

A Comprehensive Travel and Tourism Study of the Blue Ridge Parkway, USA

Rachel J. C. Chen, Ph.D.

Department of Consumer Services Management
The University of Tennessee, USA

Gene L. Brothers, Ph.D.

Larry D. Gustke, Ph.D.

Department of Parks, Recreation and Tourism Management
North Carolina State University, USA

Abstract: The Blue Ridge Parkway is the first national parkway in the United States, the most visited unit in the US National Park System, and the longest scenic drive (469 miles) in the world. Because studies regarding the comparison among various visitors are rare in the literature, this paper makes an important contribution to the literature by applying different statistical approaches to investigate the differences between resident and non-resident Blue Ridge Parkway users. This study also involves the use of the IMPLAN (IMpact analysis for PLANning) input-output model to estimate the direct, indirect, and induced impacts of the spending by Parkway visitors on goods and services produced in the defined regions. Using expenditure data collected from travelers visiting the Blue Ridge Parkway of North Carolina and Virginia, spending profiles are estimated for non-resident travel parties. The results show that the users are different in the trip and traveler characteristics. The economic impacts of travel to the Blue Ridge Parkway extend beyond the jobs and income it directly creates. The largest beneficiaries of the Parkway's economic impact are in the "Hotels and Lodging Places", "Eating and Drinking", "Retail Trade", and "Services" sectors. Promotion strategies and visitor perceptions about the Parkway are presented.

Key Words: Blue Ridge Parkway, trip characteristics, IMPLAN, A Comprehensive Travel and Tourism Study of the Blue Ridge Parkway, USA

Introduction

The Blue Ridge Parkway is the first national parkway in the US (MacClean et al. 1985), the most visited unit in the US National Park System (nearly 19.2 million recreation visits in 2000), and the longest scenic drive (469 miles) in the world. The Blue Ridge Parkway begins at Rockfish Gap, Virginia and ends at Cherokee, North Carolina. The Parkway connects the Shenandoah National Park in Virginia to the Great Smoky Mountains National Park in North Carolina and Tennessee, USA. Indeed, the cultural and natural history of the Southern Appalachian Mountains are preserved and interpreted by the Blue Ridge Parkway surrounding regions.

The construction of the Blue Ridge Parkway started in September 1935. The Parkway was built in non-contiguous sections, and it was not completed until

A COMPREHENSIVE TRAVEL AND TOURISM STUDY

1983 when the Linn Cove Viaduct was finished. Although the Linn Cove Viaduct was completed in 1983, the adjoining 7-plus mile section along Grandfather Mountain was not opened for public use and travel until 1987. To build the Parkway, landscape architects of the National Park Service and engineers of the Bureau of Public Roads worked together to create the unique corridor. In addition to the main corridor, a series of recreation areas were designed (Blue Ridge Parkway 1993).

As the volume of visitors increased (from 11.7 million recreation visits in 1979 to nearly 19.2 million visits in 2000), so has the economic growth for communities adjacent to the Parkway (Williams and Knoeber 1979; Williams 1981; Southeastern Research Institute 1990). Understanding the real economic impacts of travel visitation to a destination is crucial for public and private tourism related organizations in order to provide information for planning, operating services, forecasting the number of visitor, anticipating the need for facilities, and monitoring environmental conditions. Most recent economic studies have reported positive economic effects of tourism on surrounding communities. Several studies have been conducted on the economic impact of state/national parks and tourism/recreational activities (Cordell et al. 1992; Dawson et al. 1993; Finn and Erdem 1995; Gazel and Schwer, 1997; McHone and Rungeling, 2000; Mules and Faulkner 1996; Sullivan et al. 1992; Uysal et al. 1992; Yuan and Christensen, 1994). However, there are only a limited number of studies about the economic impacts of the parkways. Past economic impact studies of the Blue Ridge Parkway in Virginia and North Carolina have quantified the average annual employment and estimated the average increase in per acre rural land values which occurs as a result of proximity to the Parkway (Williams and Knoeber 1979; Williams 1981). However, studies reported by Williams & Knoeber's (1979) and Williams (1981), lacked extensive data collection necessary for conducting a comprehensive economic impact study of the area. The results of a study conducted by the Southeastern Research Institute (1990) suggested that almost \$1.3 billion was brought into the economies of corridor counties. These expenditures generated approximately \$98 million in tax revenues, and supported over 26,500 jobs. The results of the 1990 Parkway study reported only the direct effect of Parkway visitor expenditures. Nonetheless, these three studies reflect the positive effects of the economic impacts of the Blue Ridge Parkway.

The benefits to communities adjacent to the Parkway have not been well documented. As a result, during the year of 1996, the Coalition for the Blue Ridge Parkway and the National Park Service sponsored a study of Blue Ridge Parkway visitors that was designed to estimate the regional economic impacts of travel visitation to the Parkway. Indeed, due to limitations of previous Blue Ridge Parkway studies: 1) only applying economic theories without data

collection (such as Williams and Knoeber 1979; Williams 1981), and 2) only estimating the direct impact of travel to the Parkway without region definition (such as Southeastern Research Institute 1990), the study presented here was initially designed to overcome limitations of previous studies. The study also included collection of visitor spending profiles, employed the IMPLAN (IMPact analysis for PLANning) system to estimate the direct, indirect, and induced impacts of travel to the Parkway, and used visitor attendance figures to estimate magnitude of impacts.

With the concern for the importance of providing information for better understanding, planning, development, and maintenance of a destination, recognizing the economic effects of travel to the Blue Ridge Parkway is not enough. Historically, studies of the tourism industry have focused on local visitors (residents) or outside visitors (non-residents) (Harris et al. 1990). The non-resident traveler studies, focused on the economic benefits of visitation to defined study areas (e.g., Gazel and Schwer 1997; McHone and Rungeling 2000). Resident travelers' studies have assessed residents' attitudes and perceptions to the impacts of tourism development in local communities (e.g., Crompton 1979; Getz 1994; Lindberg and Johnson 1997; Mason and Cheyne 2000; McCool and Martin 1994; Liu et al. 1987).

Since resident groups represent the voice of host communities, policy and decision makers should have more information about influential resident groups' perceptions, motivations, and opinions about a tourism attraction in order to balance the conflicts between the conservation and development of existing resources. Additionally, a segmenting market plan enables facility and agency managers to allocate advertising dollars effectively and to adjust consumer services if it is found that the benefits and services offered by the parkway related agencies, chamber of commerce, or tourism related businesses differ from those travelers seek. Several studies indicated that a segmentation strategy could offer potential for better understanding of tourist behaviors (Gnoth 1997; Mansfeld 1992; Ross and Iso-Ahola 1991). Because studies regarding the comparison among various parkway visitors are rare in the literature, this paper makes an important contribution to the literature by investigating the differences between resident and non-resident parkway users.

Purposes of the Study

The first purpose of the study was intended to gather economic information about the Blue Ridge Parkway. The second purpose of this study was to explore the usefulness of segmenting the geography-based market (local and non-local visitors) through comparing visitor characteristics, opinions, and motivations of residents of the region and non-residents.

A COMPREHENSIVE TRAVEL AND TOURISM STUDY

Definitions

Resident Visitors. The definition of resident visitors used for this study was a travel party from the surrounding counties along the Blue Ridge Parkway of North Carolina and Virginia. The surrounding counties along the Blue Ridge Parkway of North Carolina are Buncombe, Haywood, Henderson, Jackson, Madison, Swain, Transylvania, Alleghany, Ashe, Avery, Burke, Caldwell, McDowell, Mitchell, Surry, Watauga, Wilkes, and Yancey. The physical corridor region of counties adjacent to the Blue Ridge Parkway was selected based on their ease access to the Parkway. The surrounding counties along the Blue Ridge Parkway of Virginia are Bedford, Botetourt, Carroll, Floyd, Franklin, Grayson, Montgomery, Patrick, Pulaski, Roanoke, Wythe, Albemarle, Amherst, Augusta, Nelson, and Rockbridge.

Non-Resident Visitors. The definition of non-resident visitors used for this study was a travel party from anyplace other than the surrounding counties along the Blue Ridge Parkway of North Carolina and Virginia.

Survey Instrument Design

On-Site Survey. The main purpose of the on-site survey procedure was to gather some preliminary data on Parkway visitors, help respondents understand the take-home questionnaire, and explain that only one person per travel party was to fill out the take home survey. The definition of a travel party was the group of people with whom the respondent visited the Parkway.

Take-Home Questionnaire. Questions on the take-home survey were divided into five types: questions about a respondent's Blue Ridge Parkway visit on the day he/she was interviewed, questions about their spending patterns, questions about the travel plans for the Parkway visit, questions about the respondent's opinions about the quality of the Parkway, and questions about the socio-demographic information.

Methodology

Data Collection

This study combined brief on-site interviews and mail surveys to gather data from Parkway visitors. Because stopping the Parkway traffic to interview visitor was not allowed, intercept surveys were conducted at the selected visitor centers based on several considerations including approximately equal length among county borders, physical accessibilities, the availability of facilities, and the number of users. Sampling was conducted by locations along the Parkway at

RACHEL JC CHEN, GENE L BROS & LARRY D GUSTKE

1) 5 visitor centers and a concessionaire operated lodge/restaurant (Mt. Pisgah) in North Carolina; and 2) 6 visitor centers in Virginia.

A stratified sampling design was used to insure that weekdays, weekends/holidays were represented during the sample periods. During sampling at a given site, all visitors were divided by the interviewer into groups, and the first visitor of each group to enter the visitor center was selected for interview. Visitors selected were stopped and asked to participate in the study by providing their names and addresses and the answers to five short questions. The on-site interview took approximately three minutes. The participants were then given a self-administered diary questionnaire and asked to fill out the survey and mail it back in a postage-paid envelope provided at the end of their trips. A second copy of the questionnaire with postage-paid envelope was sent to those who had not responded within two weeks after the initial intercept. Data were gathered from Parkway visitors. Of 2,125 travel parties receiving questionnaires, 1,279 were returned resulting in an overall return rate was 60.2%.

Economic Impact Analysis

This study used an input-output model to produce quantitative estimates, sector-by-sector of the economic impact of tourism and related industries of the regional economy along the Parkway. This assessment of the regional economy used expenditure data from the take-home survey to create spending profiles in a computer model. The first defined region of this study was the surrounding counties along the Blue Ridge Parkway in North Carolina. And the second defined region of this study was the surrounding counties along the Parkway in Virginia. The model used was an input-output model named IMPLAN.

The IMPLAN model estimated the effects of money that was brought in from outside the region (in this case the surrounding counties of the Blue Ridge Parkway in NC or VA). Thus, average nonresidents' spending profiles were used for calculating the economic impacts based on the 'new money' concepts in the tourism areas. Nonresidents were defined as travel parties living outside or coming from counties/states outside of the defined regions.

In order to assess economic effects of the overall impact on the regional economy, estimates of total expenditures attributed to Parkway visits were simulated by multipliers. The main outputs of this model were distributed among numerous industries and included: total industrial output, employee incomes, property income, employment numbers, and total value-added.

Micro IMPLAN (Impact analysis for PLANning) System

In order to perform the economic impacts of various management replacements in contiguous areas, IMPLAN was developed by the USDA Forest Service

A COMPREHENSIVE TRAVEL AND TOURISM STUDY

Land Management Planning Division and Rocky Mountain Forest and Range Experiment Station in 1976. The initial application of IMPLAN was designed to calculate the economic impacts of land planning and timber related management (Alward & Palmer, 1983; Palmer & Siverts, 1985). The used version of Micro IMPLAN in this study was modified by the USDA Forest Service Land Management Planning Systems Group at Fort Collins in Colorado and Minnesota IMPLAN Group for estimating other economic impacts resulting from different activities. Micro IMPLAN is able to adjust the input-output model to current industry statistics and newer technology for better assessment and more reliable results. IMPLAN also allows user to estimate regional economic impacts at the national, statewide, or county level.

In the IMPLAN model, yearly data sets are assembled from various secondary sources, and industries are categorized into 528 economic sectors based on SIC (Standard Industrial Classification) codes. The requirement of an input-output analysis is that the quantities demanded and supplied are equaled. However, this over-simplified assumption is often criticized. The constant relationships among several components such as price, spending patterns, specific time period, etc. are not reasonable in real communities and complex economic structures of the world. However, with a long-term perspective, the use of an input-output model appears to operate and predict reasonably well.

Economic Impact Concepts and Measures: Direct, Indirect, and Induced Effect Impacts

For estimating the I/O model under Micro-IMPLAN, the main equations used in this study were:

$$T_n = y_j * b_{jn} \quad (1)$$

$$M_n = c * T_n \quad (2)$$

$$M_n = c * y_i * b_{jn} \quad (3)$$

$$M_n = (I-A)^{-1} * T_n \quad (4)$$

where:

T_n = a vector of changed final demand

y_j = a vector of total spending in sector j , $j = 1, \dots, n$

b_{jn} = a value from allocating the j category in travel spending to IMPLAN _{n} sectors

M_n = impact vectors, resulting from final demands changes (i.e., changes in value added, and number of jobs, etc.)

c = the matrix of coefficients (IMPLAN multipliers)

$(I - A)^{-1}$ = Leontief inverse matrix (used in IMPLAN); I is the identity matrix; A is the transactions matrix

RACHEL JC CHEN, GENE L BROS & LARRY D GUSTKE

The direct expenditure contributions of trading in goods and services generated by non-resident travel parties to the surrounding counties of the Blue Ridge Parkway are one component of the economic impacts of visitation to the defined region. Other economic impacts considered in this research were indirect, and induced effects.

- Indirect effects result from the suppliers of business and agencies that sell goods and services to the factories and organizations which directly provide their products to non-resident visitors. For example, restaurants purchased more meat to accommodate the increased number of Parkway non-resident visitors.
- Induced effects result from the direct and indirect effects generated by employee income in the defined region. For example, restaurant employees spend their added wages or income in the surrounding counties along the Parkway for shopping, food, housing, transportation, and the daily goods and service needs.

Total economic impact is the sum of direct, indirect, and induced effects of visitor spending. Micro IMPLAN calculates multipliers including direct, indirect, and induced effects. The use of multipliers is to estimate economic impacts resulting from a commodity or an industry changing in final demand. In order to estimate economic effects caused by a new industry in final demand, at the impact analysis stage, multipliers are used as the magnitude to weigh the leakages and linkages among various sectors of the local economy. As mentioned previously, lower leakages to economies are assumed to be represented by higher value added multipliers. Miller and Blair (1985) provide detailed discussions for the advantages and disadvantages of the I/O modeling techniques. For more information about the calculation and limitations of the I/O IMPLAN, readers are referred to the IMPLAN Professional User's Guide (1997).

Analysis and Results

Visitor Spending Attributable to the Parkway

An estimated 6.99 million travel parties visited to the Blue Ridge Parkway in the surveyed year. Total numbers of the Parkway travel parties were determined from traffic count information provided by National Park Services Monthly Visitor Estimates. Expenditures made by visitors traveling to the Parkway and during the visit in the surrounding counties of the Parkway are primarily in seven economic sectors: (1) accommodation, (2) food and beverages, (3) transportation, (4) entertainment and recreation, (5) souvenirs, (6) film, and (7) other trip costs.

A COMPREHENSIVE TRAVEL AND TOURISM STUDY

Of the 827 useful responses, 725 were non-resident travelers (87.67%) and 102 were residents (12.33%) of the first region (NC). Non-resident travel parties spent an average of \$498.68 per party in the surrounding counties along the Blue Ridge Parkway of North Carolina. Of the 358 useful responses, 276 were non-resident travelers (77.09%) and 82 were residents (22.91%) of the second region (VA). Non-resident travel parties spent an average of \$264.08 per party in the surrounding counties along the Blue Ridge Parkway of Virginia. The average expenditures for non-resident travel party spending are presented in Table 1. Analysis of the results shown in the Table 1 reveals that 32 percent of the direct expenditures made in the surrounding counties along the Blue Ridge Parkway of North Carolina by non-resident travel parties were for lodging, and nearly 28 percent were for eating and drinking. Other substantial categories of expenditures were "transportation" which made up 15.57% of the total, and 11.09% for the "recreation and entertainment fees" category, for example. Total non-resident travel party spending was estimated by multiplying the average expenditures per party visit by the Parkway visitor attendance figures.

Table 1: Average Travel Expenditures of Non-resident Travel Parties to the Blue Ridge Parkway

Economic Sectors	Percent (%)		Dollars (\$)	
	NC	VA	NC	VA
Lodging	32.13	36.9	\$160.22	\$97.44
Food	27.96	32.99	\$139.46	\$87.13
Transportation	15.57	16.98	\$77.66	\$44.83
Recreation	11.09	6.45	\$55.31	\$17.03
Souvenirs	9.71	5.4	\$48.41	\$14.27
Film	1.41	0.5	\$7.01	\$1.25
Others	2.13	0.81	\$10.61	\$2.13
TOTAL	100.00	100.00	\$498.68	\$264.08

Economic Impacts on the Surrounding Counties of the Parkway

An input-output model in terms of changes in total output, income, value added, and employment describes the economic importance of a tourism activity (travel to the Parkway, in this case). Total output is the dollar value of goods and services produced to satisfy final demand for goods and services and the inter-industry transactions needed to produce them. Value added is equivalent to gross regional product (payments to labor, capital and taxes), or the value of total output minus input purchases. Thus, value added is always less than total output, but greater than income.

RACHEL JC CHEN, GENE L BROS & LARRY D GUSTKE

Tables 2 and 3 summarize the total economic impact effects of non-resident visitor spending along the Parkway. In the case of North Carolina model, non-resident travel parties of the Parkway provided \$1,315.68 million in direct expenditures in the regional economy. The establishments also generated an additional \$1,627.23 million in indirect and induced sales for a total of \$2,942.91 million in total industrial output. The total value-added to the Parkway resulting from total sales was estimated to be \$1,907.73 million. Finally, in the surrounding counties of the Blue Ridge Parkway of North Carolina, \$1,678.58 million in total income and 75,066 full and part-time jobs were contributed by Parkway non-resident visitors.

Table 2: Total Economic Impacts of the Blue Ridge Parkway, North Carolina

Industry	TIO* (MM\$)	Total Income (MM\$)	Total Value Added (MM\$)	Employment (Number of Jobs)
Agriculture Forestry	33.46	16.52	16.95	583.75
Mining	0.09	0.05	0.05	0.95
Construction	69.19	35.06	35.34	959.06
Food Processing	34.09	12.21	12.42	203.80
Apparel	100.18	44.75	45.16	1,514.17
Manufacturing (Other)	102.77	47.65	48.39	837.38
Auto Parts & Access.	7.32	1.89	2.06	44.2
Sporting Goods	9.49	4.82	4.90	46.87
Transportation, & Utilities	134.91	62.92	69.19	1,127.25
Communication	36.10	22.43	25.55	293.26
Wholesale Trade	111.37	54.34	65.33	1,601.61
Retail Trade	394.94	238.71	296.18	13,287.31
Eating & Drinking	422.30	211.48	241.75	15,846.13
Finance, Insurance & Real Estate	299.08	153.71	203.00	1,908.48
Hotels and Lodging Places	507.17	355.94	414.88	19,615.58
Services, Other	398.81	278.31	281.80	9,475.45
Auto Services	75.70	23.48	27.51	1,051.71
Other Amusements	167.12	88.85	91.82	5,557.73
Government Enterprise	38.83	25.46	25.47	1,111.67
TOTAL	2,942.91	1,678.58	1,907.73	75,066.37

(*TIO = Total Industrial Output)

A COMPREHENSIVE TRAVEL AND TOURISM STUDY

Table 3: Total Economic Impacts of the Blue Ridge Parkway, Virginia

Industry	TIO* (MM\$)	Total Income (MM\$)	Total Value Added (MM\$)	Employment (Number of Jobs)
Agriculture Forestry	5.52	2.85	2.91	139.52
Mining	0.13	0.07	0.08	1.07
Construction	14.45	7.07	7.13	210.78
Food Processing	2.93	0.57	0.57	12.99
Apparel	17.99	6.61	6.68	279.9
Manufacturing (Other)	14.02	4.62	4.77	112.38
Auto Parts & Access.	2.26	0.6	0.65	13.49
Sporting Goods	0.27	0.12	0.13	2.89
Transportation, & Utilities	16.64	7.85	8.62	160.77
Communication	3.99	2.29	2.64	36.74
Wholesale Trade	12.22	6.61	9.15	218.12
Retail Trade	58.85	35.34	45.19	2,021.28
Eating & Drinking	14.25	6.91	7.99	556.99
Finance, Insurance & Real Estate	72.75	31.89	43.81	444.19
Hotels and Lodging Places	168.25	119.68	136.95	5,877.88
Services, Other	54.94	36.01	36.48	1,631.33
Auto Services	22.87	6.23	6.89	258.39
Other Amusements	21.68	11.44	11.78	744.12
Government Enterprise	7.75	5.14	5.15	238.01
TOTAL	511.74	291.89	337.58	12,960.84

(*TIO = Total Industrial Output)

Additionally, in order to present the detailed estimates of economic effects included in Table 2, we compared these different industry effects to totals in the region. In first model (NC), the results indicated that about fifty-nine percent of the total value added impacts were in the 'Hotels and Lodging Places' (17.2%), 'Retail Trade' (13.4%), 'Services' (13.6%), and 'Eating and Drinking' (14.3%) industries. Most (77.5%) of the employment impacts were in the "Hotels and Lodging Places" (26.1%), "Eating and Drinking" (21.1%), "Retail Trade" (17.7%), and "Services" (12.6%) sectors. Nearly sixty-five percent of the total income impacts were in the "Hotel and Lodging Places" (21.2%), "Services" (16.6%), "Retail Trade" (14.2%) and "Eating and Drinking" (12.6%) sectors. About fifty-nine percent of the total industrial output impacts were in the "Hotels and Lodging Places" (17.2%), "Eating and Drinking" (14.3%), "Services" (13.6%), and "Retail Trade" (13.4%) sectors.

Resident and Non-Resident Comparisons

Visitors to the selected survey sites were made up of primarily travelers from outside the counties contiguous to the Parkway. Mean values for a variety of question responses of residents and non-residents groups were compared using the Statistical Analysis System (SAS) package. We used Chi-Square test, Fisher's exact test, or Student's t-test statistics to test the null hypothesis that no differences existed between two kinds of visitors. The Student's t test was used with interval data. Chi-Square and Fisher's exact tests were used to test for independence with nominal variables. The null hypotheses were rejected if the probability value was less than 0.05. Statistically significant group differences are highlighted and discussed in text.

Of 1,279 surveys returned, 94 were unusable due to the incomplete answer for the geography-based question in survey. This left a sample size of 1,185. Of 1,185 useful responses, 901 were non-resident travelers (76.1%) and 284 were residents (23.9%) of the defined region. The following is the key findings related to the Parkway marketing and management issues. The trip-related characteristics used in the study include trip type, length of the trip, frequency, planning time, information sources, types of activities engaged, satisfaction, motivations, and problem perceptions. The socio-demographic characteristics include age, occupation, income, and education.

Trip Characteristics

Sources of Information. The most important sources of information used while planning trips for resident visitors were previous experience on Parkway (68.28%, Table 4). State highway maps were used as information sources by 20.64 percent of Parkway resident visitors. The two most common sources of information used while planning trips for non-resident visitors were the previous experiences on Parkway (58.71%) and state highway map (58.45%). The most popular commercial information sources for non-resident visitors were attraction brochures (41.69%) and automobile clubs (22.86%). Non-resident travelers were more likely to use automobile clubs, state highway maps, magazine advertisements, magazine stories and articles, local tourist offices, state travel and tourism offices, and attraction brochures as sources of travel information than resident travelers. The results indicate that the two types of visitors using the above sources of information (automobile clubs, state highway maps, magazine advertisements, magazine stories and articles, local tourist offices, state travel and tourism offices, and attraction brochures) may be considered as different (statistically different at the 0.05 level).

A COMPREHENSIVE TRAVEL AND TOURISM STUDY

Table 4: Comparison Between Geography-Based Segments and Information-Used Characteristics

Characteristic	R n = 284	N-R n = 901	Signif.	Characteristic	R n = 284	N-R n = 901	Signif.
Sources of information used	%	%		Sources of information used	%	%	
automobile clubs				relatives			
yes (did use)	3%	22.86%		yes (did use)	16.11%	21.11%	
no (did not use)	97%	77.14%	0.001***F	no (did not use)	83.89%	78.89%	0.29 ^C
travel agents				friends			
yes (did use)	0%	5.37%		yes (did use)	18.94%	25.68%	
no (did not use)	100%	94.63%	0.16 ^F	no (did not use)	81.06%	74.32%	0.17 ^C
previous experience				local tourist offices			
yes (did use)	68.28%	58.71%		yes (did use)	0.7%	11.56%	
no (did not use)	31.72%	41.29%	0.374 ^C	no (did not use)	99.3%	88.44%	0.01**F
state highway maps				state travel offices			
yes (did use)	20.64%	58.45%		yes (did use)	0.8%	19.2%	
no (did not use)	79.36%	41.55%	0.001***C	no (did not use)	99.2%	81.8%	0.001***F
attraction brochures				television			
yes (did use)	17.21%	41.69%		yes (did use)	3.27%	3.42%	
no (did not use)	82.79%	58.31%	0.001***C	no (did not use)	96.73%	96.58%	0.7 ^F
commercial guidebooks				radio			
yes (did use)	7.51%	13.57%		yes (did use)	0%	0.9%	
no (did not use)	92.49%	86.43%	0.119 ^F	no (did not use)	100%	99.1%	0.89 ^F
magazine ads				newspaper ads			
yes (did use)	1%	9.28%		yes (did use)	1.3%	3.06%	
no (did not use)	99%	90.72%	0.024**F	no (did not use)	98.7%	96.94%	0.41 ^F
magazine articles				newspaper articles			
yes (did use)	2.72%	11.76%		yes (did use)	1.17%	5.98%	
no (did not use)	97.28%	89.24%	0.039**F	no (did not use)	98.83%	94.02%	0.19 ^F

R = Resident visitors; N-R = Non-Resident visitors; Signf. = Significant level; *** = Significant at the 0.01 level; ** = Significant at the 0.05 level; F = Fisher's exact test; C = Chi-square test.

Purposes of the trip. The majority of the resident visitors reported their trip purposes as outdoor recreation (47.76%), and visiting family/friends (18.47%, Table 5). For non-resident visitors, the most common trip purposes were outdoor recreation (39.89%), and just passing through (18.93%). The results indicate that the purposes of the trip for residents and non-residents could not be considered statistically different at the 0.05 level.

RACHEL JC CHEN, GENE L BROS & LARRY D GUSTKE

Table 5: Comparison Between Geography-Based Segments and Trip Characteristics

Characteristic	R	N-R	Signif.	Characteristic	R	N-R	Signif.
Purposes of the trip	n=284%	n=901%		Engaged activities	n=284%	n=901%	
just passing through	9.8%	18.93%		camping			
visiting friends/relatives	18.47%	14.29%		yes (dp)	9.1%	15.02%	
outdoor recreation	47.76%	39.89%		no (dnp)	90.9%	84.98%	0.21 ^F
part of a group tour	0%	3.77%		visiting a scenic area			
business	1.5%	4.01%		yes (dp)	83.5%	93%	
other	21.47%	19.11%	0.33 ^F	no (dnp)	16.5%	7%	0.014 ^{**C}
When the trip was planned	n=284%	n=901%		visiting a museum	59.2%	68.1%	
decided to go today	51.02%	9.1%		yes (dp)			
less than one week	35.07%	11.8%		no (dnp)	40.8%	31.9%	0.261 ^C
1 week but < 2 weeks	5.98%	8.7%		fishing			
2 weeks but < 1 month	4.87%	15%		yes (dp)	8.8%	3.4%	
1 month but < 3 months	2.06%	40%		no (dnp)	91.2%	96.6%	0.09 ^F
> 3 months	0.97%	15.4%	0.001 ^{***F}	hiking			
Nights away	n = 284	n = 901		yes (dp)	35.8%	40%	
yes	9.77%	79.86%		no (dnp)	64.2%	60%	0.5 ^C
no	90.23%	20.14%	0.001 ^{***C}	boating			
Types of group	n = 284	n = 901		yes (dp)	2.3%	1.8%	
family	63.12%	67.27%		no (dnp)	97.7%	98.2%	0.59 ^F
friends	21.02%	15.06%		skiing			
family and friends	7.08%	9.8%		yes (dp)	4.8%	1.5%	
business associates	0%	0.5%		no (dnp)	95.2%	98.5%	0.13 ^F
organized group	0%	3.1%		visited alone			
visited alone	7%	3.5%		other	1.78%	0.77%	0.329 ^F
other	1.78%	0.77%					

R = Resident visitors; N-R = Non-Resident visitors; Signif. = Significant level; *** = Significant at the 0.01 level; ** = Significant at the 0.05 level; F = Fisher's exact test; C = Chi-square test; dp=did participate; dnp=didnot participate.

A COMPREHENSIVE TRAVEL AND TOURISM STUDY

When the trip was planned. Differences in the trip plans of resident and non-resident travelers were statistically significant ($p < 0.001$). Most resident travelers planned their trips less than 2 weeks in advance (92.07%), with 51.02 percent planning to go today, 35.07 percent planning less than one week in advance, and 5.98 percent planning between one and two weeks. In contrast, the majority (70.4%) of non-resident travelers reported planning their trips more than two weeks in advance (Table 5).

Nights away from home. A statistically significant difference ($p < 0.001$) was found in the nights away from home of resident and non-resident travelers (Table 5). Most resident visitors (90.23%) indicated that their trips did not include an overnight stay away from home. The majority (79.86%) of non-resident visitors did stay away from home during their trips along the Parkway.

Types of Group. Resident visitors (63.12%) and non-resident visitors (67.27%) traveled with their families (Table 5). At the 0.05 level, the results indicate that the resident and non-resident travelers were similar in the kinds of groups with which they traveled.

Activities Engaged. Resident and non-resident travelers both liked visiting a historical site, visiting a museum, and hiking (Table 5). The results indicate that the two types of visitors were engaged in similar activities. Non-resident travelers were more likely to visit a scenic area than resident travelers. A statistically significant difference ($p < 0.014$) was found in the "visiting a scenic area" category for resident and non-resident travelers.

Motivation. The benefits most important to resident visitors were to observe the beauty of nature (6.66 on a 1 to 7 scale), to feel close to nature (6.44), to get away from commercialized "tourist traps" (6.28), and to spend time with family and friends (6.04, Table 6). The least important benefits to resident visitors were to tell others at home about the trip (2.9), and get some exercise (4.65). For non-resident visitors, the most important benefits were to observe the beauty of nature (6.65 on a 1 to 7 scale), to have a peaceful vacation (6.03), and to feel close to nature (5.98). The least important benefits to non-resident visitors were to get some exercise (4.8) and tell others at home about the trip (3.34). Differences in the "feel close to nature" category for resident and non-resident travelers were statistically significant ($p < 0.012$). In addition, differences in the "get away from commercialized traps" category were also statistically significant ($p < 0.001$).

RACHEL JC CHEN, GENE L BROS & LARRY D GUSTKE

Table 6: Comparison Between Geography-Based Segments And Motivation/Problem Characteristics

Characteristic	R	N-R	T-test	Characteristic	R	N-R	T-test
Motivation ^a				Problems ^b			
	n = 284	n = 901			n = 284	n = 894	
observe the beauty of nature	6.66	6.65	0.95	too much traffic	2.62	2.43	0.44
	n = 277	n = 870			n = 284	n = 883	
have a peaceful vacation	5.53	6.03	0.16	inadequate ranger	2.24	2.1	0.57
	n = 277	n = 858			n = 284	n = 885	
escape from work pressures 0.027**	5.1	5.23	0.618	rough parkway surface		2.43	1.92
	n = 280	n = 886			n = 284	n = 887	
feel close to nature	6.44	5.98	0.012**	litter and glass	1.68	1.57	0.52
	n = 280	n = 867			n = 284	n = 886	
experience different places	4.9	5.5	0.11	lack of drinking water	2.41	2.34	0.68
	n = 280	n = 860			n = 284	n = 892	
get away from crowds	5.64	5.29	0.182	lack of restrooms	2.74	2.85	0.71
	n = 280	n = 873			n = 284	n = 891	
get some fresh air	5.6	5.63	0.99	narrow parkway width	1.74	2.05	0.11
	n = 280	n = 873			n = 284	n = 886	
get some exercise	4.65	4.8	0.64	lack of directional signs	1.86	2.1	0.35
	n = 278	n = 853			n = 284	n = 886	
tell others about it at home	2.9	3.34	0.2	lack of parking	2.05	2.2	0.6
	n = 281	n = 865			n = 284	n = 882	
spend time with family/friends	6.04	5.43	0.075	lack of information	1.42	1.94	0.001***
	n = 281	n = 862			n = 284	n = 889	
away from commercialized traps	6.28	5.38	0.001**	lack of gas station	2.08	2.38	0.207

R = Resident visitors; N-R = Non-Resident visitors; Signf. = Significant level; a: 1 = not important, 7 = extremely important (reported with average grade); b: 1 = not a problem, 7 = major problem (reported with average grade); *** = Significant at the 0.01 level; ** = Significant at the 0.05 level.

A COMPREHENSIVE TRAVEL AND TOURISM STUDY

Problems of Parkway. The problems on the Blue Ridge Parkway according to resident visitors were lack of restrooms (mean of 2.74 on a 1 to 7 scale, 1 = not a problem & 7 = major problem), and too much traffic (2.62, Table 6). To non-resident visitors, the problems on the Parkway were the same as resident visitors' perceptions. These included a lack of restrooms (2.85) and too much traffic (2.43). There was a statistical difference between the resident and non-resident visitors on their perceptions of the "rough parkway surface" ($p < 0.027$), and "lack of information to plan visits" ($p < 0.001$). Non-resident visitors were more likely to experience that lack of information to plan visits to the Parkway was a problem than resident visitors. On the other hand, resident visitors were more likely to feel that the "rough parkway surface" was a problem than non-resident visitors.

Degree of satisfaction. The majority of resident (mean of 6.3 on a 1 to 7 scale, 1 = very dissatisfied & 7 = very satisfied) and non-resident travelers (6.14) indicated that they were satisfied with the Blue Ridge Parkway, and would come back to visit the Parkway (100% of resident visitors would come back; 98.5% of non-resident visitors would come back to visit the Parkway, Table 7). The results indicate that the two types of visitors had a similar level of satisfaction with the Parkway ($p < 0.11$).

Times for visiting the Parkway. About eighty percent of non-resident visitors had traveled to the Parkway, and 100 percent of resident visitors had been to the Parkway (Table 7). Statistically significant differences were found in the "first time visit" categories of resident and non-resident travelers ($p < 0.001$). The mean number of resident visitor trips to the Blue Ridge Parkway during the past two years by these previous visitors was 7, comparing to 3 time visits for non-resident visitors. A statistically significant difference ($p < 0.001$) was found in the "times of visiting" category of resident and non-resident travelers.

RACHEL JC CHEN, GENE L BROS & LARRY D GUSTKE

Table 7: Comparison Between Geography-Based Segments and Frequency Characteristics

Characteristic	R	N-R	Signif.	Characteristic	R	N-R	Signif.
Degree of satisfaction ^a of visiting?	n=284	n=900		The 1s-time	n=284%	n=897%	
	6.3	6.14	0.11 ^T	yes	0%	20%	
				no	100%	80%	0.001 ^{***F}
	n = 284	n = 900					
Will revisit?	%	%		How many times	n = 283	n = 768	
yes	100%	98.5%		have you visited the	average	average	
no	0%	1.5%	0.57 ^F	Parkway during the	7	3	0.001 ^{**T}
				last 2 years?			

R = Resident visitors; N-R = Non-Resident visitors; Signf. = Significant level; a: 1 = very dissatisfied, 7 = very satisfied (reported with average grade); *** = Significant at the 0.01 level; ** = Significant at the 0.05 level; F = Fisher's exact test; T = T-test.

Socio-demographic Characteristics

Age. The average age of resident travelers (49.2, Table 8) was not significantly different ($p < 0.427$) from that of non-resident travelers' age (51.2).

Table 8: Comparison Between Geography-Based Segments And Socio-Demographic Characteristics

Characteristic	R	N-R	Signif.	Characteristic	R	N-R	Signif.
Education	n = 284	n = 901		Occupation	n = 284	n = 897	
	%	%			%	%	
grade school	2.5%	1%		managerial specialty	23.2%	43.8%	
high school	19.7%	18.1%		technical/sale/service		12.9%	7.2%
college	48.5%	49.6%		fabricator/laborer	12.9%	5.9%	
graduate school	28.7%	29.9%		retired	35.8%	28.1%	
other	0.6%	1.4%	0.23 ^F	other	15.2%	15%	0.065 ^{*C}
Income	n = 284	n = 861		Age	n = 284	n = 900	
	%	%		(average #)	49.2	51.2	0.427 ^T
under \$20,000	11.4%	6.9%					
\$20,000 to \$39,999	33.2%	23%					
\$40,000 to \$59,999	29.2%	28.3%					
\$60,000 to \$79,999	13.5%	17.8%					
\$80,000 or more	12.7%	24%	0.25 ^C				

R = Resident visitors; N-R = Non-Resident visitors; Signf. = Significant level; *** = Significant at the 0.01 level; ** = Significant at the 0.05 level; * = Significant at the 0.1 level; F = Fisher's exact test; C = Chi-square test; T = T-test.

Education. Differences in the education categories were not statistically significant at the 0.05 level ($p < 0.23$, Table 8).

Occupation. Over fifty percent of the non-resident travelers indicated that they were in the professional/technical field. More resident travelers appeared (35.8%, Table 8) to be retired than non-resident travelers (28.1%). The most

A COMPREHENSIVE TRAVEL AND TOURISM STUDY

common occupations of resident travel party leaders were retired (35.8%) and professional and technical (36.1%). Differences in the occupation status of resident and non-resident travelers were statistically significant ($p < 0.065$).

Income. The majority of resident travelers (62.4%, Table 8) reported earning incomes totaling between \$20,000 and \$59,999. Of non-resident visitor households, 51.3 percent had income between \$20,000 and \$59,999; about 24 percent had household incomes greater than \$80,000 per year. Differences in the incomes of resident and non-resident travelers were not statistically significant ($p < 0.25$).

The results shown in Tables 4 - 7 indicate that seven of the ten trip characteristics for the two groups of travelers were statistically significantly different at the 5% level. These include: when the trip was planned, sources of information used, nights away, activities engaged, problems of the Parkway, motivation, and times for visiting the Parkway. Table 8 summarizes the demographic characteristics of the two groups of travelers and indicates that the occupation characteristic was statistically significantly different at the 10% level.

Discussions, Suggestions, and Future Research

The economic impact assessment. The economic impact of travel to the Blue Ridge Parkway extended beyond the jobs and income it directly created. The largest beneficiaries of the Parkway's economic impact in NC were in the "Hotels and Lodging Places", "Eating and Drinking", "Retail Trade", and "Services" sectors. The largest beneficiaries of the Parkway's economic impact in VA were in the "Hotels and Lodging Places", "Retail Trade", and "Services" sectors. The above business sectors could have a higher degree of dependence on the "non-resident tourist industry". Thus, the use of earned money to improve facilities, goods, and services in businesses (lodging places, food industries, retails, and services) could increase visitor numbers and generate greater economic impacts. Since the lodging industry has benefited from non-resident visitors, it should concentrate promotional efforts on this non-resident visitor segment. In addition, while the Parkway is closed (due to weather, construction, or policy conditions), the tourism-related organizations along the Parkway should cooperate with each other in creating new recreational activity opportunities such as special events in the adjacent local areas. These opportunities should entice the visitors to play, stay longer and spend money, but also help avoid the losses to a local economy generated by the lack of non-resident visitors.

The I/O IMPLAN model only estimates “new money” effects in the defined area and provides total economic impacts of non-resident traveler visitation to the Parkway. In this study, IMPLAN inputs only the spending profile and visitor attendance of Parkway non-resident travel parties. In addition to “impact analysis”, IMPLAN is also able to estimate “significance or interdependence analysis” which includes resident and nonresident visitors’ spending contribution to a defined region. However, “significance or interdependence analysis” is difficult to interpret in a local economy.

As stated earlier, visitors to the Parkway are made up of primarily travelers from outside the counties contiguous to the Parkway. According to the results of this NC case, of the 827 useful responses, 725 were non-resident travelers (87.67%) and 102 were residents (12.33%) of the region. Suppose 1,000 travel groups visit to the Parkway, 877 parties would be estimated to be non-resident groups and 123 travel parties would be from the counties adjacent to the Parkway. Therefore, tourism-related-organizations along the Parkway may consider applying more promotional activities such as “10% discount for non-residents’ and 15% discount for residents’ purchasing at any souvenir store” to increase both resident and non-resident visitors’ purchasing power. In addition, creating various programs such as “New Friends of the Blue Ridge Parkway”, “Free Family-Night for Ten-Time Visitors”, “A Calling from the Blue Ridge Parkway - It’s Your Second Home”, could encourage non-resident visitors to revisit and educate them how to protect this mountain region.

Future studies of the Blue Ridge Parkway using the I/O IMPLAN System may include conducting a survey of local businesses in order to generate more reasonable multipliers for the impact analysis. This research focuses on using IMPLAN SYSTEM to get results of the total economic impact of travel to the Blue Ridge Parkway. Applying other economic models to the Parkway data would also be appropriate. However, in the tourism literature, studies of comparison among different economic analysis models are rare. Therefore, determining the differences between IMPLAN and other models would be able to provide useful knowledge for choosing the most appropriate model(s) to estimate the economic impacts in different situations. Other economic analysis models could be applied to achieve the objectives of comparing different models for providing credibility of an economic impact study. Since each model has different assumptions and different components including cost, time, geographic region, sectors of a spending profile and so on, developing a comparison methodology for evaluating different economic analysis models would be a difficult task. Human resources, and efficiency are also important components which influence the use and comparison of the models. Finally, it should be reemphasized that economists and researchers should conduct

A COMPREHENSIVE TRAVEL AND TOURISM STUDY

periodic reviews of management policies based on the most current information available about the economic impact of visitors. Such reviews are needed because of the changing economic trends and intangible factors in the real world.

Resident and Non-Resident Comparisons. The generality of conclusions drawn from this survey is partially limited by the sampling procedure, which drew only from visitors using the Parkway visitor centers. It seems plausible that the proportion of resident visitors using the centers might differ from the proportion of nonresident visitors, implying that the sample may be biased in terms of its breakdown into residents versus nonresidents. However, assessing this breakdown was not a purpose of the survey, and there are no obvious reasons why it might be biased with respect to comparisons of the characteristics of residents versus nonresidents.

The key findings of this study are that travel motivations, problem perceptions, several trip-related characteristic, and socio-demographics differences exist between resident and non-resident visitors. The respondents of non-resident visitors are more likely to be employed in professional occupations, and less likely to be retired. In addition, non-resident visitors are more likely to plan their trips to the Parkway more than two weeks but less than three months in advance, more likely to stay away from home during their trips, and more likely to use automobile clubs, local tourist offices, state travel and tourism offices, state highway maps, magazine advertisements, and attraction brochures for making their trip plans.

Marketers of nature-based tourism may consider using strategic marketing implications based on the key findings of this study. For example, chamber of commerce groups, tourism-related agencies, and community businesses who advertise about the parkway may include more appropriate and compatible content and create a positive image of the Blue Ridge Parkway. Since non-residents are using more sources of information for their trip plans, marketers of various tourism related organizations may consider providing non-resident visitors with more efficient and accessible information (for example, on-line reservation services) in order to help them arrange their future trips to the Parkway.

Resident visitors tend to be closer to nature, they want to get away from commercialized tourist traps, are less likely to be visiting a scenic area, and are likely to be bothered by the rough Parkway surface. On the other hand, non-resident visitors are more likely to be visiting a scenic area, and tend to be more concerned by the lack of information to plan visits. Therefore, improving the maintenance of the Parkway surface and increasing trip-planning sources may increase the levels of visitors' satisfaction. However, to achieve the goals

of improvement, protection, and better development of the Parkway, service managers and decision-makers should not only focus on differences, but also need to be aware of visitors' motivations, opinions and perceptions.

Understanding the factors that motivate tourists is a central concept in attempts to gain knowledge of tourists' behaviors (Crompton 1979; Ross and Iso-Ahola 1991). The motivations most important to resident visitors are to observe the beauty of nature, to feel close to nature, to get away from commercialized traps, and to spend time with family and friends. For non-resident visitors, the most important motivations are to observe the beauty of nature, to have a peaceful vacation, to feel close to nature, and to get some fresh air. Since the Blue Ridge Parkway contains significant natural features and is a carefully designed and engineered creation, building awareness and a positive perception of the Blue Ridge Parkway as a regional scenic destination may influence the decisions of people considering the Parkway for a vacation. Marketers may consider promoting concepts such as "enjoy the beauty of nature", "escape the humdrum of daily life", or "family-based destination" to those people with/without prior parkway visiting experience.

While traveling along the Parkway, resident and non-resident travelers both like visiting a scenic area, visiting a historical site, visiting a museum, and hiking. Therefore, joint promotion efforts with historical sites and museums may inform visitors about the location, time schedules, and the subjects of upcoming events along the Parkway. Indeed, because some groups of people think of rural lands as without economic value, the finding reported above (visitors like visiting a scenic area, and hiking along the Parkway) reinforce the importance of the beauty of the Parkway, its natural resources, and the interdependence of the local communities and the natural resources.

The problems on the Blue Ridge Parkway identified by resident visitors are lack of restrooms, too much traffic, rough Parkway surface, and lack of drinking water. To non-resident visitors, the problems on the Parkway are lack of restrooms, too much traffic, lack of gas stations, and lack of drinking water. In order to increase visitors' satisfaction and provide a pleasant visiting experience, high attendance visitor centers may consider preparing temporary restrooms (or constructing more restrooms), water fountains, or providing maps showing all the nearest facilities which are open for visitors in the adjacent counties along the Parkway. To relieve some of the "too much traffic" perception, offering promotion packages in the shoulder and off seasons may improve the image of the Parkway by relieving some of the congestion. Overall, most resident and non-resident travelers indicate that they are satisfied with the Blue Ridge Parkway, and would come back to visit the Parkway.

A COMPREHENSIVE TRAVEL AND TOURISM STUDY

A survey to help management identify destination problems and marketing segments would make a good future study. Future research may focus on the benefits derived by visitors and visitor expenditure profile data. Because of the purpose of the study and budget constraints, this study mainly focuses on interviewing travelers at visitor centers along the parkway. However, parkway picnic areas, campgrounds, hiking trails and fishing streams may or may not attract a very different audience with some levels of different preferences and demographics. In this study, most of the survey sites are relatively close to urban Asheville and to the rather upscale Blowing Rock community, which may or may not skewed responses. In addition, people who seek out visitor centers (including to purchase the high quality and sometimes handsomely priced craft items offered at the Folk Art Center) may or may not have perceptions, expectations and preferences that differ significantly from other Parkway users. Thus, future studies may consider including more diverse sampling sites. Other segments such as day visitors, business groups, and group tours should be investigated. Although the economic benefits brought into a destination by non-resident visitors may be more significant than those of resident visitors, future studies may aim on the trip-purpose-based segmentation that may enrich strategic marketing plan development in tourism industry. Federal agencies may consider cooperating with state/private tourism-related organization to provide smarter, better, and more efficient strategies to increase the market size of visitors to the Parkway as well as providing a practical policy for the long term protection of the environmental resources along the Blue Ridge Parkway.

REFERENCES

- Alward, G. S., and Palmer, C. J. (1983). IMPLAN: An input-output analysis system for Forest Service planning.
- In Seppala, R., Row, C., and Morgan, A. (Eds.). *Forest sector models: Proceedings of the first North American conference* (pp. 131-140). Oxford, England: A B Academic Publishers.
- Blue Ridge Parkway: The story behind the scenery*. (1993). Edited by Mary L. Van Camp. Book design by K.C. DenDooven. Fourth Printing.
- Cordell, H., Bergstrom, J. and Watson, A. (1992). Economic growth and interdependence effects of state park visitation in local and state economies. *Journal of Leisure Research*, 24, 253-268.
- Crompton, J. L. (1979). Motivations for pleasure vacations. *Annals of Tourism Research*, 6, 408-424.
- Dawson, S., Blahna, D. and Keith, J. (1993). Expected and actual regional economic impacts of Great Basin National Park. *Journal of Park and Recreation Administration*, 11, 45-59.
- Finn, A. and Erdem, T. (1995). The economic impact of a mega-multi-mall: estimation issues in the case of west edmonton mall. *Tourism Management*, 16, 367-373.

RACHEL JC CHEN, GENE L BROS & LARRY D GUSTKE

- Gazel, R. C. and Schwer, R. K. (1997). Beyond rock and roll: The economic impact of the Grateful Dead on a local economy. *Journal of Cultural Economics*, 21, 41-55.
- Getz, D. (1994). Residents' attitudes towards tourism: A longitudinal study in Spey Valley, Scotland. *Tourism Management*, 15, 247-254.
- Gnoth, J. (1997). Tourism motivation and expectation formation. *Annals of Tourism Research*, 21, 265-82.
- Harris, C. C., Tynon, J. F. and McLaughlin, W. J. (1990). A comprehensive method for studying leisure travel. *Journal of Travel Research*, 24, 39-44.
- Lindberg, K. and Johnson, R. L. (1997). Modeling resident attitudes toward tourism. *Annals of Tourism Research*, 24, 402-24.
- Liu, J. C., Sheldon, P. J. and Var, T. (1987). Resident perceptions of the environmental impacts of tourism. *Annals of Tourism Research*, 14, 17-37.
- MacClean, J. R., Peterson, J. A. and Martin, W. D. (1985). *Recreation and leisure: The changing scene*. 4th ed. New York: Macmillan Publishing Company.
- Mansfeld, Y. (1992). From motivation to actual travel. *Annals of Tourism Research*, 19, 399-419.
- Mason, P. and Cheyne, J. (2000). Residents' attitudes to proposed tourism development. *Annals of Tourism Research*, 27, 391-411.
- McCool, S. and Martin, S. R. (1994). Community attachment and attitudes toward tourism development. *Journal of Travel Research*, 32, 29-34.
- McHone, W. W. and Rungeling, B. (2000). Practical issues in measuring the impact of a cultural tourist event in a major tourist destination. *Journal of Travel Research*, 38, 299-302.
- Miller, R. E., & Blair, P. D. (1985). *Input-output analysis: Foundations and extensions*. Prentice-Hall, Englewood Cliffs, New Jersey.
- Minnesota IMPLAN Group, Inc. (1997). *IMPLAN Professional: Social accounting & impact analysis software*. Minnesota IMPLAN Group, Inc., Minneapolis.
- Mules, T. and Faulkner, B. (1996). An economic perspective on special events. *Tourism Economics*, 2, 107-117.
- Palmer, C. & Siverts, E. (1985).
- IMPLAN analysis guide. Ft. Collins, CO: Land management planning systems section, Rocky Mountain Forest and Range Experiment Station, U.S.D.A. Forest Service.
- Ross, E. L. D. and Iso-Ahola, S. E. (1991). Sightseeing tourists' motivation and satisfaction. *Annals of Tourism Research*, 18, 226-237.
- Southeastern Research Institute. (1990). Final case study for the national scenic byways study: A case study for the Blue Ridge Parkway. (Publication No. FHWA-ED 90-043). Atlanta, Georgia: US Department of Transportation, Federal Highway Administration.
- Sullivan, J., Patterson, M. and Williams, D. (1992). Shenandoah National Park: Economic impacts and visitor perceptions. National Park Service Manuscript.
- Uysal, M., Pomeroy, R., & Potts, T. (1992). County-level tourism impact assessment: A case study in Beaufort County, South Carolina. *Journal of Tourism Research*, 31, 1, 57-65.
- Williams, R. A. (1981). The region impact of The Blue Ridge Parkway in Virginia. Blacksburg, Virginia: Virginia Polytechnic Institute and State University.

A COMPREHENSIVE TRAVEL AND TOURISM STUDY

- Williams, R. A. and Knoeber, C. R. (1979). Economic impacts of the Blue Ridge Parkway in Virginia and North Carolina. Blacksburg, Virginia: Virginia Polytechnic Institute and State University.
- Yuan, M. and Christensen, N. (1994). Wildland -influenced economic impacts of nonresident travel Portal communities: The case of Missoula, Montana. *Journal of Travel Research*, 32, 26-31.

About the author

Dr. Rachel J. C. Chen is an Assistant Professor of Hotel, Restaurant, & Tourism Management, Department of Consumer Services Management, the University of Tennessee. Dr. Gene L. Brothers and Dr. Larry D. Gustke are Associate Professors in the Department of Parks, Recreation, and Tourism Management at North Carolina State University

Correspondence concerning this article should be addressed to Dr. Rachel J. C. Chen, Assistant Professor of Hotel, Restaurant, & Tourism Management, Department of Consumer Services Management, the University of Tennessee, 247 Jessie Harris Bldg., Knoxville, TN 37996-1911, USA; Phone: (865) 974-0505; Fax: (865) 974-5236; Email: rchen@utk.edu.