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The Tourism Supply Linkage: Recreational Sites and their Related Natural Amenities

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Abstract. While the demand aspects of publicly provided recreation and tourism-related travel have long held the spotlight of research, the supply or production side remains inexact and relatively unexplored. In this manuscript, we focus on supply components of recreational resources and their links with tourism incidence in Wisconsin. The supply of recreation and tourism is a complex combination of natural amenities, recreational sites, access, and private sector business activity which is influenced by an array of factors that act to provide opportunities that satisfy leisure-based travel demands. Measures of recreational site density that account for both physical/geographic size and population, or social capacity are used as key explanatory variables in models of tourism dependence. Results suggest that tourism dependence in Wisconsin involves both recreation sites and natural amenities. Assessing tourism production without incorporation of these non-priced latent inputs provides an incomplete characterization of the tourism phenomenon.

1. Introduction

> *"People are drawn to the Northwoods* ***not*** *because of great hotel beds or wonderful restaurants … rather, it is the endowment of forests, lakes, and recreational sites that provide the key element that represents tourism across much of this rural region."*
>
> Anonymous

Tourism is often touted as a dominant "industry" within contemporary regional economic structures yet it lacks many of the supply characteristics common to industrial organization from the perspective of regional analysis. How is tourism produced? This vexing question provides a basis for analysis of tourism sector output and supply. It provides a central component of regional approaches to tourism economics and provides a necessary basis for our understanding of amenity-based development. Yet, we have few tourism-specific theoretical constructs upon which to proceed. Necessarily, the economic analysis of tourism is built from assessments of market supply and demand. Namely, market demand rests on an ability to define and model individual motivations for leisure travel while market supply is rooted firmly within firm-level cost structures. Although we have made progress in developing workable definitions of tourism demand, tourism supply remains nebulous and ill-defined (Hall and Page 2002; Smith 1994). A more comprehensive assessment is critical to infer important balances that impact public policy and planning for future tourism development.

Our difficulties in generalizing supply issues of tourism are, in large part, due to the complex interrelationships between the tourism phenomenon and exogenous economic, social, and environmental issues. Attempts to characterize tourism market supply have been limited due to a general lack of product definition and explicit incorporation of external characteristics critical to producing tourism output. Furthermore, there are important extra-firm recreational resources that tourism uses in its production that defy

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empirical analysis due to their non-priced and common pool characteristics. A basic premise of this paper is that the characteristics and extent of recreational resources do indeed matter in the production of regional leisure-based tourism output. This is particularly true in natural amenity-rich communities; examples of which can be found in regions with significant water, forest, and geologic resources.

The tourism literature is replete with studies that identify environmental resources as key components that support leisure-based tourism. Many have looked at the importance of off-site landscape and ecosystems as keys to the competitiveness of individual firms (Buckley 1994; Raitz and Dakhil 1988). The type and extent of environmental resources surrounding a site have been shown to be dramatically linked to tourism sector profitability due to the image-boosting values of "placeness." Many point to the natural environment as a basis for a marketable tourism attraction or product. The reasons for this are imbedded within individual preferences for leisure activities.

There is a growing interest in solidifying the linkages between tourism and the environment to develop a more systemic approach (Kavalinas and Pizam 1994). Lacking, however, is a conceptual basis that outlines the fundamental economic linkages between recreational resources and the tourism production process which is necessary for such analysis. In this paper, these linkages are made more explicit using recreation sites and natural amenities as an example of key non-priced inputs used in producing tourism output. These resource-based public goods serve as latent primary factor inputs into the production process of tourism.

The phenomenon of tourism is often the tangible result of tourists using public resources such as forests, lakes, and the recreational sites developed to access amenities. The supply of both recreation and tourism is a complex combination of natural amenities, recreational sites, and tourism-reliant businesses which are influenced by an array of factors that act to provide opportunities which satisfy recreational/leisure needs and desires (Kretuzwiser 1989). Implicit to this definition is a continuum of recreational elements ranging from biophysical resources to developed (or built) facilities.

Recreational sites allow access to natural amenities which often exist as publicly provided goods and services that tend to be hidden from view due to their non-priced attributes (Leiper 1990; Smith 1998; Marcouiller 1998). As noted in the early seminal work of Clawson and Knetsch (1966, page 89):

> *"There is nothing in the physical landscape or features of any particular piece of land or body of water that makes it a recreation resource; it is the combination of the natural qualities and the ability and desire of man to use them that makes a resource out of what might otherwise be a more or less meaningless combination of rocks, soil and trees."*

Given this broad perspective, the need to separate and analytically focus on both natural amenities and individual recreational sites becomes obvious. These latter amenity-based public goods defy empirical analysis due to their non-priced and common-pool characteristics, but their characteristics do matter in many leisure and recreational products. For example, a quiet forested campsite along a lake is different from a campsite along a heavily trafficked interstate. The campsite itself is only a portion of the recreational product. Indeed the surrounding land use, the forests or water resources, and environmental quality dramatically affect the camping experience. Amenity-based public goods such as forests and water not only serve as latent primary factor inputs into the production process of tourism, they are inextricably intertwined with recreational sites, themselves. Although some sectors of amusement-based tourism, such as theme parks or water parks, require few if any latent environmental inputs, outdoor and nature-based recreation are reliant on environmental resources and facilities play a secondary role (Hall and Page 2002; Dissart 2003).

The supply of recreation and its linkage to tourism have important regional development dimensions. Outdoor recreation and tourism appeal as community development strategies because of several relatively recent trends that include general increases in leisure demand, changing rural economic patterns, perceptions of tourism as a clean industry, relatively low capital requirements for business, and other community development benefits (Frederick 1993; Power 1996; Marcouiller 1997). This said, the empirical linkage between recreation sites and community development indicators is complex, ill-defined, and often intractable (Dissart 2003).

Gateway communities, or those communities that are closely proximate to public recreation destinations, are grappling with complex and traditionally unfamiliar growth management issues (Howe, McMahon, and Probst 1997; Marcouiller, Olson and Prey 2002). Indeed, the presence of natural amenities, developed recreational sites, and the promotion of recreation as an economic growth engine through tourism is rarely a developmental panacea and may have adverse ef-

fects on income equality, social health, and the environment (Rothman 1999; Power 1996; Marcouiller and Green 2000; Marcouiller, Kim, and Deller 2004).

The issue of providing recreational sites is taking on an increasing sense of urgency as open and publicly accessible lands experience increased pressures. As rural landscapes become fragmented by private residential developments, the extent and quality of publicly accessible recreation lands becomes scarce. This is exacerbated by fairly dramatic change in patterns of recreational use. With technological progress and increases in disposable incomes, the last twenty years has seen a dramatic increase in alternative recreational uses of land. With this alternative set of recreational activities come an increasing number of antagonistic recreational pursuits that compete for the same limited recreation land resources (Clawson 1974; Marcouiller and Ellefson 1987; vanKooten 1992).

Several key questions provide the impetus for this research that extends previous work focused on the general topic of natural amenities and rural development. How can we develop a comparable regional metric that reflects the supply of recreation resources? Once developed, what relationships exist between these regional metrics of recreation resources and the incidence of tourism?

This manuscript is organized into three subsequent sections. The first section outlines both the data on recreation metrics and the alternative analytical approaches used in developing tourism supply models. The next section presents the results for these tourism models at the county-level in Wisconsin. The final concluding section outlines relevant implications for policy and presents a framework for future research that addresses tourism supply.

2. Methods

An array of qualitative and quantitative approaches exists to address tourism supply (Smith 1994; Ioannides and Debbage 1998; Hall and Page 1999; Shaffer 1999). The supply elements of recreation and tourism resources are inextricably intertwined. While those recreating are not necessarily tourists, recreation and recreation facilities often serve as tourist attractions. The literature background from this paper borrows heavily from sources intended for tourism planning. For example, Gunn (1994) wrote a seminal handbook on the basics of tourism supply while Smith (1998) provides current analysis and alternative viewpoints of supply side tourism and recreation planning.

For this work, we are interested in isolating the effect of recreational sites and natural amenities in explaining the regional dependence on tourism within a tourism supply framework. We forward the following explanatory model of regional tourism dependence:

$$T_{dependency} = f\,(\text{recreational sites, natural amenities, control}) \qquad [1]$$

Where $T_{dependency}$ is a dependent variable that measures the regional presence of tourism. For our empirical model, this will be specified as the percentage of county-level employment (annualized number of jobs) and income (annual payroll) in key tourism-related retail and service sectors. These are specified within the NAICS groupings as leisure and hospitality and contained in a dataset developed and maintained by the Wisconsin Department of Workforce Development. We use a proportion to reflect the alternative levels of tourism reliance and recognize that this precludes an assessment of absolute levels of tourism.

Specifically, we estimate the following empirical model using data obtained from a variety of sources:

Tourism dependency:

$$Tourism_i = \beta_0 + \beta_1 RS_i^k + \beta_2 NA_i^m + \beta_3 E_i^n + \varepsilon_i \qquad [2]$$

where β represents the coefficients to be estimated, RS represents a vector (k) of recreation site variables that include the index of campsites, state park acreage, amusements, and downhill skiing. Natural amenities (NA) are represented by a vector (m) of variables that include water acreage and public land. Control (E) is provided by a vector (n) of demographic variables that include population density and a county-level metric of infrastructure density. Given the biophysical nature of natural amenities, our model relies on a static amenity and recreation base and consists of a sample of 71 counties (i =1, …, 71) located in Wisconsin. The error term ε is treated as well-behaved (standard OLS assumptions hold) recognizing that spatial autocorrelation could indeed exist thus providing ample opportunity for future work.

Given the fact that recreation sites evade easy characterization, a brief discussion about these variables is important. The range of sites considered to have leisure opportunities varies widely and could include an open field or a picnic site to a multi-million dollar water park. A recreational facility is a site specific development that either provides its own amenity (e.g. an amusement park or museum) or allows access to surrounding amenities (e.g. boat launch onto a lake or campsites in a forest). The former typically entails significant financial capital to develop the amenity while the latter typically enhances and complements the surrounding amenity value (often publicly pro-

vided) using modest inputs of public financial investments. Sites and facilities fall generally under Gunn's (1994) "attractions" category for the components of recreation supply. Providers of recreational sites and facilities can be categorized by ownership group including private firms, public entities (government agencies at local, state, federal levels), and non-profit organizations.

The recognition of recreational resources is typically accompanied by an inventory process that assesses the quantity, quality and extent of the resource base (Hall and Page 1999). Although no definitive scheme exists for classifying recreational resources, the need to distinguish between built and naturally occurring amenities, useful initial groupings address alternative environments and resource types. For instance, Chubbs' (1981) classification includes:

- The undeveloped recreation resources, where physical attributes of land, water and vegetation are untouched;
- Private recreation, such as second homes, resources owned by quasi-public organizations;
- Commercialized private recreation resources, such as shopping malls, theme parks, museums, gardens, and resorts;
- Publicly owned recreation resources, including parks, sports and leisure facilities, national parks, forest and tourist sites;
- Cultural resources, based in both the public and private sector, such as libraries, the Arts and what is increasingly being termed 'the cultural industries';
- Professional resources, which may be divided into the administrative functions for recreational provision and management.

Variables in a typology might include urban and rural resource-based, intermediate and user-oriented, man-modified and natural resources; formal and informal; intensive and extensive; fragile and resistant; and public and private ownership (Hall and Page 1999).

The spatial aspect of supply is also an important dimension in the supply of recreational opportunities. Coppock and Duffield (1975) recognize the spatial separation between users of recreation (demand) and the presence of amenities and recreation sites (supply). Matching these demands with supply of recreation reflects important locational components and spatial patterns reflective of underlying resource endowments. These endowments include both natural (hills, lakes, forests) and socioeconomic resources (undeveloped land, available skilled labor and financial capital). In this way, we can recognize that supply is often unable to spatially respond to demand. The location of recreation facilities has been referred to as 'site preferred' goods, where proximity to their location is often seen as a measure of their use (Austin 1974). The tension in recreation planning involves balancing the location of recreation sites with the distance people have to travel and providing access to as many people as possible. Certainly, infrastructure (roads and transportation corridors) and recreational access are inextricably intertwined thus providing a broad set of coordinating tasks. Also, it is important to recognize that certain recreational endeavors require remoteness and inaccessibility as a precondition for their existence. Wilderness and deep-woods canoeing or hiking are recreational examples where increased use can detract from the resource itself.

Data for county-level recreation supply are based on several sources that include the National Outdoor Recreational Supply Information System (NORSIS) data set developed and maintained by the USDA Forest Service's Wilderness Assessment Unit, Southern Research Station at Athens, Georgia. This dataset, released in 1997, was built using incidence of data elements from the preceding 3-5 year period. Although this dataset provides a valuable benchmark, it reflects recreation supply during the early to mid-1990s. During the past six months, we have been working on expanding and updating the dataset for Wisconsin for the most recent comprehensive recreation planning exercise (2005-2010 SCORP).

Recreation supply represents the extent of physical resources present and some indication of its capacity.[2] Examples of the former include the number of park acres or the number of lifts in a downhill ski hill. The latter capacity elements speak to a more detailed assessment of capacity; examples include items such as the number and size of camping sites or the uphill lift capacity in skiers per hour.

It is also important to recognize that use of recreation areas and facilities is not evenly distributed throughout the year. Most outdoor recreational activities have a distinct and unique seasonal pattern that is determined by climate. Also, recreational demands normally peak on weekends and holidays.

These peak days are the most important for purposes of comparison with existing recreation supply. Peak days and seasons are considered critical thresh-

[2] We recognize that there is a difference between descriptive and inferential metrics of supply that differ by discipline. Examples of inferential metrics often include price-quantity tradeoffs (economics), biophysical limits on resource use (conservation biology), or social and cultural constraints on use (sociology). For our purposes here, we limit our analysis to descriptive metrics of supply.

olds; they represent high volumes of demand expected for activity throughout the year. "Design demand" is the term used for an average weekend or holiday volume of participation, or peak day. The quantity of resources and facilities required to meet design demand represents a more realistic goal for recreation providers than the level of supply required to accommodate the highest demand generated.

These supply metrics boil down to the use of simple indices that reflect the incidence of recreational resources. Useful supply measures standardize resources by scaling them on some per unit basis. This scaling can be based on per capita or per acre basis depending on the task at hand. In their simplest form, these indices can serve as a base metric of carrying capacity. One problem associated with simple indices of local population is their use for resources that draw people into the region from the outside. It is important to recognize that there exists wide variation in demand characteristics that differ by unique recreational resource types. For instance, municipal parks (playgrounds, picnic areas, basketball courts, etc.) are typically used (demanded) by people who reside in the city. The level of use by non-locals is limited. On the other hand, popular state and federal parks (Devils Lake State Park, Yellowstone National Park, etc.) are typically used by non-locals with local use limited to off-peak times. Thus, for non-locally demanded recreation/tourism resources, there is a need for broader geographic scales that capture larger regional demands. This leads to alternative metrics such as the recreation location quotient.

One limitation of the previously described analysis techniques is the general inability of the metrics to provide a relative and comparable statistic upon which to base locational decisions. This limitation points to the need for a metric that serves as an index of an index with a reference region to serve as the basis for comparison. The recreation location quotient (RLQ) is one such index of an index metric that can provide more comparable measures of a region's recreational resources. An RLQ is a measure of the relative difference in regional recreational characteristics as compared to some reference region. For recreational resources, it is simply calculated as follows (eq. 3):

$$RLQ = \frac{\%\ \textit{resource in a given locale}}{\%\ \textit{resource in a reference region}} \qquad [3]$$

As such, this metric provides a broader measure of recreational supply that captures wider spatial markets. Although it remains purely descriptive, it is useful in assessing where recreational resources are abundant relative to elsewhere. Measurements, to be useful, need to assess broader regional supply as it relates to local supply (e.g. relative to everyone else, how much recreation do we have here … in this community?). Thus a RLQ provides a measure of local supply relative to some reference region to answer the question: What level of importance can we place on local recreational resources?

Specifically, the recreation location quotient is calculated as follows (eq. 4):

$$RLQ_s^i = \left(\frac{r_s^i}{base_s^t}\right) \Big/ \left(\frac{r_n^i}{base_n^t}\right) \qquad [4]$$

where r is the amount of recreation site capacity, i is recreation type, s is the local community, *base* is some regional characteristic that provides a base (population or acreage), t is total, and n is the reference region.

The implications of recreation location quotient values speak to the level of excess recreation supply. The theoretical domain of a recreation location quotient extends between zero and infinity ($0 < RLQ < \infty$) but in practice, the upper bound is about 50 or so. Values of less than one reflect levels of recreation site incidence less than the reference region while values greater than one reflect levels higher than the reference region.

The recreation location quotient provides a usable metric for assessing **where** recreation supply exists and places local resources relative to a broader spatial reference region. Selecting the reference region determines the characteristics of an RLQ index. For our purposes with these initial specifications, we use the State of Wisconsin as a reference region.

3. Results

In this initial work, we focus our attention on the State of Wisconsin which consists of a highly varied array of both recreational resources and tourism reliance. Primarily a rural state[3], there are several clear recreation and tourism distinctions that follow natural topography, vegetation, and geologic/limnologic resources across Wisconsin. While row-crop and animal agriculture dominate the landscape in Central and

[3] Notable exceptions include the Milwaukee and Madison metropolitan areas, the suburbs of the Twin Cities, and a variety of smaller micropolitan regions such as Green Bay, Wausau, Eau Claire, and LaCrosse.

Southeastern Wisconsin, forests are more predominant vegetative features in the Northeast, Northwest, and Southwest portions. Lakes can be found throughout the northern and eastern half of the state while rivers bisect the driftless areas of Southwestern Wisconsin. Lake Michigan and Lake Superior comprise a significant amount of the Wisconsin border to the east and north.

Tourism is found in differing levels across the state as summarized in Figure 1 using an employment metric. Several notable concentrations can be seen in the figure; namely, the Door County peninsula and Bayfield represent significant coastal resort destinations and are heavily dominated by tourism as primary economic activities. Also, a high concentration of amusements is found in the Wisconsin Dells area (Adams, Columbia, Juneau and Sauk Counties) which represents another tourism dependent region.

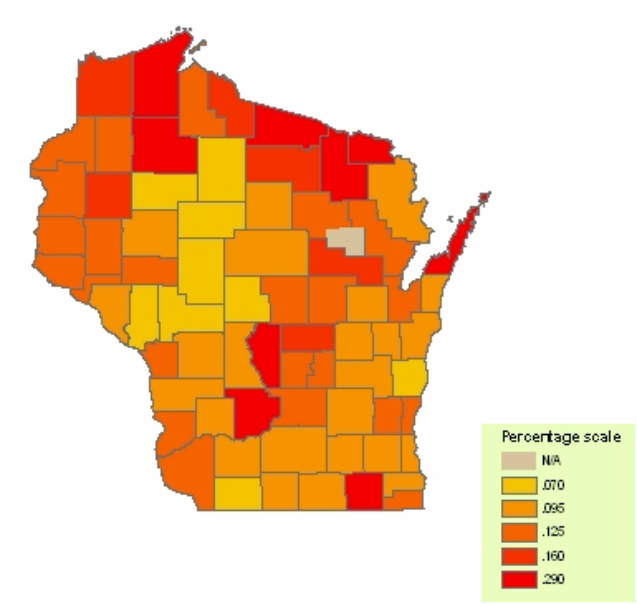

Figure 1. Tourism employment as measured by the proportion of total county employment classified as tourism.

The spatial assessment of tourism suggests interesting levels of tourism dependence depending on the metric used. For example, given the generally lower wage structure in tourism, employment metrics that count numbers of jobs can provide a somewhat biased assessment of dependence when viewing portion of total employment by sector. Another meaningful perspective is provided by income metrics that track payroll. For tourism payroll, Figure 2 provides a similar spatial array but reflects generally lower overall dependency values given the higher levels of income derived from non-tourism sectors.

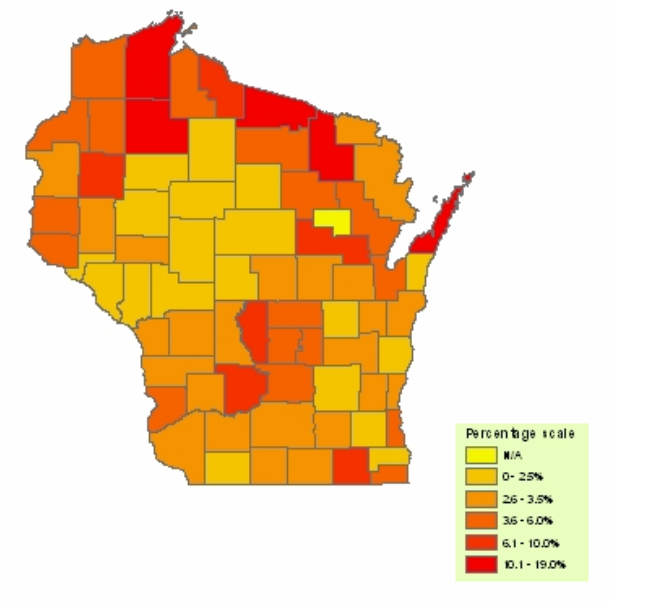

Figure 2. Tourism income as measured by the proportion of total county income classified as tourism.

Recreation sites are found throughout the state but are found in interesting spatial arrays that reflect different locational factors. For example, the location of campsites reflect both underlying natural amenities and proximity to population. A recreation location quotient metric of campsites in Wisconsin is found in Figure 3. Note from this figure that while found in higher physical densities in Southeastern and Central Wisconsin, campsites are clearly more available to non-locals in North and Southwest Wisconsin as represented by the population-based metric which accounts for lower local population levels.

A similar spatial pattern of golf courses is shown in Figure 4. Note from this figure that an even more pronounced physical concentration of golf courses exists in proximity to the larger population centers of Southeastern Wisconsin. Yet, like campsites, golfing opportunities are clearly more available in the North reflecting lower local populations. Although built to showcase the natural environment, golf courses are human-built landscapes that are relatively less reliant on underlying natural amenity endowments. What does not exist as a regional natural amenity endowment can be created with capital investments spent on bulldozers, herbicides, fertilizer, and nursery stock.

These two types of recreational resource are contrasted by recreational resources that are wholly dependent on the natural amenity base. A good example

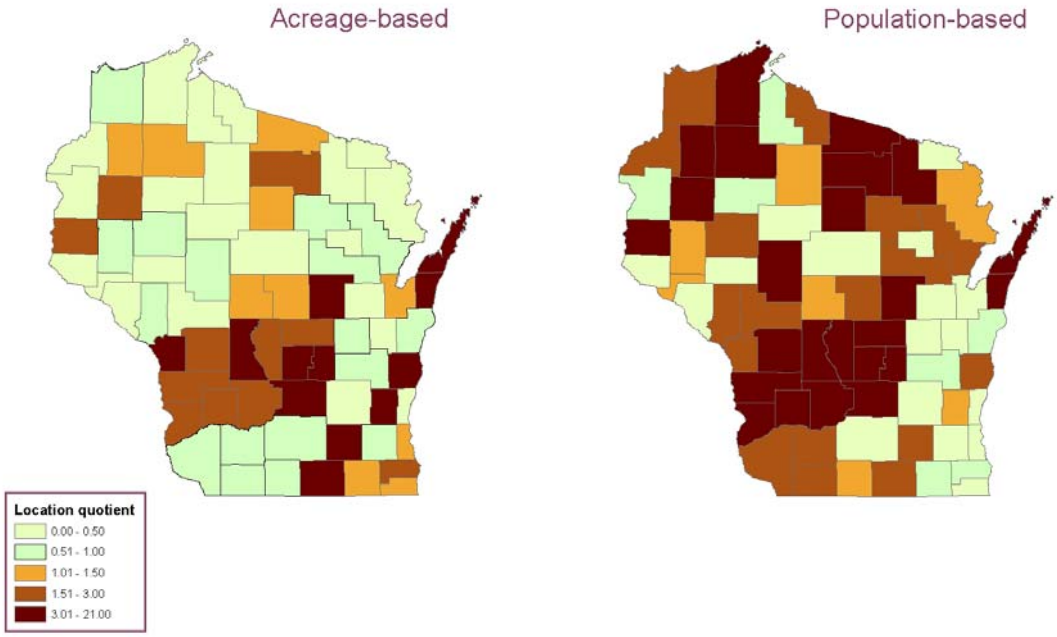

Figure 3. Campsites in Wisconsin as indexed using recreation location quotients (Marcouiller, et al. 2003)

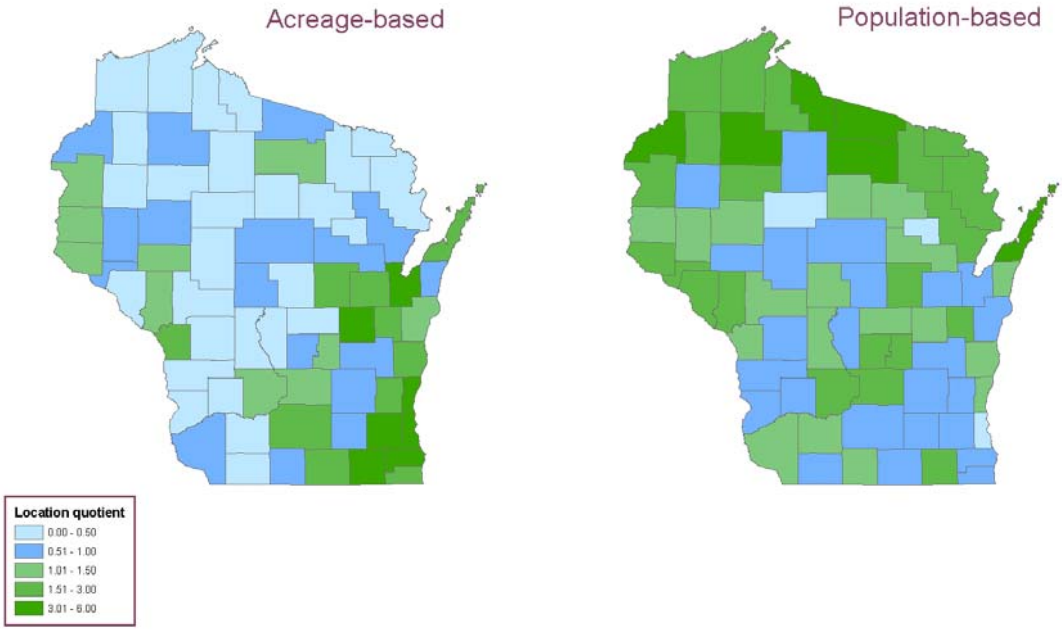

Figure 4. Golf courses in Wisconsin as indexed using recreation location quotients (Marcouiller, et al. 2003).

is the locational determinants of downhill ski areas that, with the exception of a site located on a reclaimed garbage heap near Oconomowoc, are wholly dependent on natural topography (vertical drop) for their location across space. This statement must be tempered a bit by the dominant market forces that drive firm-

level profitability in seasonal recreation businesses. At a certain point, remoteness will overcome topography in the financial solvency of managing a private ski area. Several notable large-scale resort bankruptcy examples of high natural amenity ski hills exists across the state and suggest the importance of location proximate to population, or markets. In other words, vertical drop is a necessary, but insufficient firm location determinant for ski resorts.

We turn our attention now to a set of preliminary results that are inferential in nature and focus on explanatory factors involved in regional tourism incidence and dependence. Again, these represent a generic tourism supply modeling framework that focuses on locational determinants that could be representative of an aggregate tourism industry production that is directly linked to the availability of recreational opportunities. After a rather exhaustive exploratory exercise, we present three models that suggest underlying regional location relationships. These are summarized in Table 1.

Table 1. OLS regression estimates for alternative tourism dependence models.

	Dependent Variables					
	Tourism Payroll (% total payroll)		**Tourism Employment (% total employment)**		**Tourism Payroll (% total payroll)**	
Independent Variables	**b**	**t-ratio**	**b**	**t-ratio**	**b**	**t-ratio**
Constant	0.007		0.082**		0.023**	
Recreation Sites:						
LQ campsites per sq. mile	0.016	3.816**				
	(0.419)					
LQ campsites per capita			0.018	3.735**	0.014	3.972**
			(0.413)		(0.455)	
State park acres per sq. mile					0.001	0.774
					(0.085)	
LQ state park acres per capita	0.001	0.276	0.002	0.827		
	(0.029)		(0.088)			
Amusement parks per sq. mile	0.298	0.750				
	(0.076)					
LQ ski hill per capita	-0.001	-0.397	0.005	2.554*	0.001	0.782
	(-0.044)		(0.270)		(0.087)	
Amenities:						
Water acreage per sq. mile	0.000	0.343	0.000	1.097	0.000	0.723
	(0.036)		(0.116)		(0.079)	
Public land per sq. mile	0.131	4.968**				
	(0.580)					
Control:						
Population density					0	0.414
					(0.046)	
Highway miles per sq. mile			-0.006	-0.186		
			(-0.020)			
R^2	0.372		0.336		0.248	
Adjusted R^2	0.313		0.285		0.19	
Model F	6.319**		6.590**		4.289**	

* p<.05, ** p<.01; standardized beta coefficient in parentheses

Each of these models provides a measure of tourism dependency based on the percentage of total local activity. Given the standardized dependent variable combined with our interest in providing a relative spa-

tial reference to recreation sites, the modeling effort was hampered by correlation among the independent variables. This said, the models presented in Table 1 had fairly random error structures. The distinguishing elements of each model involve distinct explanatory variables that capture (1) amenities, (2) recreational sites, and (3) control attributes. The first and third models use payroll as a basis while the second model uses employment as a dependent variable. It is important to note that the first and third models are quite similar except for the use of alternative metrics for state parks and campsites/campgrounds. Both were included as comparison models.

Several interesting aspects of these models warrant mention. Across each model, recreation sites are consistent in their positive relationship with tourism dependence. Notably significant results suggest the importance of campsites. Within the model of tourism employment, results suggest that a one percent change in the RLQ of campsites corresponds to a 1.8 percent increase in tourism employment dependence. A consistent but more muted result is suggested within the second model of tourism payroll.

Similar relationships exist for the effect of amenities on tourism dependence. The models contain two variables that included water acreage and public land. Although limited but our focus on Wisconsin, results of the first model of tourism payroll dependence suggest that public lands are a significant and positive explanatory factor.

4. Summary and Further Research Needs

While the demand aspects of publicly provided recreational sites have long held the spotlight of research, the supply side of public recreation components and tourism dependence remains inexact and relatively unexplored. In this manuscript, we focused attention to the supply components of recreational resources in Wisconsin and their relationship with tourism dependence. A supply perspective of tourism dependence reflects a complex combination of natural amenities and recreational sites which are influenced by an array of factors that act to provide opportunities which satisfy leisure-based needs and desires. Implicit to this definition is a continuum ranging from biophysical resources to built facilities.

This paper focused on tourism dependence from the perspective of both local and regional use based upon different metrics and approaches to spatial assessment of recreational sites and amenities. Results suggest that wide spatial variation exists in the location of recreation sites across Wisconsin. Key determinants of location build from a combination of factors that involve both the endowment of natural amenities and the presence of recreational demand markets. There is certainly ample opportunity for more work in this area. This takes the form of both theoretical supply work and empirical modeling that is required for more informed set of rural amenity-based development policies (Green et al. 2005). A critical aspect of this further work needs to address alternative recreational use compatibilities and the resulting opportunity to emphasize complementary activities through more informed public policy. In this way, we can triangulate and combine existing data elements with evolving recreational uses and new SCORP-specific needs to face the potential dilemma of recreation resource scarcity amidst strong increasing demands associated with amenity-based migration.

From a tourism planning perspective, it is important to remember that the presence of tourism in any given region and that region's dependence on tourism represents a complex combination of natural amenities, recreation sites, and firm level locational determinants. While this work focused on the former two aspects, it is important to recognize the importance of the latter. The ability of tourism firms to hire labor and pay wages is also determined by local labor market conditions, proximity to population centers, and a host of private and public policies that both allow access (infrastructure) and develop local resources (education, marketing, etc.). Our work provides a starting point upon which more complete assessments of tourism supply can proceed. This type of work is logically a central feature of progressive and comprehensive outdoor recreation planning and integrative tourism planning.

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