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Spatial Variation in Tourism in the United States: An Industrial View

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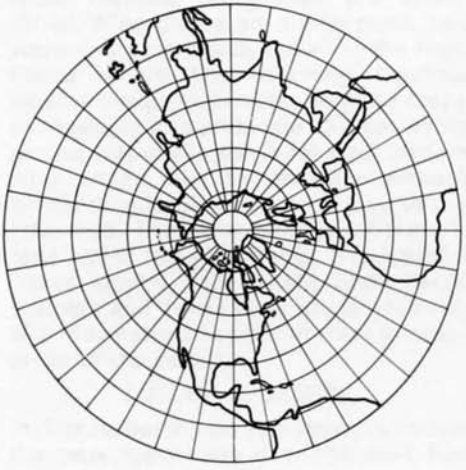

ABSTRACT

This paper attempts to empirically document the spatial variations in employment and revenue for selected businesses in the tourism industries of 20 states under study. Employment and revenue figures were classified by US Census SIC codes, and separated into two classifications: direct and supporting tourist services. In states with large economies, a diversified economic base frequently minimizes tourism's proportional importance to statewide service economy employment; however, in many states with small economic and population bases, tourism employment made a significant proportional contribution to the service labor market. States with large economies have high absolute revenue in both the direct and supporting tourist services due to large-scale economic activity and linkage. In states with smaller economies, absolute revenue in tourist services is frequently lower due to reduced population and economic size. As statewide revenue in direct tourist services increases, revenue in supporting tourist services tends to increase in a similar fashion, illustrating the proportionality between the direct and supporting tourist services.

KEY WORDS: Tourism industry, service economy, employment, revenue, tourist businesses.

INTRODUCTION

In 1983, expenditure for tourism in the United States amounted to $211 billion, 6.4 percent of the GNP (Lundberg, 1985). This expenditure provided employment for 4.6 million Americans at every skill level (United States Travel and Data Center, 1983). In 39 states, tourism is classified as one of the three largest industries based on revenue generation. It is also a highly diversified industry in that it is composed of over a million component companies, 99 percent of which are classified as small firms (United States Travel and Data Center, 1983).

In economic terms, businesses involved with the tourism industry are linked together, each one affecting the

other. When these links increase in number and strength, economic activity in an area increases (Lundberg, 1985). As economic activity in an area increases, new jobs and higher revenues are usually the result. Although these statements may appear rudimentary, "there is a paucity of detailed empirical studies on tourism and employment " (Mathieson and Wall, 1982 p. 79). This paper attempts to partially redress this problem by analyzing the spatial variation in tourism employment and revenue based on the standard industrial classification (SIC) system, which is used in most developed nations of the world today.

LITERATURE REVIEW

Gee, Makens, and Choy (1989) state that businesses benefiting from tourism in terms of employment and revenue are linked together. Under this linking concept, the organizations thought of as components of the travel industry are categorized as: direct providers, supporting services, and developmental organizations. Developmental organizations (tourism planning boards, chambers of commerce, vocational training institutions) will not be dealt with in this paper since they are not economic enterprises.

Although the importance of direct tourist-provider establishments should not be denied, supporting tourist services must also be examined to present a complete picture of the tourism industry in a destination area. According to Jafari (1983 p. 72), "The tourism industry with all its magnitude and scope, is still dependent on the availability and quality of these resident-oriented facilities (supporting services), and generally speaking, it cannot survive without them". Another geographer, Smith (1988), classifies the direct tourist-providers and supporting tourist services into six categories of traveller's commodities: accommodation; transportation; travel services; food services; activities and attractions; and retail goods. Smith then distinguishes between Tier 1 commodities ("pure" tourism businesses, or firms that would cease to exist in the absence of travel) and Tier 2 commodities ("mixed" goods and services that cater to residents as well as tourists, and would continue to operate if there were not travel). The idea of "pure" and "mixed" traveller's commodities coincides with Gee *et al.* (1989) distinction between direct tourist-providers and supporting tourist services. Gee *et al.* (1989) continue by stating that tourist expenditure can increase the general level of economic activity in a host or destination area both directly and indirectly, with the two most visible effects being employment and income.

Mathieson and Wall (1989 p. 72) suggest that "employment and income are closely though not perfectly related. They are analogous in that primary or direct employment and income can be distinguished from indirect or secondary employment and income." They elaborate on the comparability of employment and income by stating that there is a causal relationship between tourism generated employment and income, but they are not of equal size nor created at the same time. According to Mathieson and Wall (1982), a considerable amount of research has been done on the effects of tourist expenditure on income. However, much less is known about the spatial variation in the interrelationships of employment and revenue broken down by standard industrial classification (SIC) categories. Smith (1988) operationally defines the tourism industry based on Canadian SIC codes, but applications of a supply-side definition of tourism in the United States have not been empirically documented in detail.

This study is an attempt to empirically document the spatial variation in employment and revenue for selected SIC's of the tourism industry. The SIC coding system provides an objective and standardized classification system that can be used to articulate the industrial geography of tourism. A distinction will be made between the direct tourist providers and the supporting tourist services, and it is hypothesized that statewide revenue in direct provider sectors varies proportionally with statewide revenue in supporting service sectors.

RESEARCH DESIGN

The United States domestic tourism industry can be defined as the sum total of providers that furnish goods, services, or facilities to promote business, pleasure, and/or leisure activity for people away from home for over 24 hours. Direct tourist providers are businesses directly related to tourism, whose main source of revenue is expenditure by people travelling; and who would cease to exist without tourist activity. According to Gee *et al.* (1989), the direct providers consist of airlines, hotels, ground transportation, amusement parks, and retail shops. However, since ground transportation, travel agencies, restaurants, and retail shops do not rely solely upon expenditures by tourists, they should be classified as supporting tourist services. Consequently, in this paper, the direct tourist providers include: hotels and motels, air transportation of passengers, travel agents, and tour operators (Table 1).

Supporting tourist services are businesses indirectly related to tourism, who supply goods and services to travellers as well as residents; therefore these firms would continue to exist without tourist activity, but at a greatly reduced level. There is a great deal of controversy over which businesses comprise the supporting tourist services. Gee *et al.* (1989) consider tour organizers, travel publications, hotel management, as well as contract food and laundry services to be supporting sectors. However, these businesses could fail if not for tourism; therefore they should not be considered as supporting tourist services. Smith (1988) suggests that Tier 2 commodities (supporting services) should include restaurants, retal car agencies, and recreational and amusement related facilities. In this investigation then, the supporting tourist services include: eating places, amusement parks, and passenger car rental agencies (Table 1). Although the lists of direct and supporting tourist services are not exhaustive, adequate information exists for each of these SIC categories, thus allowing a rudimentary analysis of some of the key sectors involved with the tourism industry.

The employment and receipts/revenues/sales figures for direct and supporting tourist services were taken at a statewide level from the following documents: Census of Service Industries (1987), Census of Retail Trade (1987), Census of Transportation (1987), and the Census of County Business Patterns (1987). Employment in these documents is defined as the total number of full and part-time employees, including salaried officers and executives of corporations who were on the payroll for the pay period including March 12, 1987.

To capture the monetary significance of each tourist sector, each SIC category was defined either in terms of receipts, revenues, or sales. Receipts are defined by the Census of Service Industries as receipts from customers or clients for services rendered, the use of facilities, or from merchandise sold during 1987, whether or not payment was received in 1987. Revenues are defined by the Census of Transportation as gross revenue from clients or customers for services rendered, the use of facilities, and from merchandise sold during 1987. Travel agents report on a commission basis rather than gross billings. Tour operators report the difference between the price of their tours and the amounts paid to suppliers. Sales, according to the Census of Retail Trade consist of merchandise sold for cash or credit at retail and wholesale by establishments primarily engaged in retail trade. Receipts, revenues, and sales figures represent incoming funds or assets resulting from tourist expenditure to businesses in the tourism industry, and therefore will now be referred to collectively as revenue.

Only the premier states involved with the tourism industry were examined in order to concentrate on areas where tourism is a vital concern. The leading 20 states in economic terms were compiled by summing the employee totals for the most explicit examples of tourist activity: hotels and motels (SIC 7011) and air transportation (SIC 451), as seen in Table 2. According to Lundberg (1985), hotels and airlines serving an area have

TABLE 1
Tourism Businesses

SIC Code	Business Type	Definition
DIRECT PROVIDERS		
7011	Hotels and Motels	Commercial establishments known to the public as hotels, motor hotels, motels or tourist courts primarily engaged in providing lodging and/or meals.
451	Certified Air Transport	Establishments primarily engaged in furnishing air transportation to passengers over regular routes and on regular schedules.
4724	Travel Agents	Establishments primarily engaged in furnishing travel information, and acting as agents in arranging tours, transport, car rental, and lodging for travellers.
4725	Tour Operators	Establishments primarily engaged in arranging and assembling tours for sale through travel agents, or directly to travellers.
SUPPORTING SERVICES		
5812	Eating Places	Retail establishments primarily engaged in selling prepared food and drinks for immediate consumption on the premises.
7996	Amusement Parks	Establishments which group together a number of attractions such as mechanical rides, amusement devices, refreshment stands, and picnic grounds.
7514	Passenger Car Rental	Establishments primarily engaged in short-term rental of passenger cars without drivers, excluding leasing.

SOURCE: Census of Service Industries (1987), Census of Retail Trade (1987), Census of Transportation (1987), Census of County Business Patterns (1987)

a symbiotic relationship. Hotels and airlines are the most "pure" forms of tourism since all revenue in these businesses results from people engaging in some form of tourist activity away from home.

Since some states had a limited amount of activity within a particular tourist sector, some employment and/or revenue figures were withheld in the census publications for reasons of confidentiality. Another limitation existed when dealing with certified air transportation of passengers (SIC 451). Revenue figures were withheld since airlines do not report revenue amounts to the census on a statewide basis (Personal Communication, 1991).

TABLE 2

Top 20 Tourism Industry States Based on Employment in Hotels and Motels and Air Transportation of Passengers

State	1987 Employment in Hotels and Motels	1987 Employment in Air Transportation	Total
California	152,771	79,642	232,413
Florida	121,531	37,326	158,857
Texas	78,344	41,976	120,320
Nevada	114,109	2,654	116,320
New York	68,398	46,826	115,224
New Jersey	68,689	10,764	79,453
Illinois	45,542	33,563	79,105
Georgia	37,706	35,173	72,879
Pennsylvania	46,344	13,569	59,913
Virginia	41,893	13,334	55,227
Colorado	28,803	16,779	45,582
Missouri	28,691	15,835	44,526
North Carolina	28,085	15,303	43,388
Arizona	33,437	7,500 *	40,397
Massachusetts	32,533	7,500 *	40,033
Minnesota	22,362	17,500 *	39,862
Ohio	31,859	7,524	39,383
Hawaii	31,561	6,701	38,262
Michigan	26,610	11,359	37,969
Tennessee	24,082	6,346	30,428

* Denotes a median figure taken from the range provided

SOURCE: Census of Service Industries (1987), Census of County Business Patterns (1987)

Another constraint involved the revenue figures for businesses in the supporting tourist services, which represent expenditures by residents as well as tourists. In a study of the Canadian tourism industry, Smith (1988) empirically derived tourism ratios for the supporting tourist services (the percentage of revenue generated from tourist expenditure versus total revenue generated). Based on Smith's study, the tourism ratio for restaurants was 15 percent; for recreation and amusement related services 47 percent; and for car rental agencies 30 percent. Although these figures may vary slightly in the United States, they were used in this paper to yield more appropriate revenue figures for the supporting tourist services. Empirically derived percentages of employment generated in the supporting services from tourist expenditures were not available, so supporting tourist service employment is not examined in this study.

ANALYSIS AND FINDINGS

The top five tourism states in terms of total hotel and airline employment include: California, Florida, Texas, Nevada, and New York (Table 2 and Figure 1). All of these states except Nevada have a large population base, and a highly diversified economic base. Nevada, however, has some of the world's largest hotels and some of the most significant tourist attractions (e.g. Las Vegas, which attracted 18.1 million visitors in 1989; Figure 2).

When examining the relative magnitude of tourism as a component of the total statewide service labor market, the relative ranking of the top five states changes. Since tourism is a service industry, all of the components of tourism should be included in any aggregate measure of service employment. However, the U.S. Census in defining service employment does not include air transportation (SIC 451), travel agents (SIC 4724), tour operators (SIC 4725), nor eating places (SIC 5812) in its definition of the total service economy. Consequently, these SIC categories were added to the service employment totals (see Table 3).

The average contribution of direct provider tourist services to the statewide labor markets was 12 percent. However, in states with the largest number of service employees (e.g. California, New York, and Texas), the relative contribution of tourism employment to total service employment was below average. In states like California, New York, and Texas, a diversified economic base acts to minimize the importance of the tourism industry as a major labor market relative to other economic activities. Furthermore, in the rust-belt states of the northeast and midwest, direct tourism employment was very low (e.g. Ohio, Michigan, Minnesota, and Missouri), as was tourism's relative importance to the statewide service labor market. In northeastern and midwestern states, the labor market is focused primarily upon manufacturing and other service industries, and thus the tourism industry does not make as proportionally significant a contribution to the labor force or economy.

The "traditional" tourism states (e.g. Nevada and Hawaii) were heavily dependent on tourism for service sector employment. In Hawaii, 29 percent of all service employees are involved in direct provider tourism activities; the corresponding figure for Nevada was 50 percent. An underdeveloped economic system can inhibit linkage between economic sectors, resulting in the maximization of only a select few forms of service activitiy. Nevada and Hawaii are excellent examples of this phenomenon due to their over-dependance on tourism at the expense of other economic activities.

To summarize, the major tourism states (based on the relative share of tourism to the total service economy) appear to be Nevada (50%), Hawaii (29%), Colorado (13%), Florida (12%), and Georgia (12%). Nevada emerges as a major tourism state since it generates high levels of absolute employment in direct provider tourist services; and direct tourism employment is also a sig-

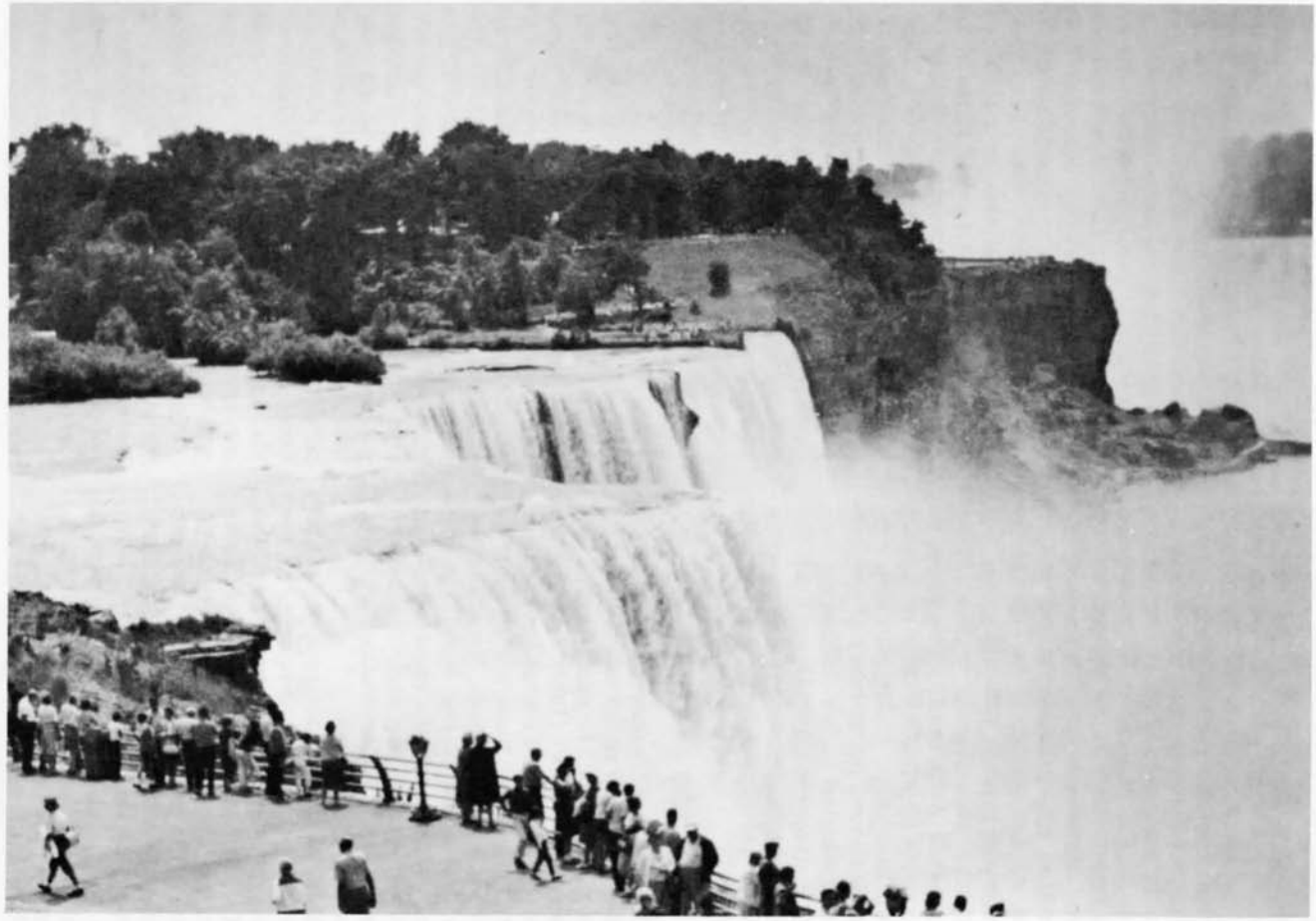

FIGURE 1. Niagara Falls, New York, one of the state's most visited natural resource-based tourist products.

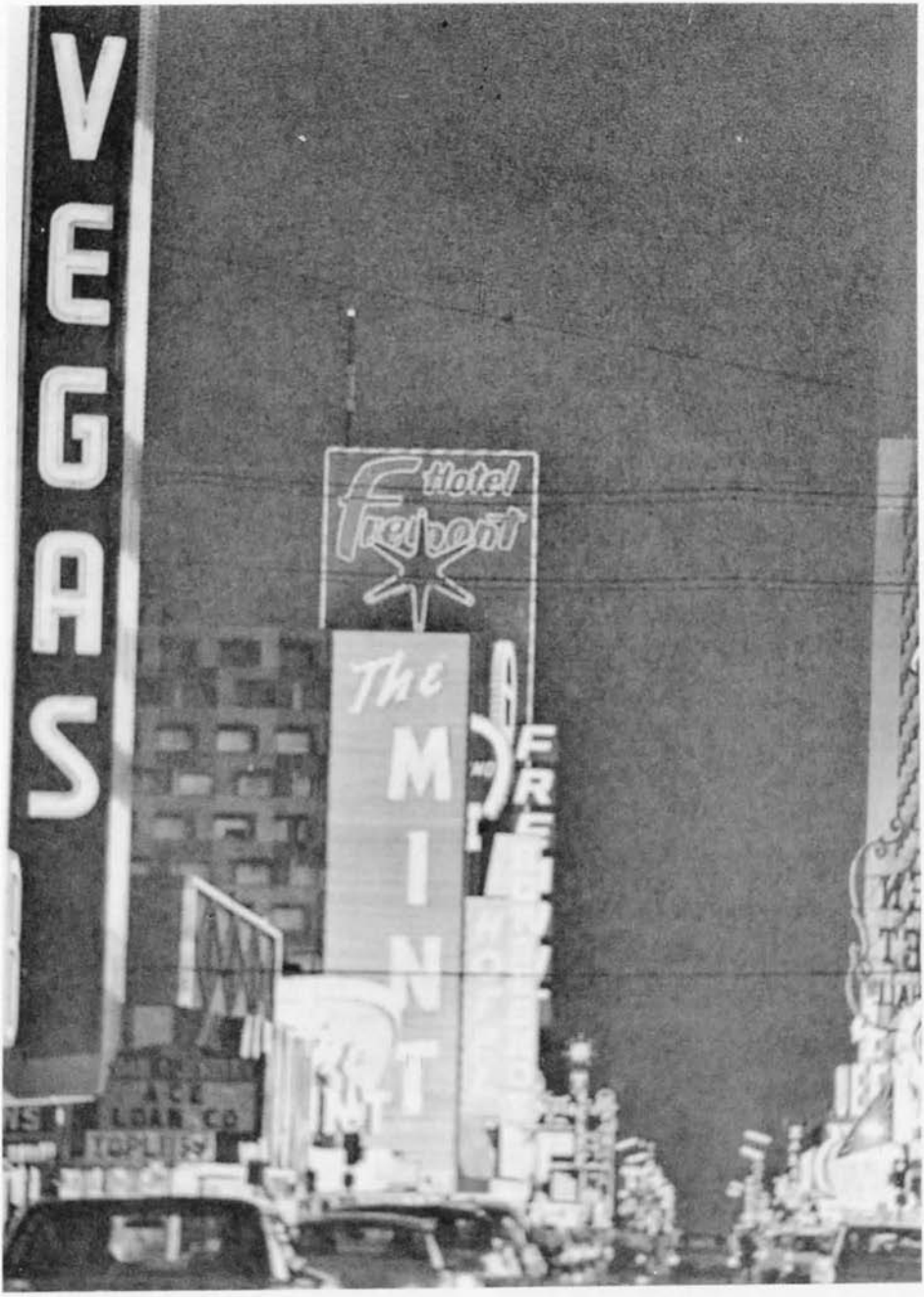

FIGURE 2. Casinos and hotel strip in Las Vegas, Nevada.

TABLE 3
Proportion of Direct Tourism Employment to Total Service Industry Employment by State

State	Total direct tourism employment	Total service industry employment	Tourism proportion of the service economy
Arizona	43,277	346,216	.12
California	256,624	3,087,004	.08
Colorado	48,380	378,177	.13
Florida	170,481	1,383,360	.12
Georgia	76,116	611,680	.12
Hawaii	42,657	147,647	.29
Illinois	88,696	1,044,344	.08
Massachusetts	46,101	709,038	.06
Michigan	42,451	779,209	.05
Minnesota	43,149	435,298	.10
Missouri	48,311	474,471	.10
Nevada	117,922	235,925	.50
New Jersey	85,374	765,501	.11
New York	130,799	1,700,089	.07
North Carolina	45,289	502,071	.09
Ohio	43,522	937,281	.05
Pennsylvania	65,821	966,090	.07
Tennessee	32,116	399,428	.08
Texas	128,944	1,484,864	.09
Virginia	58,111	603,860	.10
TOTALS	1,614,141	16,991,544	

SOURCE: Census of Service Industries (1987), Census of Retail Trade (1987), Census of Transportation (1987), Census of County Business Patterns (1987)

nificant share of the total service labor force.

The monetary contribution of the direct tourist providers and supporting tourist services to state economies is illustrated in Table 4. Collectively, the direct providers accounted for over $46.1 billion in revenue in 1987. A handful of states accounted for a significant proportion of direct tourism revenue: California ($7.0 billion), Nevada ($5.4 billion), Florida ($4.7 billion), New Jersey ($4.3 billion), and New York ($4.1 billion) accounted for 55 percent ($25.5 billion) of total direct tourism revenue in the top 20 states studied.

Both Nevada and New Jersey appear to generate disproportionately high amounts of revenue when compared with the number of employees involved with the direct tourist provider businesses. This trend can be partially attributed to the large amounts of casino-related activity found in both states. On a cautionary note however, it is important to remember that these direct provider revenue figures are understated since airlines do not report revenue figures on a state-by-state basis.

The next step is to examine the contribution of the supporting tourist services to the industrial geography of tourism. Based on Smith's (1988) empirically derived tourism ratios, businesses in the supporting services accounted for $19.2 billion in revenue in 1987. In the supporting tourist service sectors, California ($3.7 billion), Florida ($2.2 billion), New York ($1.7 billion), Texas ($1.6 billion), and Illinois ($1.1 billion) generated over $10.2 billion in tourism-related revenue. This accounted for 53.1 percent of the total supporting tourist service revenue for the top 20 states examined. All of the above states possess mature urban economic systems with a great deal of diversity between economic sectors, thus facilitating a strong relationship between direct and indirect tourism industry activity. States like Nevada and Hawaii generate a much smaller proportion (only 2%) of total supporting service revenue due in part to their smaller economic base and less-diversified service economies.

Based on a visual inspection of Figure 3, a high degree of association seemed to exist between direct and supporting tourist service revenue. As direct tourist provider revenue increases, supporting tourist service revenue increases in a similar fashion for the 20 states examined. A Pearson's Product Moment Correlation Coefficient of 0.69 (significant at the 1% level) seems to confirm these findings. States with mature diversified economies (e.g. California, Florida, New York, and Texas) maximize relationships between direct and indirect tourism revenue. In other states with less-diversifed economies (e.g. Nevada and Hawaii), the "spin-off" revenue generated in supporting tourism sectors is lower due to smaller economic and population bases, as well as the limited relationship between direct and indirect sectors. Nevada and New Jersey appear as anomalous observations in Figure 3 due to the disproportionate effects of the large hotels and casinos found specifically in Las Vegas and Atlantic City. These forms of self-contained tourist developments tend to generate vast sums of revenue, but do not integrate well with the state service economy as a whole.

CONCLUSION

In conclusion, this study was an attempt to document the spatial variation in the interrelationships between employment and revenue for businesses involved with the domestic tourism industry. Twenty states were selected for a study based on the level of statewide employment in two fundamental sectors of the tourism industry: hotels and motels (SIC 7011), and certified air transportation of passengers (SIC 451).

Based on statewide employment in the hotel and airline industries, the top five "tourism" states included: California, Florida, Texas, Nevada, and New York. A comparison between direct tourism employment and total service employment suggests that in states with large economies, a diversified economic base acts to minimize tourism's relative importance as a major service labor market.

TABLE 4
Revenue Totals for the Direct Tourist Providers and Supporting Services

State	Total direct tourist provider's revenue ($ 000,000 s) *	Total supporting tourist service's revenue ($ 000,000 s)
Arizona	1,114	373
California	6,976	3,682
Colorado	903	395
Florida	4,734	2,179
Georgia	1,361	655
Hawaii	1,740	264
Illinois	2,078	1,109
Massachusetts	1,575	750
Michigan	1,035	853
Minnesota	745	405
Missouri	1,011	525
Nevada	5,445	148
New Jersey	4,308	775
New York	4,105	1,698
North Carolina	952	597
Ohio	1,150	1,094
Pennsylvania	1,825	1,012
Tennessee	856	474
Texas	2,704	1,617
Virginia	1,535	601
TOTALS	46,160	19,261

* Does not include revenue for Air Transportation (SIC 451)

SOURCE: Census of Service Industries (1987), Census of Retail Trade (1987), Census of Transportation (1987), Census of County Business Patterns (1987)

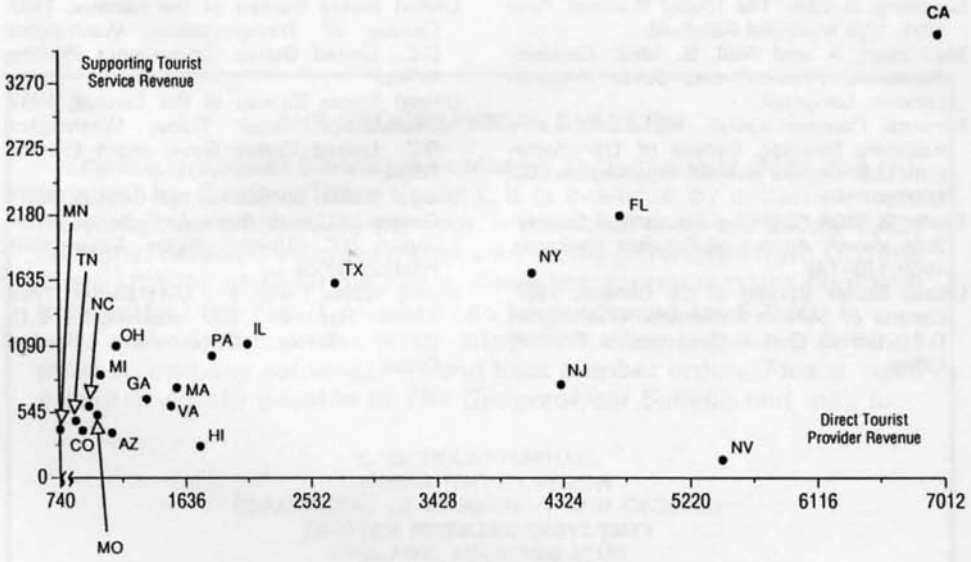

FIGURE 3. Spatial variation in tourism revenue by state ($ 000,000's)

In 1987, direct tourist provider businesses accounted for over $46 billion in revenue for the states examined. California, Florida, New York, Texas, Nevada, and New Jersey were responsible for over half of this employment and revenue. Businesses in the supporting tourist services accounted for over $19 billion in revenue for the same 20 states in 1987. California, Texas, Florida, New York, and Illinois accounted for over half of the revenue generation.

States with large economies tend to have both high absolute revenue in both the direct tourist-provider and supporting tourist services as a result of large-scale economic activity, and direct inputs. States with smaller economies tend to have lower absolute revenue in the direct tourist providers and the supporting tourist services resulting from smaller population and economic bases. As direct provider revenue increased, supporting service revenue increased in a similar fashion. A correlation coefficient value of 0.69 at the 1 percent significance level seemed to confirm these findings.

Direct tourist provider and supporting tourist services are indeed proportionally related with some notable exceptions. However, further research is needed on the reasons explaining this trend. Also, more research is needed on which types of businesses constitute either the direct providers or supporting services since there is great division over which busineses fall into either category. Finally, more research is needed on how these tourist-related firms (both direct and supporting tourist services) contribute to overall statewide economies in terms of service employment, revenue generation, economic diversification, and linkage across varying economic sectors; both inside and outside the tourism industry. These as well as others need to be addressed to further understand the industrial geography of tourism, and how it relates to other forms of economic activity.

REFERENCES

Gee, C., Makens, J. and Choy, D. 1989. *The Travel Industry*. New York: Van Nostrand Reinhold.

Jafari, J. 1983. "Anatomy of the Tourism Industry," *The Cornell Hotel and Restaurant Administration Quarterly*, 24:71–77.

Lundberg, D. 1985. *The Tourist Business.* New York, Van Nostrand Reinhold.

Mathieson, A. and Wall, G. 1982. *Tourism: Economic, Physical, and Social Impacts.* London, Longman.

Personal Communication, 1991. Britt, Larry Assistant Director, Census of Transportation. U.S. Census Bureau, Washington D.C. March.

Smith, S. 1988. "Defining Tourism: A Supply-Side View," *Annals of Tourism Research,* 15(2):179–190.

United States Bureau of the Census, 1987. *Census of Service Industries.* Washington D.C., United States Government Printing Office.

United States Bureau of the Census, 1987. *Census of Transportation.* Washington D.C., United States Government Printing Office.

United States Bureau of the Census, 1987. *Census of Retail Trade.* Washington D.C., United States Government Printing Office.

United States Bureau of the Census, 1987. *Census of County Business Patterns.* Washington D.C., United States Government Printing Office.

United States Travel and Data Center, 1983. *Travel Statistics. 1983* Washington D.C., United States Government Printing Office.

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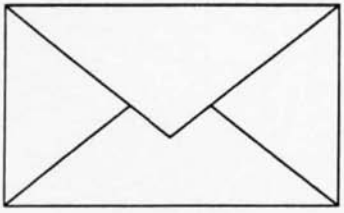

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