Differences among Northwest Minnesota Residents and Non-residents in Willingness to Pay for Regional Recreational Activities

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Abstract

During the 1990's, the United States Department of Agriculture (USDA) conducted the National Private Landowners Survey (NPLOS). The primary goal of the NPLOS was to "obtain data for estimating the amount of private land open for outdoor recreation in the United States and landowner practices and attitudes related to access to their lands for outdoor recreation" (Teasley, Bergstrom, Cordell, Zarnoch, & Gentle, 1999; p. 183). This study was part of a larger project updating information related to private land available for recreational use in northwest Minnesota as well as providing recreational use and agri/ecotourism information, which was not part of the original NPLOS survey. To collect the data, three separate surveys were sent out to northwest Minnesota visitors (n = 266), land owners (n = 48), and hotels/resorts/lodging facilities (n = 31). The purpose of this specific study is to determine recreational activities of interest in northwest Minnesota and the willingness to pay (WTP) for said activities. A series of analyses indicate there was a significant difference between residents of northwest Minnesota and non-residents in their WTP for recreational activities (residents had a higher WTP). Based upon these results, communities in northwest Minnesota should market to residents and non-residents differently.

Learning Objectives

1. Statistical analysis demonstrates different predictors in northwest Minnesota residents' and non-residents' willingness to pay for recreational activities.
2. Results will be helpful to regional communities in identifying different marketing approaches, which is applicable to regions across the United States.
3. The information obtained can help northwest Minnesota communities determine what activities draw visitors to the region.
4. Recreational use results, in conjunction with the other surveys in this project, can help identify if the region's recreational activities meets visitors' needs.

Project Background

According to the Outdoor Industry Association (2017) people in Minnesota spend $16.7 billion ($887 billion, nationally) on outdoor recreation which translates to (National data in parentheses):

- **140,000 (7.6 million) jobs**
- **$4.5 billion($600.9 billion) in wages and salaries**
- **$1.4 billion ($59.2 billion) in state and local tax revenues**

With the amount spent on outdoor recreation, important to assess what opportunities are available and desired within respective states and regions.

- Prevalence of state and national parks vary by states.
- Variety of other methods of outdoor recreation and revenues produced (see different state statistics for outdoor recreation in OIA's 2017 report).

1990's-National survey (NPLOS) assessed private land opened for recreational use (Teasley, et. Al, 1999). Johnson & Walker (2017) revisited NPLOS by sending out 3 surveys as part of an EDA University Center project with the intention of determining the feasibility of opening up more private land for recreational use, and use of agri/ecotourism marketing of lodging facilities.

This information is beneficial for a variety of reasons:

- Determine what resources are used for outdoor recreation (agricultural resources).
- What facilities/resources are available for leveraging w/outdoor recreation (tourism resources).
- What activities do visitors and residents utilize (tourists/visitors).

One model describes how the relationship of these factors and how resources can be leveraged for the benefit of their communities (McClinchey & Carmichael, 2010).

- Agricultural resources, like nature and wildlife resources can be used to attract visitors to a region.
- How these resources are promoted and presented can enhance the visitors' experience.
- Countryside capital refers to rural, agricultural resources available for possible tourism/recreational use (Figure 1).

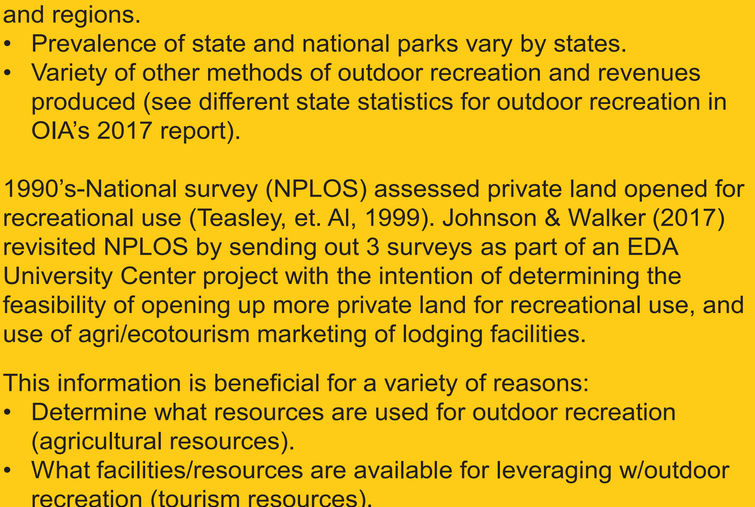

Figure 1: Model for countryside capital assets in an agricultural/tourism region, adapted from Garrod, et. al (2004, 2006), as cited in McClinchey & Carmichael (2010)

Goals of this Research

- Assess what recreational resources are utilized in NW MN.
- Determine the willingness to pay (WTP) for recreational activities in NW MN.
- Determine differences between NW MN residents, U.S. visitors from outside of the NW MN region, and Canadian visitors.
- Determine recommendations for marketing strategies and further leveraging of resources in NW MN.

Recreational Use Survey

- Information collected from NW MN resident and non-resident visitors
  - WTP for recreational activities
  - Types of recreational activities
  - Travel information (length of trip, lodging preferences)
  - Meals/restaurant usage while in area
  - Demographics
- Survey length depended upon responses to certain questions

Recreational Use Respondents

266 total respondents

- **80-NW Minnesota Residents**
  - **73-Polk County**
  - **2-Roseau County**
  - **1-Pennington County**
  - **4-Marshall County**
- **130-U.S. Non-residents (outside of NW Minnesota)**
- **56-Canadian Residents**

Recreational Activities

- Most frequently listed activities utilized in NW MN (top 3)
  - Residents-Fishing, boating, camping
  - Non-residents-Hiking, fishing, camping
- All respondents were given a "bid" for the amount they would be willing to pay for certain activities.
- Respondents could chose to accept the "bid" or increase/decrease the amount they would be willing to pay.
- Table 1 breaks down willingness to pay by residency.

Table 1: Mean Willingness to Pay (WTP) for Various Recreational Activities by NW MN Residents, U.S. Non-residents, and Canadian Residents

Rec. Activity	*M* (NW MN)	*M* (US Non-res.)	*M* (Canadian)
Fishing	$18.00	$8.57	$15.00
Fishing w/guide	$175.00	$5.00	----
Ice Fishing	$27.41	$11.00	----
Boating	$19.96	$4.11	----
Hiking	$5.00	$8.71	$7.22
Camping	$43.96	$24.40	$21.00
Tours	----	$20.00	----
C.C. Skiing	$13.75	$20.00	$15.00
Skiing	$28.75	$46.25	$42.50
Biking	$2.95	$2.35	----
Golf	$35.94	$26.92	$40.00
Kayaking	$9.71	$10.77	----
Canoeing	$10.11	$11.88	----
Swimming	$3.96	$5.09	$0.00
Horseback Riding	$17.00	$23.00	$40.00
Festivals	$18.00	$26.67	$25.00
Local Events	$33.11	$17.86	----
Arts/Culture	$40.00	$0.00	$50.00
Indian Gaming/Casinos	$57.88	$46.50	----
Adventure Parks	$27.50	$17.86	----
Native Amer. Events	$15.00	$0.00	----
Sporting Events	$26.70	$19.44	----
Bird Watching	$6.88	$10.00	$17.50
Hunting	$88.24	$15.00	$0.00
ATV Riding	$7.40	$7.11	----
Snowmobiling	$12.94	$30.59	----
Other Activities	$6.67	$10.00	$15.00

Methodology

- U.S. NW MN non-residents and Canadian residents were not significantly different from one another
  - Combined in analysis
- Use Choice Wave probabilistic demand analysis
  - Orthogonality of residents & non-residents
- Only respondents with a WTP > 0 were included in analysis
  - Avg. WTP was used as DV
- Resident and non-resident regression predictors:
  - Age
  - Married (0=not married, 1=married)
  - Household size
  - INC_AVG_1000 (avg. income in thousands of US$)
  - Warm (binary; 1 if preferred recreation during summer)
  - Hotel (binary; 1 if preferred hotels, resorts, other)
  - EDUC_YEARS # of years of education
- Regression predictors unique to residents:
  - TOTAL_TRAVEL_HOURS (# of hours willing to travel-day trips)
  - TOTAL_ON_TRAVEL_HOURS (# of hours willing to travel-overnight trips
  - RES_VAC (binary; 1 for participation in NW MN recreational activities)
- Regression predictors unique to non-residents:
  - LONG_SHORT (binary; 1 if preferred long or extended vacations in NW MN)

Results of Recreational Use Analysis

- NW MN residents and non-residents were significantly different from one another.
  - Table 2-resident regression model
  - Table 3-non-resident regression model

Table 2: Resident Regression Results Using Average WTP

	Coef.	*SE*	Wald X^2	$P > X^2$
Intercept	2.399	0.149	258.557	<0.0001
Age	-0.045	0.016	8.202	0.004
Married	-0.234	0.103	5.162	0.023
Male	-0.177	0.067	6.912	0.009
Household Size	-0.008	0.028	0.073	NS
INC_AVG_1000	0.008	0.001	38.937	<0.0001
Warm	-0.246	0.088	7.758	0.005
Hotel	-0.648	0.085	58.850	<0.0001
EDUC_YEARS	0.142	0.017	68.355	<0.0001
TOTAL_TRAVEL_HOURS	0.043	0.014	8.802	0.003
TOTAL_ON_TRAVEL_HOURS	0.015	0.007	4.158	0.041
RES_VAC	0.215	0.074	8.391	0.004

Note: Cox & Snell R^2 = 1.00

Table 3: Non-Resident Regression Results Using Average WTP

	Coef.	*SE*	Wald X^2	$P > X^2$
Intercept	3.144	0.122	665.224	<0.0001
Age	0.050	0.010	24.048	<0.0001
Male	0.335	0.065	26.140	<0.0001
Warm	-0.293	0.059	24.567	<0.0001
LONG_SHORT	0.092	0.059	2.396	NS
EDUC_YEARS	-0.076	0.014	28.557	<0.0001
INC_AVG_1000	0.006	0.001	50.879	<0.0001
Hotel	-0.132	0.071	3.504	<0.0001
Married	-0.125	0.079	2.511	NS
Household Size	-0.113	0.021	28.379	<0.0001

Note: Cox & Snell R^2 = .991

Discussion

- Non-resident American and Canadian visitors are not significantly different from one another.
- However, NW MN residents are statistically significant from all non-residents.
- Residents who were younger, single, female, have higher income, visit during cooler weather, stay @ campsites/RV parks (and similar facilities), more education, have participated in recreational activities in the region, and travel long to their destination (both day and overnight trips) demonstrated a higher WTP.
- Non-residents who were older, male, visit during cooler weather, less education, have higher income, stay @ campsites/RV parks (and similar facilities), and smaller households demonstrated a higher WTP.

Implications

- For strategic planning and policy purposes, residents and non-residents of NW MN should be treated differently.
  - Aggressively market recreational activities with higher interest in residents and non-residents.
  - Increase interest in activities in low or 0 WTP.
- Demonstrated growth opportunities for non-residents in NW MN
  - ↑ # of non-resident visitors and length (or #) of visits
  - Include cross promotion w/hotels & other facilities (approx. 60% of residents & 70% of non-residents indicated they would participate in ecotourism and agritourism if available through lodging).
- Further study should examine recreational activity differences across all regions of MN.
  - Could include site-specific usage (e.g., state and national park sites, etc).
- Further study should also examine recreational activity availability in the context of the previously mentioned countryside capital model.

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