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Community Scale and Resident Attitudes towards Tourism

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Abstract. Given that the costs and benefits of tourism are not uniformly distributed across space, knowledge of how residents perceive tourism both within their own community and from a broader regional perspective is needed to inform tourism-based economic development plans. This study explores the role of physical distance from tourism on resident attitudes, where support for the development of tourism within a person's town of residence is compared to support for tourism development at the county level. Differences were found across these "community scales" with residents indicating less support for tourism at the, more intimate, town level. To explore this variation, ordered logit regression models identified factors influencing attitudes at the town and county levels.

1. Introduction

Recent decades have brought considerable change to the economic landscape of rural areas in the United States. In many places, the decline of traditional extraction-based industries has led to the disappearance of jobs, and the corresponding depopulation has threatened the very survival of some communities. Meanwhile, simultaneous migrations to urban centers and changes in recreational preferences have increased demand for nature- and cultural-based tourism opportunities (Allen et al., 1988; Deller et al., 2001; Gartner, 2005). The combination of the need for economic development in affected rural areas and rising demands for recreational amenities has made tourism a popular economic development option for planners looking to revitalize the economies of many rural communities (Allen et al., 1998; Harrill, 2004; Gartner, 2005).

When considering any form of economic development, local officials are faced with the challenge of balancing complex social, economic, political, and demographic considerations (Ayres and Potter, 1989). This is especially true for tourism (Marcouiller, 1997). By its very nature, tourism involves the intrusion of visitors into host communities beyond any marketplace setting and into the everyday lives of residents. A result of tourism's effects on residents is the implication that plans for economic growth through tourism need to accommodate resident concerns and attitudes.

This task is complicated, however, by differences in support for tourism among community members. Not only is the amount of tourist-resident interaction likely to vary greatly across individuals, but the circumstances of each interaction are also likely to differ. Consequently, resident attitudes towards tourism, expected to be influenced by perceptions of its net benefits, are likely to vary among residents within host communities according to the amount and type of interaction that residents have with tourists. Understanding how these differences manifest themselves has been the motivation for an extensive literature on resident attitudes regarding tourism (Harrill, 2004).

Focusing on how tourism is perceived by residents, this literature has identified demographics, community attachment, economic dependence, and physical distance from tourism as factors influencing attitudes (Harrill, 2004). Typically, physical distance from tourism has been measured by segmenting study areas into regional, town, or neighborhood units and then comparing attitudes across these units according to their distance from concentrations of tourists (Pizam, 1978; Tyrell and Spaulding, 1984; Korca, 1998; Harrill and Potts, 2003). The research presented in this study offers a complementary approach for examining the effects of physical distance on attitudes. Along with segmenting the study area, our analysis considers tourism in a framework where attitudes are examined

at the county and town "community scales." Given that people consider their location relative to tourism when formulating their attitudes, the community scale at which tourism is framed is likely to affect resident attitudes.

The purpose of analyzing attitudes in such a manner is motivated by an acknowledgment of the uneven distribution of tourism's benefits and costs. Given a desire to capture the benefits of tourism, local residents outside of the immediate area may venture into tourist centers to recreate or partake of services provided for tourists. Thus, residents living outside – but close to – tourism centers might perceive benefits associated with tourism. On the other hand, the costs of tourism such as crowding and noise should be more apparent within the primary tourist area. Considering these effects, the perception of tourism's benefits and costs are likely to be unevenly distributed throughout a region. As such, community scale is proposed as a means of investigating resident attitudes towards tourism through a comparison of support at the town and county levels.

2. Literature Review

Modern tourism research has evolved into a systematic review of costs and benefits, attempting to balance tourism's mostly economic benefits with its mostly social costs (Jafari, 1986; Andereck, 2000). The literature spans a number of social science fields including sociology, rural planning, and economics (Harrill, 2004). Central to the development of this approach was the establishment of theory describing resident attitudes towards tourism. Early work by Doxey (1975) and Butler (1980) explains the evolution of resident attitudes as a function of an implied maximum sustainable amount of tourism in host communities. These studies describe an evolution of attitudes where initial delight associated with economic growth eventually turns to indifference and antagonism as the concentration of tourists increases. This implies a maximum sustainable level of tourism, which Cooke (1982) examines through the idea of a social or psychological carrying capacity. Such a phenomenon leads to diminishing returns in resident utility with the number of tourists.

Both the concepts of resident carrying capacity and a maximum level of sustainable tourism are presented as relative rather than precise points that vary across communities, individuals, and through time. These concepts set the stage for empirical investigations seeking to determine the "optimal" level of tourism for different communities and to identify which factors influence community support for tourism. In examining differences in attitudes among residents, empirical analyses have commonly examined demographics, community attachment, as well as the roles of economic and physical distance from tourism.

Few consistent links have been found between demographic variables and support for tourism (Harrill, 2004). In general, the literature suggests that demographics play a minor and sometimes contradictory role in explaining variation in residents' attitudes towards tourism (Perdue et al., 1990). The same can be said for community attachment. Although a somewhat ambiguous concept, community attachment has been measured by ethnic characteristics, community involvement, birthplace, age, and length of residence (Liu and Var, 1986; Um and Crompton, 1987; Allen et al., 1993; McCool and Martin, 1994; Williams et al., 1995; Harrill and Potts, 2003). Meanwhile, economic dependence on tourism has been found to have a positive and significant effect on resident attitudes, where those standing to gain more financially from tourism tend to have more positive attitudes towards tourism (Harrill, 2004).

Physical distance from tourism, typically examined by contrasting attitudes among counties, towns, or neighborhoods within the same region, has been found to influence resident attitudes towards tourism. People living closer to tourist centers (shorter physical distance) have been found to hold more negative perception of tourism (Harrill, 2004). Research covering a variety of study areas has identified this relationship as stemming from the spatial distribution of tourism's benefits and costs (Pizam, 1978; Belisle and Hoy, 1980; Tyrell and Spaulding, 1983; Korca, 1998; Gursoy and Jurkowski, 2002; Harrill and Potts, 2003).

Harrill and Potts (2003) suggest that resident attitudes are a partial function of both economic dependence and spatial location, where people living in tourist centers but who do not depend economically on local visitors are the most likely to hold negative attitudes. While this may apply to smaller geographic areas, such as within a city, as study areas become increasingly large the physical location relative to tourism may play a more dominant role. For example, when considering tourism within a large county, certain sites host more tourists than others and, depending on resident location relative to these sites, resident perceptions of tourism-generated benefits and costs likely vary. Complexities such as these in the distribution of tourism's benefits and costs are the motivation for this research, which seeks to contribute to existing research by examining resident support for tourism at two community scales.

3. Study site and survey

The empirical analysis uses data from a survey of people living in Piscataquis County, Maine. Long known as "Vacationland," the Governor of Maine has identified tourism along with the creative economy as two target areas for economic growth within the state. In particular, tourism stands to offer benefits to Maine's more rural northern counties such as Piscataquis County.

Piscataquis County is the second largest county in Maine in terms of land area, yet it is the smallest in terms of population (17,634 residents in 2000).[1] The flight of traditional, primarily timber-based, industries over the past several decades has left the county struggling with declining job opportunities and has led to depopulation in some towns. Being home to many outdoor recreation amenities, however, Piscataquis County is well-situated for tourism development. Attractions include Moosehead Lake (the state's largest lake), Baxter State Park (home of Mt. Katahdin, the state's highest peak and a terminus of the Appalachian Trail), and the Allagash Wilderness River. The tourism industry is already developed in the Greenville/Moosehead Lake area while it is still in its relative infancy in the rest of the county.

A survey of Piscataquis County residents was conducted in 2004 to collect information on rural resident attitudes regarding tourism development. The survey was distributed to a random sample of registered voters in the four largest towns in the county (Brownville, Dover-Foxcroft, Greenville, and Milo). Questions were modeled after templates created by the University of Minnesota Institute of Tourism and Recreation Research. A total of 1,071 surveys were mailed to selected residents with a stamped return envelope. Two-hundred and thirty-five addresses were determined to be undeliverable and another 18 were returned indicating that the respondent either had moved or was deceased. This left a final sample of 818 surveys successfully delivered and followed by a reminder postcard. Of those, 377 (46.09 percent) were returned and sufficiently completed to be included in the analysis. Compared to 2000 census data, survey respondents were older, more educated, and more likely to be female.

4. Empirical framework

Whether explicitly stated or inferred, residents likely consider their physical location relative to proposed tourism when formulating their attitudes towards tourism and balancing its benefits and costs. In this work, community scale (i.e., county, town) is presented as a means of examining the relationship between an individual's likely interaction with visitors and resident attitudes towards tourism. To do so, this analysis focuses on two attitudinal questions asked at different community scales.

The first of these questions asked residents "How important is tourism to the future of Piscataquis County?" with possible responses "Not Important," "Somewhat Important," "Important," and "Very Important." With this question, little balancing of benefits and costs is thought to be implicated due to the large land area considered (see footnote 1) and the assumption that tourism's benefits spill over out of tourist centers to a greater extent than its costs. As such, responses to this question are interpreted more as an acknowledgement of tourism's benefits than a careful balancing of tourism's benefits and costs.

For comparison with attitudes at the county scale, a second attitudinal question asked respondents to indicate whether they wanted their town of residence to become a major tourist destination, a minor tourist destination, or not a tourist destination at all. This question, addressing tourism at a more intimate community scale, is thought to impose a greater degree of contact with tourists, which would direct respondents to undertake a more careful personal balancing of tourism's benefits and costs.

By describing initial states of contentment with tourism that diminish into resentment and antagonism with an increase in the number of visitors, Doxey (1974) and Butler (1980) implicitly describe a maximum level of tourism that is sustainable within a community. This idea was investigated more explicitly by Cooke (1982). The concept of a maximum sustainable level of tourism set the stage for empirical studies to investigate where it might exist for residents of different communities and attempt to discover the factors that influence tolerance/intolerance to tourism. Statistical methods commonly employed in the resident attitudes towards tourism literature include descriptive statistics, analysis of variance, factor analysis, regression analysis and contingency analysis (Jakus and Siegel, 1996). When using data generated by attitudinal surveys, ordered discrete choice regression models are often an appropriate estimator (Greene, 1992).

Resident attitudes towards tourism can be examined using this modeling framework where each individual's response can be expressed in terms of an unobservable latent variable y_i^* for the community scale j, such that

[1] At 4,377 square miles, Piscataquis County is one of the largest counties east of the Mississippi and is roughly the size of Rhode Island.

$$y_{ij}^* = \beta x_i + \varepsilon_i \quad (1)$$

where y_{ij}^* represents the net change in resident utility with tourism, x_i is a vector of exogenous variables thought to explain respondents' perceived utility derived/extracted from tourism, β is a vector of unknown parameters describing the relationship between x_i and y_{ij}^*, and the random variable ε_i is an unobserved disturbance term that accounts for differences in utility not controlled for by the explanatory variables.

While y_{ij}^* is unobservable, the categories delimiting y_{ij}^* in terms of resident utility, y_{ij}, are observed. To illustrate, consider the following question with three responses: "Would you like for your town to become a major tourist destination, a minor tourist destination, or not a tourist destination?" Those who perceive a net utility gain from tourism in their town would indicate that they would like for their town to become a primary tourist destination. Those who see tourism as having a relatively neutral effect on utility would indicate minor tourist destination, and those perceiving a net loss in utility would indicate that they would not like their town to become a tourist destination. Delineating these choices are the thresholds 0 and μ.

Intuitively, the thresholds represent locations in the respondent's decision function where they are indifferent between the two neighboring responses. To illustrate, consider the responses at the town community scale where 2 = major tourist destination, 1 = minor tourist destination and 0 = not a tourist destination. The three possible responses imply two thresholds in the respondent's decision function. The threshold 0 represents the location where the average respondent is indifferent between the responses minor tourist destination and not a tourist destination and the threshold μ is the location where the average respondent is indifferent between the major and minor tourist destination responses. As such we can write each individual's response, y_i, in terms of y* as follows:

$$y_{ij} = 0 \text{ if } y_{ij}^* \leq 0 \quad (2)$$

$$y_{ij} = 1 \text{ if } 0 < y_{ij}^* \leq \mu \quad (3)$$

$$y_{ij} = 2 \text{ if } \mu < y_{ij}^* \quad (4)$$

Correspondingly, questions involving more than three responses can be generalized to the case of m categories delimited by m-2 thresholds.

Continuing with the above example, the probability of a given response being observed is:

$$\text{Prob}(y=0) = F(-\beta'x) = 1/(1+\exp(-\beta'x)) \quad (5)$$

$$\text{Prob}(y=1) = F(\mu-\beta'x) - F(-\beta'x) = 1/(1+\exp(\mu-\beta'x) - 1/(1+\exp(-\beta'x)) \quad (6)$$

$$\text{Prob}(y=2) = 1-F(\mu-\beta'x) = 1 - 1/(1+\exp(\mu-\beta'x)) \quad (7)$$

The replication of these probabilities through maximum likelihood estimation derives estimates for β and μ. $F(\bullet)$ is the transformation associated with the assumed underlying cumulative distribution of ε. In this analysis, ε is assumed to have a logistic distribution and the equations in rightmost side above show the probabilities expressed in terms of the cumulative logistic distribution. The logistic distribution is similar to the standard normal distribution assumed by Jakus and Siegel (1997) in their analysis of tourism in Appalachia.

Regardless of the distribution assumed for ε and the selection of the corresponding model, little can be directly interpreted from coefficient estimates (Greene, 1992).[2] Rather, marginal effects, or the change in the probability of a response being observed with a change in an explanatory variable, are derived as follows:

$$\partial\text{Prob}(y=0)/\partial x = - f(\beta'x) \quad (8)$$

$$\partial\text{Prob}(y=1)/\partial x = [f(-\beta'x) - f(\mu-\beta'x)]\beta \quad (9)$$

$$\partial\text{Prob}(y=2)/\partial x = f(\mu-\beta'x)\beta \quad (10)$$

These marginal effects, where f is the probability distribution function for the assumed underlying distribution of ε, explain the predicted change in probability for a one-unit change in an explanatory variable for each response category. For the logistic distribution

$$f = 1/(1+\exp(\beta'x)[1 - 1/(1+\exp(\beta'x)]\beta \quad (11)$$

Since marginal effects are expressed in terms of probabilities that sum to 1.0, a shift in one of the explanatory variables that enacts a shift in the probabilities for response categories implies a corresponding change in the other categories. For example, if being a resident of Brownville was found to have a negative effect on the probability for response category 2 from above, then there must be a corresponding positive marginal effect for response category 0 or for both categories 1 and 0.

[2] The sign of the coefficients are the only aspect of the coefficient that can be directly interpreted. When cumulating over higher valued responses, a positive signed coefficient indicates a positive marginal effect for the highest category and a negative marginal effect for the lowest category. The signs for the middle categories remain ambiguous without calculation of marginal effects.

Explanatory factors thought to explain differences in resident attitudes are largely derived from the literature. These factors include demographics, community attachment, town of residence, and recreation preferences. The names, definitions, and means values for the variables representing these factors appear in Table 1, with expected effects presented in Table 2.

Table 1. Explanatory variable names, definitions, and descriptive statistics

Explanatory Factors	Variables	Definitions	Mean Values
Town of Residence	Brown	=1 if the respondent lives in Brownville. =0 otherwise.	0.117
	Dover	=1 if the respondent lives in Dover-Foxcroft. =0 otherwise.	0.448
	Milo	=1 if the respondent lives in Milo. =0 otherwise.	0.249
Community Attachment	ln Pisc	Natural log of the number of years in Piscataquis County.	3.247
Demographics	Female	1=female. 0=male.	0.602
	Child	=1 if the respondent has children. =0 otherwise.	0.249
	High School	=1 if the highest level of education is at least high school diploma and less than a 4-year degree. =0 otherwise.	0.706
	College	=1 if the highest level of education achieved is at least a 4-year degree. =0 otherwise.	0.228
	Inc Low	=1 for those earning between $15K and $35K. =0 otherwise.	0.271
	Inc Mid	=1 for those earning between $35K and $75K. =0 otherwise.	0.345
	Inc High	=1 for those earning more than $75K. =0 otherwise.	0.119
	Small_land	=1 for those possessing less than 10 acres of land. =0 otherwise.	0.244
	Big_land	=1 for those possessing more than 10 acres of land. =0 otherwise.	0.506
	Working	=1 if full or part time worker. =0 otherwise.	0.326
	Retired	=1 if retired. =0 otherwise.	0.355
Outdoor Recreation	Snowmobile	=1 for those who enjoy snowmobiling. =0 otherwise.	0.212
	ATV	=1 for those who enjoy ATVing. =0 otherwise.	0.334
	Motor Boat	=1 for those who enjoy motor boating. =0 otherwise.	0.517
	Fish	=1 for those who enjoy fishing. =0 otherwise.	0.377
	Hunt	=1 for those who enjoy hunting. =0 otherwise.	0.411
	Bird	=1 for those who enjoy bird watching. =0 otherwise.	0.586
Cultural Recreation	Live Music	=1 for those who enjoy live music. =0 otherwise.	0.780
	Parade	=1 for those who enjoy parades. =0 otherwise.	0.324
	Sport Events	=1 for those who enjoy sporting events. =0 otherwise.	0.244

Note: Both outdoor and cultural recreation variables were selected to include with the highest participation rates (more than 20% of respondents) and which address a variety of recreation types (motorized vs. non-motorized, solitary vs. social).

Table 2. Expected signs for explanatory variables

Explanatory Factor	Variable	Expected Sign	References
Town of Residence	Brownville	+/-	N/A
	Dover-Foxcroft	+/-	N/A
	Milo	+/-	N/A
Community Attachment	ln Pisc	+/-	Harrill and Potts, 2003; Williams et al., 1995; McCool and Martin, 1994; Allen et al., 1993; Um and Crompton, 1987; Liu and Var, 1986
Demographics	Female	-	Harrill and Potts, 2003; Mason and Cheyne, 2000
	Child	+/-	N/A
	High School	+	N/A
	College	+	
	Inc Low	+	Harrill and Potts, 2003; Jakus and Siegel, 1996
	Inc Mid	+	
	Inc High	+	
	Small Land	+/-	N/A
	Big Land	+	
	Working	+	Martin et al., 1998; Haukeland, 1984; Tyrell and Spaulding, 1984; Pizam, 1978
	Retired	-	
Outdoor Recreation	Snowmobile	+/-	N/A
	ATV	+/-	
	Motor Boat	+/-	
	Fish	-	
	Hunt	-	
	Bird	-	
Cultural Recreation	Live Music	+	N/A
	Parade	+	
	Sport Events	+	

Almost universally, demographics have been considered as factors in empirical analyses of resident attitudes towards tourism. While able to explain some of the variation in attitudes (Harrill, 2004), the effects of some personal characteristics have been found to be inconsistent across study areas (Perdue et al., 1990). For example, with respect to age and work status it has been found that older/retired residents are more supportive (Cavus and Tanrisevdi, 2002), as supportive (Tomljenovic and Faulkner, 1999), and less supportive (Martin et al., 1998) than other residents in the research areas for their respective studies. Mixed results such as these have been found for other demographic factors including community attachment and ethnicity (Harrill, 2004).

It is suspected that the particulars of individual study areas are responsible for some of this variation. These differences are a motivation for the analysis presented in this research, where differences in the effect of demographic factors may also vary across communities scale within the same study region. Any differences detected could be used to inform theory regarding how tourism is perceived in space by residents. To capture any effects that demographics might have in Piscataquis County, variables controlling for gender, income, work status, and education are included.[3] Community attachment is measured using the natural log of years lived in Piscataquis County.

One factor that has been found to be consistent in direction of effect on resident attitudes towards tourism is economic dependence. As self interest should dictate, residents with closer ties to tourism and more to gain from tourism are more likely to be supportive of the its development. Unfortunately, specific questions regarding the employment of residents were not included on the survey and therefore the effects of dependence on tourism could not be explicitly analyzed. Nonetheless, certain demographic variables (income, land ownership, and work status) are thought to infer possible involvement in the tourism sector. For instance, those with higher incomes and more land should be in a better position to benefit financially

[3] Correlation tests under continuous and categorical specifications reveal that income and education are not strongly collinear, indicating that both variables should be examined.

from tourism. Additionally, residents active in the work force are also more likely to benefit financially than those who do not work due to increased opportunity for employment and more competitive labor markets. Therefore, while not being able to address employment directly is a weakness of this study, it remains possible to inform discussion regarding economic dependence on tourism indirectly through inferences about resident income, land ownership, and work status.

Less commonly addressed in the literature on resident attitudes towards tourism, recreational preferences are considered in this analysis. Given the high rates of participation in outdoor recreation activities (see mean values in Table 1) and the sensitivity of some outdoor activities to noise and crowding (e.g. hunting), residents may perceive tourism as a threat to their enjoyment of certain activities. Such a result was found by Gursoy and Jurkowski (2002) and is the motivation for the consideration of outdoor recreation preferences. In addition, a set of variables capturing cultural recreation preferences is included. While the development of tourism may be detrimental to some nature-based forms of outdoor recreation, it is likely to generate and support some forms of cultural recreation such as live music. To describe the influence of outdoor and cultural recreational preferences, only those activities enjoyed by more than 20 percent of respondents are included in the ordered logit analysis.

Finally, the inclusion of a set of dummy variables for town of residence resembles the traditional, segmented, approach for the determination of the effect of physical distance from tourism on resident attitudes. With only Greenville having a substantial existing tourism industry, differences in the results among towns coupled with their locations relative to Greenville allow for inference regarding the effect of physical distance on resident attitudes.

5. Empirical findings

Response frequencies for the two attitudinal questions at each of the community scales are presented in Tables 3 and 4. With 74.01 percent viewing tourism as at least important to the county's future and 38.99 percent wanting their town to become a major tourist destination, it can be said that residents are supportive of tourism at both community scales. It is noted that residents were much more likely to be opposed to tourism at the town community scale.[4]

Table 3. Response frequencies: importance of tourism to county future (n = 377)

	Not Important	Somewhat Important	Important	Very Important
Percentage	5.04%	20.95%	36.34%	37.67%
Count	19	79	137	142

Table 4. Response frequencies: desired tourism in respondent towns (n = 377)

	Not a Tourist Destination	Minor Tourist Destination	Major Tourist Destination
Percentage	14.59%	46.42%	38.99%
Count	55	175	147

While direct comparison between the two attitudes is not possible due to differences in their nature and the number of response categories, the fact that only 5.04 percent of residents indicated that tourism was not important to the county's future, while 14.59 percent indicated that they did not want their town to become a tourist destination at all, should represent a noteworthy difference in perceptions of tourism across community scales. Interpreting importance to the county responses as a general acknowledgement of benefits from tourism and responses at the town community scale as a more careful balancing of tourism's benefits and costs, it can be inferred that costs are indeed more of a concern at a more intimate community scale. Such a result may indicate that tourism is a NIMBY-type (not in my backyard) phenomenon.

Maximum likelihood estimates for the coefficients, marginal effects, and thresholds from the ordered logit

[4] Responses considered negative with respect to tourism are "Not Important" at the county scale and "Not a destination at all" at the town scale.

regressions for the county and town community scales are presented in Tables 5 and 6. Results from log likelihood, likelihood ratio, and chi square tests indicate that both models are highly globally significant. Discussion focuses on the marginal effects of variables with coefficients significant at the 0.10 level.

Table 5. Ordered logit results: importance of tourism to the future of Piscataquis County (n=377)

	Coefficient	Marginal Effects			
Variable	(b / S.E.)	Not Important (Y=0)	Somewhat Impt. (Y=1)	Important (Y=2)	Very Important (Y=3)
Intercept	3.6037***	----	----	----	----
	(5.093)				
Brownville	-0.8905**	0.0432***	0.1404***	-0.0045	-0.1791
	(-2.158)	(47.339)	(17.180)	(-0.030)	(-0.836)
Dover-Foxcroft	-1.4062***	0.0556***	0.2003***	0.0507	-0.3067
	(-4.510)	(13.728)	(71.897)	(0.237)	(-1.316)
Milo	-1.7130***	0.0953***	0.2605***	-0.0295	-0.3263
	(-4.966)	(12.564)	(3562.742)	(-0.112)	(-1.238)
ln Pisc	-0.3103	0.0105***	0.0434***	0.0178	-0.0717
	(-1.358)	(4.168)	(3.345)	(0.213)	(-0.402)
Female	-0.0085	0.0002	0.0012	0.0004	-0.0019
	(-0.032)	(0.067)	(0.066)	(0.012)	(-0.012)
Child	0.0195	-0.0006	-0.0027	-0.0010	0.0044
	(0.190)	(-0.190)	(-0.190)	(-0.138)	(0.183)
High School	0.1227	-0.0043	-0.0176	-0.0059	0.0279
	(0.306)	(-0.807)	(-0.854)	(-0.395)	(0.189)
College	0.1815	-0.0060	-0.0252	-0.0109	0.0422
	(0.376)	(-1.114)	(-1.199)	(-0.669)	(0.285)
Inc Low	0.6052**	-0.0213**	-0.0857***	-0.0307	0.1378
	(1.984)	(-2.503)	(-3.060)	(-0.570)	(1.205)
Inc Mid	0.8182**	-0.0254***	-0.1080***	-0.0587	0.1923*
	(2.490)	(-2.880)	(-3.561)	(-1.136)	(1.664)
Inc High	-0.2173	0.0079**	0.0315**	0.0096	-0.0490
	(-0.767)	(2.387)	(2.065)	(0.150)	(-0.288)
Small Land	0.8548***	-0.0268***	-0.1133***	-0.0600	0.2002*
	(2.841)	(-2.937)	(-3.665)	(-1.027)	(1.784)
Big Land	0.7411*	-0.0201***	-0.0910***	-0.0678***	0.1790
	(1.717)	(-2.739)	(-3.241)	(-6.150)	(1.325)
Working	-0.0291	0.0010	0.0041	0.0015	-0.0066
	(-0.093)	(0.234)	(0.230)	(0.038)	(-0.042)
Retired	-0.5796	0.0233***	0.0870***	0.0158	-0.1262
	(-1.604)	(19.712)	(8.395)	(0.141)	(-0.651)
Snowmobile	-0.2008	0.0071**	0.0288*	0.00959	-0.0456
	(-0.795)	(2.139)	(1.881)	(0.151)	(-0.268)
ATV	0.1457	-0.0048	-0.0203	-0.0086	0.0338
	(0.509)	(-0.932)	(-0.990)	(-0.422)	(0.225)
Motor Boat	0.0119	-0.0004	-0.0016	-0.0006	0.0027
	(0.052)	(-0.90)	(-0.091)	(-0.018)	(0.017)
Fish	-0.1027	0.0035	0.0145	0.0054	-0.0235
	(-0.394)	(0.923)	(0.872)	(0.105)	(-0.143)
Hunt	-0.5222*	0.0194***	0.0759***	0.0216	-0.117
	(-1.910)	(13.590)	(7.305)	(0.200)	(-0.614)
Bird	-0.0407	0.0014	0.0057	0.0021	-0.0093
	(-0.192)	(0.333)	(0.326)	(0.050)	(-0.058)
Live Music	0.6263***	-0.0231**	-0.0906***	-0.0267	0.1405
	(2.818)	(-2.553)	(-3.174)	(-0.402)	(1.299)
Parade	-0.0616	0.0021	0.00869	0.0034	-0.0142
	(-0.235)	(0.520)	(0.503)	(0.072)	(-0.087)
Sport Events	0.2703	-0.0090	-0.0375*	-0.0162***	0.0627
	(1.074)	(-1.507)	(-1.669)	(-3.964)	(0.442)

Thresholds		Diagnostics	
μ_1	2.0745***	lnL	-418.3548
μ_2	3.8773***	Restricted lnL	-457.5609
		χ^2	78.41224
		Pr(χ^2 > value)	<0.0000001

Notes: * implies significance at α = 0.10. ** implies significance at α = 0.05. *** implies significance at α = 0.01.

Table 6. Ordered logit results: desired level of tourism in residents' towns (n=377**)**

	Coefficient	Marginal Effects		
	(b / S.E.)	Not a	Secondary	Primary
Variable		Destination (Y=0)	Destination (Y=1)	Destination (Y=2)
Intercept	2.2030***	----	----	----
	(2.991)			
Brownville	-1.7255***	0.2798***	0.0270	-0.3068*
	(-4.021)	(29.707)	(0.569)	(-1.756)
Dover-Foxcroft	-1.2412***	0.1370***	0.1416***	-0.2787
	(-3.879)	(25.587)	(3.467)	(-1.557)
Milo	-1.8126***	0.2621***	0.0889*	-0.3511**
	(-5.094)	(20.237)	(1.786)	(-1.963)
ln Pisc	-0.4735**	0.0471***	0.0645**	-0.1116
	(-2.017)	(6.485)	(2.135)	(-0.632)
Female	0.2413	-0.0237	-0.0335*	0.0572
	(0.887)	(-1.181)	(-1.919)	(0.347)
Child	0.0220	-0.0022	-0.0028	0.0051
	(0.205)	(-0.205)	(-0.205)	(0.201)
High School	0.6390	-0.0730**	-0.0702***	0.1432
	(1.471)	(-2.348)	(-32.487)	(1.002)
College	0.8447*	-0.0735***	-0.1304***	0.2040
	(1.669)	(-2.603)	(-11.035)	(1.289)
Inc Low	0.4310	-0.0446*	-0.0558***	0.1004
	(1.334)	(-1.807)	(-4.830)	(0.640)
Inc Mid	0.4311	-0.0420*	-0.0603***	0.1023
	(1.258)	(-1.794)	(-4.289)	(0.636)
Inc High	0.1433	-0.0143	-0.0194	0.0337
	(0.482)	(-0.772)	(-1.037)	(0.204)
Small Land	0.6201**	-0.0596**	-0.0877***	0.1473
	(1.999)	(-2.242)	(-8.003)	(0.938)
Big Land	0.3951	-0.0362*	-0.0589***	0.0952
	(0.920)	(-1.682)	(-3.454)	(0.575)
Working	-0.2827	0.0282***	0.0384	-0.0667
	(-0.838)	(2.633)	(1.426)	(-0.383)
Retired	-0.3471	0.0382***	0.0408	-0.0791
	(-0.913)	(3.545)	(1.552)	(-0.463)
Snowmobile	-0.2317	0.0244**	0.0292	-0.0537
	(-0.886)	(1.973)	(1.174)	(-0.314)
ATV	0.3667	-0.0348	-0.0528***	0.0876
	(1.220)	(-1.604)	(-3.245)	(0.534)
Motor Boat	0.1894	-0.0190	-0.0256	0.0446
	(0.795)	(-0.975)	(-1.443)	(0.271)
Fish	-0.0983	0.0101	0.0129	-0.0230
	(-0.363)	(0.697)	(0.564)	(-0.136)
Hunt	-0.3011	0.0319***	0.0377	-0.0696
	(-1.064)	(2.864)	(1.441)	(-0.405)
Bird	-0.3883*	0.0411***	0.0487*	-0.0898
	(-1.783)	(4.327)	(1.746)	(-0.518)
Live Music	0.4653**	-0.0495*	-0.0578***	0.1073
	(2.006)	(-1.907)	(-6.045)	(0.698)
Parade	0.2543	-0.0276	-0.0306**	0.0583
	(0.963)	(-1.240)	(-2.277)	(0.369)
Sport Events	-0.1793	0.0189	0.0226	-0.0416
	(-0.687)	(1.414)	(0.950)	(-0.245)
	Threshold		Diagnostics	
	μ	2.5424***	lnL	-342.7017
			Restricted lnL	-378.6220
			χ^2	71.84064
			Pr(χ^2 > value)	0.0000011

Notes: * implies significance at α = 0.10. ** implies significance at α = 0.05. *** implies significance at α = 0.01.

As suggested in other studies (Jakus and Siegel, 1997; Harrill and Potts, 2003), the positive relationship between income and resident attitudes towards tourism is thought to capture some aspects of economic dependency where those with higher incomes are more likely to find ways to capitalize on tourism

development. Land ownership, also included to account for the ability to gain financially from tourism, was not found significant at either community scale.

Several of the cultural and outdoor recreation variables were found to have significant effects on resident attitudes. Of initial interest were possible differences in attitudes due to the sometimes contentious relationship among enthusiasts of motorized and non-motorized forms of recreation. We found no significant differences in attitudes manifested along these lines. Rather, differences appeared among solitary nature-based activities and social-based cultural activities. These differences are intuitive given the susceptibility of nature-based recreation forms like hunting and bird watching to noise and crowding. Given that these are often cited as costs from tourism, tourism can easily be seen as impairing resident ability to enjoy these activities. In contrast, respondents enjoying more social forms of recreation, such as live music, were found to hold more positive attitudes towards tourism. Considering that tourism can help generate and support concert events, the positive relationship between enjoyment of live music and attitudes towards tourism could be expected. This relationship holds at both community scales and should indicate that respondents enjoying live music are not adversely affected by the noise and crowding that tourism may imply, even when it is present in their own town.

The difference in the form of nature-based recreation found to be significant at each of the scales (hunting at county-scale and bird watching at town-scale) may be reflective of the distribution of tourism's costs relative to the activity. For instance, hunting, which requires a large amount of land and generally implies some short travel from home, could be perceived as being susceptible at the county scale. Meanwhile, bird watchers appear to be more sensitive to tourism's effects at the town rather than the county scale. Given the very high percentage of respondents (over 40 percent) indicating that they enjoy bird watching, this activity is interpreted more as a general appreciation in birds than a devoted passion. As such, tourism generated noise and crowding could be seen as affecting the number of birds one might see in their backyard.

Physical distance from tourism, investigated using dummy variables and resembling the traditional segmentation approach, resulted in significant differences in respondent attitudes according to town of residence. In both models, Greenville (the only town with an existing level of tourism) was the excluded case. As such, the coefficients and marginal effects reflect differences in attitudes with respect to those from respondents from Greenville.[5] While attitudes from every sample town are generally positive in regards to tourism, residents of the other three towns (Brownville, Dover-Foxcroft, and Milo) were more likely to hold less positive attitudes at both community scales than those from Greenville. These differences are noticeably greater at the town scale and may be indicative of an increased perception of the locally-borne costs associated with tourism.

Such concern may also be behind the significance of gender at the town scale. Gender has been found to be a significant factor in a variety of other study areas (Harrill and Potts, 2003; Mason and Cheyne, 2000). Its negative effect on attitudes has been explained as resulting from heightened concerns among females regarding tourism's costs. Concerns regarding these costs may become heightened among women as the implied distance from tourism is reduced through the tightening of community scale from the county to the town level.

Finally, work status has a significant positive effect on attitudes at the county community scale. Both workers and retirees were found to hold significantly less negative attitudes towards tourism. This result may indicate that those in, or retired from, the work force are more aware of the vulnerability of the local economy and are therefore more appreciative of possible economic growth that could accompany tourism. The fact that these variables are significant only at the county community scale may reflect the accessibility of tourism-generated jobs through commuting and a more careful tradeoff involving costs at the town community scale.

6. Conclusions

This research proposes the use of multiple community scales for the investigation of physical distance from tourism as a factor influencing resident attitudes. It is hypothesized that the closer tourism is proposed in relation to residents, the greater the exposure to both the benefits and costs related to tourism. It is also suggested that the benefits and costs of tourism diminish with distance at different rates. For example, tourism-generated jobs can be accessed by residents living outside of tourism centers while tourism-generated noise and congestion are likely to be endured more immediately by those living within the tourist center. Given different bundles of benefits and costs perceived at the town- and county-scale, these

[5] Among sample towns Greenville had the most positive attitudes towards tourism. This suggests that Greenville is still in one of the early stages of Doxey's (1975) or Butler's (1980) models.

relationships suggest different balancing in the formulation of resident attitudes towards tourism.

The distribution of responses across community scales supports this idea. Although direct comparison is limited, attitudes at the town community scale, where tourism is likely to imply both benefits and costs, tended to reflect more concern than attitudes at the larger county scale where fewer costs are expected. To further the investigation into the nature of resident attitudes towards tourism, ordered logit regression was used to examine the impact of factors at each of the two community scales. Income, gender, work status, recreation preferences and town of residence were all found to influence attitudes. In general, these results reinforce findings already established in the literature and suggest that participation in solitary nature-based recreation and socially-based cultural recreation have opposing effects on attitudes.

Given our findings of differences in the pattern of response and in the influence of the selected variables on support for tourism, it appears that community scale does play a role in how residents express attitudes towards tourism. As such, tourism planners and economic development professionals need to consider the community scale used in data collection when interpreting study results. For instance, an analysis of resident support for tourism proposed at a broad regional scale may indicate more uniform positive responses than if it were proposed at a tighter community scale. Therefore to avoid possible bias, an approach addressing attitudes towards tourism at multiple community scales, such as outlined in this research, could be used. If correctly employed, this type of analysis could provide a more comprehensive understanding of resident attitudes towards tourism in a region and help planners develop initiatives that best suit their communities.

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