

MEASURING BIRDWATCHER PREFERENCES THROUGH IMPORTANCE- PERFORMANCE ANALYSIS

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Abstract: The Wings Over Water celebration is an annual event held in October on the coastal and Outer Banks regions of North Carolina. Wings Over Water (WOW) offers educational programs for birders, nature enthusiasts, and wildlife photographers of all ages and skill levels. A mail-back visitor survey was administered to all registered participants by the Department of Recreation & Leisure Studies at East Carolina University. This survey addressed issues relating to personal expenditures, perceptions and satisfaction rankings of various aspects of the event, demographic information, and finally, a comparison of the Wings Over Water celebration with other popular birding events. The primary purpose of this survey was to better understand who is attending this yearly birding event in terms of demographics, skill level and ability, and satisfaction levels of those in attendance. To examine the relationship between WOW specific attributes and personal preferences, an importance-performance analysis was employed. Respondents rated how important a series of individual site attributes were to their decision to visit a specific birding locale. Second, respondents rated the performance of each attribute at the site where they engaged in a WOW program. These ratings were measured on a seven-point Likert scale with a ranking of 1 being not important, 4 being neutral, and 7 being very important. Gap scores between these measures were plotted and analyzed for incongruities between importance preferences and actual performance (site-specific) attributes. Discussion focuses on the relationships between visitor demographic variables and reported importance-performance criteria.

Introduction

This paper is part of a larger study funded by North Carolina Sea Grant under the National Oceanic and Atmospheric Administration. The initial purpose of this study was to document the economic impact, and reported perceptions and satisfaction levels of the birding population visiting Eastern North Carolina. Visitor demographic information was also obtained, as well as comparative information between the overall quality of the Wings Over Water celebration and other popular birding events. The primary focus of this paper is to explore birdwatcher preferences and quantitatively measure these data through importance-performance analysis.

Eastern North Carolina is a popular region for viewing wildlife along the Atlantic Seaboard. A variety of climates and geographical landscapes offer habitat to numerous species of birds, mammals, and marine organisms. Such landscape variations include sandy beaches, pocosins, salt marshes, maritime and inland forests, and blackwater swamps. A combination of local, state, and federal agencies are responsible for the management and administration of the nearly forty wilderness/natural areas within the region.

Birdwatchers are a population segment particularly drawn to North Carolina's coastal and barrier island regions. This area is well known for its nearly 400 avian species of the Atlantic Flyway. Popular species in the area include several types of ibis, heron, and egrets, as well as brown pelicans, snow geese, tundra swans, and red-cockaded woodpeckers.

October is generally a quiet month in Eastern North Carolina relating to recreational and tourism activities. One highly popular event at this time, however, is the Wings over Water (WOW) festival: a celebration of wildlife and wildlands in Eastern North Carolina. With the high volume recreational beach season over for another year, excellent opportunities exist for those interested in nature related recreational activities. WOW offers a variety of environmental programs over a period of six days to participants of all ages and skill levels. Programs range from amateur to serious birding excursions, wildlife photography, blackwater canoeing and sea kayaking, and numerous natural history activities.

The WOW festival is a cooperative event sponsored by several state, federal, and local government agencies, as well as non-profit groups. Headed by North Carolina Sea Grant, additional participating agencies include the National Park Service, United States Fish & Wildlife Service, North Carolina Division of Parks and Recreation, North Carolina Department of Environment and Natural Resources, Outer Banks Chamber of Commerce, the Carolina Bird Club, and the Coastal Wildlife Refuge Society (CWRS). The CWRS is a regional fundraising group for the National Wildlife Refuge system. These agencies contribute to the festival's success by providing staff and volunteers, knowledgeable trip and activity leaders, financial support, and pristine wilderness areas for wildlife viewing, including access to some areas that are normally prohibited.

Review of Literature

Overview

Birdwatching is defined as a nature tourism activity. Scott (1998) defines nature tourism as discretionary travel to natural areas that conserves the environmental, social, and cultural values while generating an economic benefit to the local community. Prominent forms of nature tourism include both consumptive recreational activities such as hunting and fishing, and non-consumptive activities such as camping, hiking, and rock climbing. To qualify as a nature tourist under the aforementioned definition, one must travel a minimum of fifty miles from home to engage in the activity.

There are several societal benefits associated with nature tourism activities. A primary benefit is that participants gain a greater awareness of the values of biodiversity and conservation of natural resources. Participation in birdwatching and other nature tourism activities have also shown to improve the economic and environmental well-being of local communities (Scott, 1999; Vincent & Thompson, 2002). Additionally, public recreational and educational programs foster local and national incentives for successful protection of our natural and wilderness areas (Sekercioglu, 2002).

Birdwatcher Demographic Trends

In 1989 birdwatching was identified as the second-fastest growing recreational pastime in the country (McMath, 1989). Birdwatching is currently

reported as the fastest growing recreational outdoor activity in the United States (Cordell & Herbert, 2002). With the marked surge in birdwatching popularity, it is important that birder demographics, preferences, and behavior patterns are better understood. Overall, birders are a group of people that display high levels of loyalty to their hobby. Through hours of nature interaction and focus, there are many who experience a heightened sense of awareness and greater levels of philosophical thought relating to the natural world (Pieper, 2000; States, 2000).

A primary source of related demographic data is the U.S. Fish and Wildlife Service's National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (U.S. Department of the Interior, 2001). This survey has been conducted approximately every five years since 1955. The survey provides data relating to total participation, economic expenditures, and time spent engaged in fishing, hunting, and other wildlife-associated activities. The survey is the only nation wide study of its kind that provides individual comparative data for all fifty states.

In total, a reported 82 million people over the age of 16 participated in some form of wildlife-associated recreational activity during 2001 in the United States. Of this number, just over 66 million reported participating in some form of wildlife watching activity, which includes animal feeding and photography. Total wildlife associated recreational expenditures totaled \$108 billion which is equivalent to 1.1% of the United States Gross Domestic Product. The wildlife watching segment was responsible for \$38 billion in related expenses. Birdwatchers represent the largest consumer group for binoculars. Currently, birdwatchers are responsible for 30% of total binocular sales (Dolesh & Baicich, 2003). The U.S. Fish and Wildlife Service survey also provides certain comparative information between the 1996 and 2001 survey findings. A total of 31% of the U.S. population reported wildlife watching related activities in 2001. This was a 5% increase since 1996. Although the U.S. has experienced an overall population rise, it still remains a significant increase.

To better understand birdwatcher demographic composition, a study was conducted comparing waterfowl hunters and birdwatchers in Texas

(Adams, Leifester, & Herron, 1997). The research identified certain similarities between the two groups. Both groups must stalk the animals they seek. Related to this, both groups keep trophies whether in the form of a species addition to a bird list or a successful kill. Additionally, both groups have established goals, have the ability to degrade natural habitats if present in large numbers, and are willing to spend considerable amounts of money related to their leisure pursuits. Demographic information revealed the mean age of birders as 56. Approximately 1/3 of birders were over the age of 65. Nearly 100 percent of birders and waterfowl hunters were White. Of the <1 percent of other respondents, none were Black. Over 74% of birders reported having a bachelor's degree or higher level of education, and 53% of birders reported family incomes of >\$50,000 per year (Adams et al, 1997).

While there is certainly a large population of serious birdwatchers, many novice birders also find enjoyment in the activity but do not necessarily view it as a serious leisure activity (Kim, Scott, & Crompton, 1997). This group can be categorized as casual birders. Specifically, a casual birder is one who finds enjoyment in birdwatching related travel and activities, but prefers to combine it with other activities such as shopping, dining, or special events. With the large number of casual birders, the majority of birdwatcher activities occur close to home (Scott, 1999). As a result, local parks and natural areas receive a large portion of birders. Park staff should take every measure to ensure a satisfied birder population. Birders have been reported as some of the greatest park assets: "they don't litter, they report unsafe conditions, and they are some of the best volunteers" (Dolesh & Baicich, 2003, p. 48). Certain park related equipment and materials have been correlated to increased birder satisfaction. Outdoor related items include well-marked, accessible trails, quality signage, observation towers, and observational blinds. Other related items include quality, detailed maps, site-specific bird checklists, and postings of recently sighted species in the area.

Importance-Performance Analysis

Importance-Performance Analysis is an evaluative tool originally created to further develop effective marketing strategies (Martilla & James, 1977). The creators claim that there is a need to take a

two-part approach to customer satisfaction: first, determine what attributes are important to customers, and second, determine how well the agency performs on the same attributes. Several outdoor recreation-related studies have been conducted using Importance-Performance Analysis as a monitoring mechanism to ensure high levels of customer satisfaction (O'Leary, Adams, & Parker, 1981; Guadagnolo, 1985; Hollenhorst, Olson, & Fortney, 1992; Hudson & Shephard, 1998).

Study Methods

Study Area

The WOW festival area is dispersed across several hundred square miles of Eastern North Carolina's mainland and outer banks regions. The festival sites extend from Corolla to Ocracoke Island from north to south, and from Creswell to Cape Hatteras west to east. The National Park Service hosts many activities at locations on Cape Hatteras National Seashore, including the Ocracoke Island Lighthouse, Oregon Inlet, Cape Hatteras Lighthouse, and Bodie Island Lighthouse. The U.S. Fish and Wildlife Service also hosts several activity sites at the Alligator River, Pea Island, and Mattamuskeet National Wildlife Refuges. Under the management of the North Carolina Division of Parks and Recreation, Jockey's Ridge State Park serves as both an activity host site and the festival information and registration center. Additionally, several area schools and community centers were utilized for WOW programs and meeting points. Strategic planning is required on the part of program participants in terms of driving time from site-to-site. Driving time ranges from a few minutes to several hours between activity sites. WOW participants are reminded consistently throughout the festival to plan ahead for the logistical challenges of traveling to the remote wilderness areas in Eastern North Carolina.

Visitor Survey

Data was collected by means of a mailback questionnaire. The surveys were distributed to the participants as part of their registration packet of materials on the day they arrived to the festival (N=141). Following each session, trip leaders would remind participants of the importance of the survey and encouraged them to complete it following their last scheduled activity. Trip leaders also offered to collect any completed surveys before the participants returned home. Several drop-

boxes and collection points were also set up throughout the festival area to assist in survey collection. The surveys were self-addressed for the convenience of the respondents. Several additional mailings were administered to all non-respondents. Using a modified Dillman approach (1978), a total of 63 mailback questionnaires were obtained. This yielded an overall response rate of 44.7 percent.

The survey instrument was composed of several items relating to the WOW festival. Demographic data was collected regarding gender, ethnicity, education, age, and annual household income. Second, an economic impact section attempts to break down total expenditures into specific individual categories. Categories include site specific expenditures such as registration fees, food and beverages, souvenirs, and birding items. Expenditures recorded outside of the festival were also recorded. Items include lodging, food and beverage from grocery stores and restaurants, gifts and souvenirs, and vehicle related items such as fuel, oil, and repairs. Finally, visitors were asked to rank the importance of 32 specific variables relating to their preferences in wildlife based recreation. Variables focused on aspects of nature, travel, hospitality/amenities, and recreational activities. These items were ranked on a seven-point Likert scale with 1 = not important, 4 = neutral, and 7 = very important. Following, participants were asked to report how satisfied they were at the WOW festival region based on the same 32 variables. Again, items were ranked on a seven-point Likert scale with 1 = very dissatisfied, 4 = neutral, and 7 = very satisfied. Gap scores between these measures were plotted and analyzed for incongruities between importance preferences and actual performance (site-specific) attributes. Gap scores were obtained by subtracting the reported performance scores from the importance scores. If the difference was positive, performance fell short of importance. If the difference was negative, performance exceeded importance. If there was no difference, performance was equal to importance.

Study Findings

A profile of the sample population, including age, gender, group size, distance traveled, and first-time visitor status is shown in Table 1. The mean age of the sampled group was roughly 57. Approximately sixteen percent of participants reported ages greater

Table 1. — Visitor Sample Profile

Age	People Surveyed	%
25 or less	2	1.6
26-35	4	3.3
36-45	4	3.3
46-55	40	33.1
56-65	52	42.9
>65	19	15.7
Mean age = 56.77		
Gender	People Surveyed	%
Male	55	44
Female	70	56
Group Size	People Surveyed	%
By Self	9	14.3
2 people	45	71.4
3 people	1	1.6
4 people	5	7.9
5 people	1	1.6
Mean Group Size = 2.08		
Travel Distance in Miles	People Surveyed	%
<100	2	4
100-150	5	9
151-200	9	15
201-250	7	13
251-300	9	15
301-400	7	13
401-500	1	2
>500	16	29
Median Travel Distance = 300 miles		
First Time Visitor	People Surveyed	%
Yes	44	72
No	17	28

than 65. Conversely, only six respondents (4.9%) were under the age of 35. A total of 45 respondents (71.4%) reported traveling in groups of two. Of the groups of two, nearly all were composed of one male and one female. Gender response was nearly proportionate with 44% male and 56% female. It is possible that female response rate was higher due to the high level of male-female groups of two. Many of these couples were likely husband and wife. For these groups, often only one survey was returned and it was completed by the female member. As expected the most popular state of residence was North Carolina (44%). Virginia followed with 21% of responses. Over a third of participants were from states other than North Carolina and Virginia. Other prominent resident states included Pennsylvania, New York, Georgia, and Texas. Median travel

Table 2. — Items of High Importance

Item	Imp	Perf	Gap
Places to view wildlife	6.59	6.63	-0.04
Variety of wildlife to see and/or hear	6.49	6.49	0.00
Clean Air	6.33	6.40	-0.07
Places to go on nature walks	6.12	6.36	-0.24
Friendly and helpful people in the community	5.93	6.25	-0.38
Crime-free communities	5.86	6.19	-0.33
Scenic beauty along the way	5.52	6.05	-0.53
Good restaurants	5.25	5.78	-0.53
Availability of interesting places to visit	5.12	6.04	-0.92
Ease of parking	5.02	5.84	-0.82

Table 3. — Items of Moderate Importance

Item	Imp	Perf	Gap
Places to observe wildflowers	4.98	5.24	-0.26
Close to the water	4.93	6.42	-1.49
Availability of motels	4.92	5.22	-0.30
Availability of nature education programs	4.88	5.81	-0.93
Good roads	4.83	5.53	-0.70
Availability of 24-hour medical facilities	4.68	5.11	-0.43
Quaint small towns	4.53	5.30	-0.77
Driving time	4.47	4.71	-0.24
Places to photograph wildlife	4.41	5.76	-1.35
Availability of historic sites	4.40	5.45	-1.05
Availability of marine life tours	4.22	4.85	-0.63

distance to the WOW festival was 300 miles. The majority of participants (87%) traveled distances farther than 200 miles to visit the WOW festival. Approximately 30% of visitors traveled distances 500 miles or greater. There was a high rate of first-time visitors (72%).

Table 2 identifies items that were reported as highly important by WOW participants (scores > 5). As can be seen from the gap scores, performance (Perf) equaled or exceeded all visitor importance (Imp) rankings. Items of high importance are primarily possessing natural themes, such as places to view wildlife, variety of wildlife, clean air, and places to go on nature walks. Other areas focus on attributes of the host communities, such as friendliness of people, low crime rate, ease of parking, and good restaurants.

Table 4. — Items of Low Importance

Item	Imp	Perf	Gap
Places to canoe and/or kayak	3.86	5.62	-1.76
Availability of local crafts	3.33	4.69	-1.36
Places to shop	3.21	4.84	-1.63
Availability of 24-hour banking	3.04	4.51	-1.47
Availability of bed and breakfasts	2.52	4.15	-1.63
Availability of antique dealers	2.05	4.03	-1.98
Places to go fishing	2.00	4.62	-2.62
Availability of recreational vehicle camping	1.91	4.30	-2.39
Places to golf	1.61	4.22	-2.61
Availability of primitive camping	1.53	4.24	-2.71
Places to go hunting	1.11	3.92	-2.81

Items possessing moderate importance to visitors possess scores ranging from 4.00 -4.99. These items are a mix of educational opportunities (marine life, historic sites), and travel/hospitality related variables (good roads, driving time, quaint small towns, etc.). Certain items also relate again to natural components such as vicinity to water and places to photograph wildlife. Table 3 offers specific scores related to these items. Though the importance of these items was only reported as moderate, the level of performance exceeded importance scores.

Items of low importance range in score from 1.00 to 3.99. Several low importance items relate to shopping, such as places to shop, 24-hour banking, and availability of antique dealers. Other items relate to outdoor recreation, such as places to camp, fish, canoe, kayak, golf and hunt. A summary of low importance items can be observed in table 4.

Several nature/environmental related items were found to possess the highest importance and performance levels of WOW participants. The highest ranking variables on both axes were variety of wildlife, places to view wildlife, and places to go on nature walks. No nature related item possessed a score less than 4 or performed below a score of 5. Figure 1 is a plot of all nature/environmental items under observation.

Travel and amenity related items possess relatively high scores on all variables relating to performance. The only exception is the variable of 24-hour banking availability.

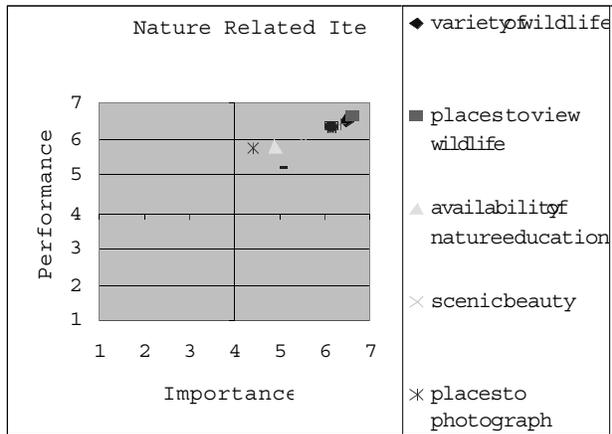


Figure 1. Importance-Performance Plot of Nature Related Items

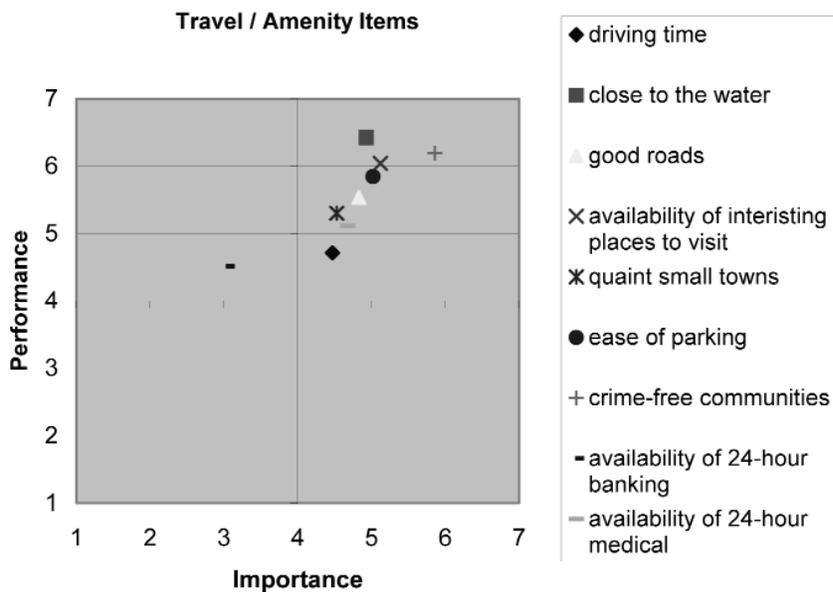


Figure 2. Importance-Performance Plot of Travel/Amenity Items

In regards to importance, all variables received somewhat neutral rankings. These items are plotted below in Figure 2.

Shopping and hospitality items are the first group where low scores are reported relating to importance. Variables relating to antique dealers, bed and breakfasts, local crafts, and places to shop are all neutrally important and perform neutrally as well. Items receiving the highest rankings in this category are friendliness of communities, good restaurants, and availability of motels. These items can be seen in Figure 3.

The final plot (Figure 4) relates to outdoor recreational variables. As shown, these items were reported as least important. The majority of these items performed neutrally as well. The only exceptions, with moderately high performance rankings were places to canoe/kayak, availability of historical sites, and availability of marine life activities. Variables of fishing, hunting, and golf possessed little importance at all to WOW participants.

Conclusions

Overall, WOW birders displayed relatively high satisfaction levels relating to all variables of the

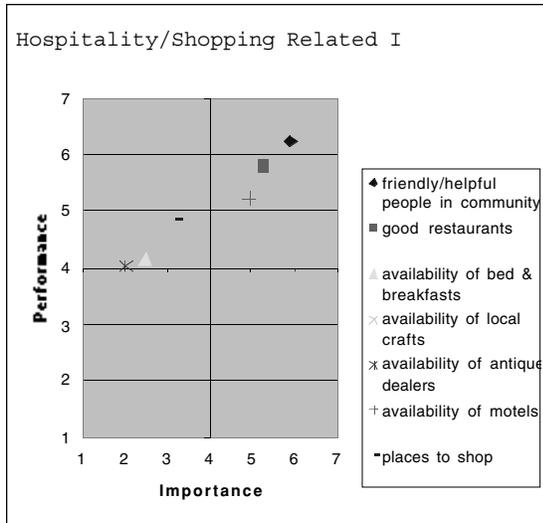


Figure 3. Importance-Performance Plot of Hospitality/Shopping Related Items

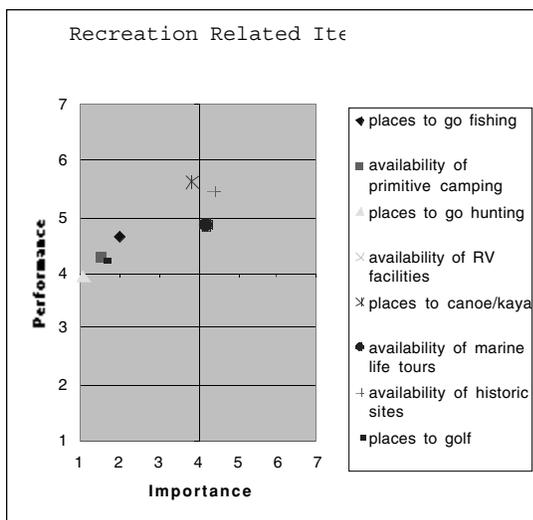


Figure 4. Importance-Performance Plot of Recreation Related Items

importance-performance analysis. The sample population is primarily composed of casual birders, and 96% are classified as non-residential birdwatchers (traveled a minimum of ten miles from their permanent residence to participate). Attributes most important to the WOW birding population related to natural settings, access to restaurants, and safe, friendly communities. Items possessing the least amount of importance to the sampled population were shopping and outdoor activities such as golfing, hunting, and fishing. Birdwatching is generally a non-consumptive, environmentally friendly activity. Perhaps this

population is deterred from more consumptive forms of outdoor recreation. Overall, there is a significant pattern of highly important attributes possessing high performance scores. These performance scores gradually decrease as attributes become less important to the participant.

Implications for Application

Although coastal/outdoor recreational activities were not found to be highly important in this study, they should not be discounted due to the multi-faceted nature of bird and wildlife watchers. The majority of the WOW population (59%) was over the age of 55, which perhaps influenced the preference for specific outdoor recreational activities. It is important for coastal resource managers and recreational service providers to understand the diversity of their potential customers and attempt to cater to the needs of all population segments. Community-specific variables such as friendliness and helpfulness of local citizens, cleanliness, and public safety are of tremendous value in creating satisfaction within the WOW birding community. It is fortunate that the North Carolina Outer Banks region performs highly in visitor satisfaction among the birdwatching community. However, a creative approach should be taken in the frequent changing of programs, outdoor excursions, and session leaders to offer incentives for repeat visitation to the Wings Over Water festival. Several written comments of the survey focused on certain programs being repetitive, or having the same content as previous years. This is a likely explanation for the overall high satisfaction, yet low repeat visitation with 72% of respondents reporting to be first time visitor.

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