction items were examined in relation to several different dependent variables. The zero-order correlations again demonstrate that all of the items were correlated to satisfaction at relatively similar levels. The correlations were again much smaller than for the comment cards, because the dependent variable (overall satisfaction) is a more global measure. The first column of regression results (domain specific quality rating) shows the extent to which the items within each domain predict a separate measure of **overall quality for that domain**. The second column (overall satisfaction – reduced model) shows how the items **within a domain** collectively predict overall satisfaction, and the final column (overall satisfaction – overall model) reports how **all of the items combined** relate to satisfaction. Taken together, these data may help in selecting items to retain for future survey instruments.

The regression models for the domain specific quality ratings were always much stronger than the ones for overall satisfaction. This is to be expected since the dependent variable is conceptually much more specific relative to the corresponding items. For some of the domains (facilities, information), these regressions show a single item that is clearly the strongest predictor of quality. For facilities, that item is the appearance and maintenance of the area (Beta = .33) and for information it is current and accurate information (Beta = .30). For the services domain, all four items were about the same, and for recreation experience the first two items were much stronger than the last two.

The regression models for overall satisfaction help to distinguish between other items within the domains. For example, in the facilities domain, adequate ranger/visitor assistance patrols contributes more to overall satisfaction than the remaining two items. Likewise, in the services domain, the availability of staff to answer my questions appears to be a stronger item than the remaining items. Conversely, in the information domain, two items (ease of obtaining information and safety information) appear just about equal in predictive power. Choosing between these two items might be done by comparing their relative performance in the other data bases.

The items that are shaded in Table 3 are recommended for inclusion on comment cards and similar instruments. These items showed the strongest influence in the ten lakes study and in many cases showed consistent results with the other databases.

**Conclusion**

Taking the various data sources into consideration, several items can be recommended for further study (Table 4). These items provide a condensed list of attributes that represent the three domains of facilities, services and information. Some of the items may be expressed in several ways, as shown in the "alternate wording" column, while still capturing the intent of the measure. Other items may not clearly represent any single domain, even though they were intended to be part of a certain underlying theme. For example, the last three items, value for fee paid, safety and security at the recreation area, and adequate ranger/visitor assistance patrols, may cut across domains. Evidence presented here suggests that these attributes are important to visitors, even if they do not fall clearly under a single dimension or domain.

**Table 4. Recommended Satisfaction Attributes for Future Studies**

| Item | Alternate wording | Domain |
|---|---|---|
| | | |
| Appearance and maintenance of the area | Park appearance<br>Condition of facilities | Facilities |
| Restroom cleanliness | | Facilities |
| Availability of staff to answer my questions | Staff helpfulness | Services |
| Current and accurate information | | Information |
| Water safety information | | Information |
| Value for fee paid | | No clear domain |
| Safety and security at the recreation area | Safety and security | No clear domain |
| Adequate ranger/visitor assistance patrols | | No clear domain |

No items from the fee program domain (Huntington study) and recreation experience domain (10-lakes study) are included in Table 4. The fee program-related items were included in the Huntington study to accommodate a particular "hot issue" in that district. These items may be appropriate in areas with similar fee-related concerns, but do not belong on a general list of satisfaction attributes for outdoor recreation areas. The experiential items have not been included on the recommended list because this domain probably cannot be adequately measured in a comment card or brief survey format and should be included only in more elaborate customer service instruments.

Two safety-related items (water safety information and safety and security at the recreation area) showed mixed results in the regression analyses. These items are included in the recommended list because of the overall importance of safety in lake management. Further study of such items is needed to identify the role of safety in visitor satisfaction and the conditions under which safety is most critical.

Items listed in Table 4 should be considered a starter list for future customer service studies. Some of the items (e.g. water safety information) are clearly limited to water-based applications, while others may be more generic to any type of recreation area. These items might provide a "short list"

for a comment card application or a "starter list" for a more in depth study.

**References**


Burns, R. C., A. R. Graefe and B. Thapa. (1997a). Customer Satisfaction Analysis at Gavins Point Project. Technical Report submitted to the U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS.

Burns, R. C., A. R. Graefe and B. Thapa. (1997b). Customer Satisfaction Analysis at Fort Randall Project. Technical Report submitted to the U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS.

Graefe, A., R. Burns, J. Titre and J. Absher. (1999). US Army Corps of Engineers Recreational Customer Satisfaction Survey. Eleven-report series submitted to US Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS.

Graefe, A., R. Burns, T. Wickham, and J. Titre. (1999). US Army Corps of Engineers Huntington District 1998 Customer Satisfaction Study. Four-report series submitted to US Army Corps of Engineers, Waterways Experiment Station, Vicksburg, MS.