ECONOMIC AND ENVIRONMENTAL EQUITY IN THE U.S. NONMETROPOLITAN TOURISM AND RECREATION DEPENDENT COMMUNITIES

A Dissertation

by

SANG KWON LEE

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

December 2005

Major Subject: Recreation, Park, and Tourism Sciences

ECONOMIC AND ENVIRONMENTAL EQUITY IN THE U.S. NONMETROPOLITAN TOURISM AND RECREATION DEPENDENT COMMUNITIES

A Dissertation

by

SANG KWON LEE

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Approved by:

Chair of Committee,	Joseph T. O'Leary
Committee Members,	Tazim B. Jamal
	James W. Mjelde
	Scott Shafer
Head of Department,	Joseph T. O'Leary

December 2005

Major Subject: Recreation, Park, and Tourism Sciences

ABSTRACT

Economic and Environmental Equity in the U.S. Nonmetropolitan Tourism and Recreation Dependent Communities. (December 2005)

Sang Kwon Lee, B.A., Pusan National University;

M.A., Pusan National University

Chair of Advisory Committee: Dr. Joseph T. O'Leary

This study focused on economic and environmental equity in tourism and recreation dependent communities in the U. S. In the economic equity section, research was conducted to do an empirical analysis of the income distribution in nonmetropolitan tourism and recreation dependent communities. In the environmental equity section, this study evaluated conceptual and theoretical understanding dealing with tourism and the environment and addressed the importance of environmental equity issues.

A key objective of this study is to examine economic equity across different income groups and race in nonmetropolitan tourism and recreation dependent communities. By comparing economic equity between nonmetropolitan tourism and recreation dependent communities and other industry dependent nonmetropolitan communities, the differences of income inequality between those communities were explored. This study also assesses how tourism and recreation development contributes to economic equity in nonmetropolitan tourism and recreation communities in the U. S. In particular, determinants of income inequality were investigated.

Income distribution of nonmetropolitan tourism and recreation dependent communities is more unequal than that of nonmetropolitan manufacturing dependent

communities in the U. S. Tourism and recreation development contributes to increase income inequality while manufacturing related development is likely to reduce income inequality. The positive effect comes from the inequality of earnings in tourism and recreation employment. Race dualism shows a positive relationship with income inequality. This result suggests that the racial difference in income distribution plays an important role in increasing income inequality. There is a positive relationship between the south region and income inequality irrespective of community type and suggest that the regional variable is still an essential component for understanding income inequality in the U.S.

This study addresses the need of an environmental justice framework for improving environmental equity across stakeholders in the process of tourism and recreation planning and development. Equity within/between social groups and inter and intra-generational equity should be taken into account for sustainable tourism and recreation development. The analytical framework for assessing environmental equity that this study suggested will be a good foundation for further development of environmental equity framework in the context with tourism and recreation development.

DEDICATION

To my family

"I will not accept your burnt offerings and grain offerings. I won't even notice all your choice peace offerings. Away with your hymns of praise! They are only noise to my ears. I will not listen to your music, no matter how lovely it is. Instead, I want to see a mighty flood of justice, a river of righteous living that will never run dry."

Amos 5:22-24

ACKNOWLEDGMENTS

I would like to extend my sincere appreciation to the individuals who have helped make this dissertation possible. First of all, I need to express my gratitude to my parents. They always encourage me and support my study. I cannot describe my appreciation and love for my wife and my son for their patience and love.

I would like to give credit to my committee chair, Dr. Joseph O'Leary, and my committee members, Dr. Tazim Jamal, Dr. Scott Shafer, and Dr. James Mjelde, for their guidance and support throughout the course of this study. I also thank Dr. Michael Schuett at Texas A&M University for his commitment to mentor me.

Thanks also to my friends and colleagues and the department faculty and staff for making my time at Texas A&M University a great experience. I also want to extend my gratitude to Mr. Darrell Fannin for assisting data collection. Finally, thanks to my family and friends in Korea for their encouragement and cooperation.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

TABLE Page

CHAPTER I

INTRODUCTION

There are numerous studies concerning economic impacts of tourism and recreation development. These studies usually emphasize the positive economic impacts on a community or region (Archer and Fletcher 1996; Heng and Low 1990; Fletcher 1989; Huse, Gustavsen, and Almedal 1998). The impacts of tourism and recreation development can be positive or beneficial, but also negative or detrimental. Whether impacts are perceived as positive or negative depends on the value position and judgment of the observer of the impacts. Positive economic benefits include contributions to the local economy and job creation. Meanwhile, negative economic impacts of tourism and recreation development include economic inequality and land price increases in tourist destinations. Britton (1982) argued that debate on the advantages and disadvantages of tourism is conducted without regard to those theories of political economy concerned with widespread, persistent poverty, and the causes of increasing inequality between and within nations. Impact analyses of economic benefits of tourism are undoubtedly important tools and inputs to policy-making. However, since they assume relatively static and functional rather than dynamic socio-economic systems, their relevance, use and validity are seriously limited in the conditions of contemporary structural socio-economic change and disorganization described and implied by the modernization problem.

This dissertation follows the style of the *Journal of Travel Research*.

Tourism economic studies have also been conducted over the last three decades from the modernization development perspective. In tourism development research, most previous studies have emphasized only the economic benefits and costs from tourism development without considering the distribution of economic gains and burdens (Eadington and Redman 1991). As tourism develops, there are losers and winners with the potential social and economic conflicts. It is often argued that local economic growth will worsen the local income distribution (Bartik 1991). The rationality for this argument is that local growth will push up property values to a greater extent than it increases real wages or employment prospects for the income distribution (Bartik 1991). In reality, the number of tourists and level of total expenditures can be misleading figures concerning the net economic benefits that tourism actually brings to a region. From an economic perspective, a more accurate measure of tourism's worth to the community is the amount of tourist expenditures retained within the local economy, the level of employment generated, and the equity of distribution of economic benefits.

As a result of economic restructuring and general increases in the tourism and recreation industry, many communities have pursued this industry as an important component of their overall economic development without a thorough assessment (Marcouiller, Kim and Deller 2004). Equity issues are an important component economically in sustainable development. Nevertheless, researchers in the tourism and recreation field have not sufficiently emphasized equity or equality issues from an economic justice perspective. Some sustainable development studies have addressed economic equity issues between developed and lesser developed countries (WCED

1987). Within countries, poverty has been exacerbated by the unequal distribution of land and other assets. Many economic problems arise from inequities in access to resources.

There are few studies regarding the distribution of the impacts in the tourism and recreation field (Porter and Tarrant 2001; Floyd and Johnson 2002; Tarrant and Cordell 1999; Stonich 1998; Marcouiller, Kim and Deller 2004). Given the significance of the issue and to better understand the effects of tourism and recreation development on a community, it is necessary to examine how economic outcomes from tourism and recreation development are distributed among different income groups and race in tourism and recreation dependent communities.

Economic equity is an important and controversial issue in modern society. While most social scientists view economic inequality as multidimensional, involving power and prestige as well as income, inequality in the distribution of income is a tangible and measurable aspect of economic inequality. In this study, the terms ‘economic equity’ and ‘economic inequality’ are used interchangeably.

Economic justice is normally related to the economic inequality issues. Economic inequality has always been one of the central issues of any social system. Some principle of distributive justice underlies comparisons of income distributions over time or between countries or communities and influences policy recommendations. The historical development of the economic and social system not only determines the extent of economic inequality, it also influences what we mean by economic inequality within a particular society and delimits the practical steps that might be taken to mitigate such

inequalities. Therefore, when we compare income distribution in different economies and contemplate the scope for a reduction in inequality, we have to be clear about the basis of the comparisons.

Economic research on inequality also involves addressing large-scale issues: large-scale in terms of the problems of collecting and interpreting data and in terms of the principles by which contrasting patterns of economic inequality are appraised. For example, the hypothesis that economic development invariably involves a phase of rising inequality or the comparison of economic policies towards income distribution in developed and underdeveloped countries, raise questions on a manifestly greater scale than are those tied to the structure of earnings or wealth ownership. When addressing such large-scale empirical problems, it is prudent to consider the context within which comparisons of economic inequality will be made (Champernowne and Cowell 1998).

Economic equity studies have focused on income inequality issue. They not only analyze patterns and characteristics of income inequality but also examine the determinants of income inequality. Much of the recent research on income inequality has pointed to a significant increase in U.S. family income inequality during the 1980s and 1990s (Cloutier 1997). However, previous studies using county, urban, and state data have found considerable variation in the level of and change in income distribution among smaller geographical units. There are differences of income inequality between metropolitan areas and nonmetro areas. In addition, there may be income inequality differences dependent on the major industry in a community. Many references have pointed out that deindustrialization is a crucial factor in increasing income inequality

(Chevan and Stokes 2000; Nielsen and Alderson 1995). The trend toward growing employment in the service sector and shrinking employment in the manufacturing sector is remarkably long and stable (Morris and Western 1999). The service sector jobs have traditionally paid less, offered fewer benefits, and more part-time employment. In the service sector, there is also an income gap between low end service industries, like retail trade and high end services, finance and insurance sectors. Therefore, inequality was also found to be growing within the sectors, not simply between them (Lawrence 1984; Grubb and Wilson 1989; Blackburn, 1990).

This study focuses on the distribution of economic consequences from tourism development and analyzes the causes of distribution from an economic justice point of view. The income distribution of nonmetropolitan communities is analyzed. Nonmetropolitian communities have relatively smaller and less diverse economies compared to metropolitan communities. In contrast, since the economic structures and industry composition of metropolitan areas are complex, assessing the net effect of an industry not only is difficult but might be attributed to unreliable consequences. However, in nonmetropolitan communities, it is relatively easy to capture the economic effect of an industry on the community economy. Studying income distribution in nonmetropolitan tourism and recreation dependent communities gives us invaluable information to understand characteristics of economic distribution of the areas. The importance of economic equality among different income groups will be discussed. Comparing income inequality between nonmetropolitan tourism and recreation dependent communities and other industry dependent communities will improve

knowledge about the effects of the community's industry composition on income distribution. In addition, the analysis will examine whether tourism and recreation development contributes to economic equity of the communities.

This study also examines the economic equality among different races in tourism and recreation dependent communities. Some income inequality studies suggest that economic inequality has been increasing among races (Darity, Dietrich and Guilkey 1997; Nielsen and Alderson 1997; Chevan and Stokes 2000; McLaughlin 2002b). The income difference between whites and blacks has increased over the last three decades in the U.S. (Chevan and Stokes 2000). Racial difference in income distribution is an important factor in discussing the causes of income inequality in the U.S. Therefore, it is important to investigate whether the patterns and trends of income inequality between races are evident in nonmetro tourism and recreation dependent communities.

In this study, economic inequality means income differences among people associated with economic consequences of tourism development. The economic equity analysis in this study is concerned with actual differences among people, not potential differences and is inequality of economic outcomes rather than inequality of economic opportunity.

Environmental justice encompasses both concepts of environmental equity and environmental discrimination. Environmental equity is the determination of whether existing environmentally undesirable sites and the distribution of various racial/ethnic population are fair in the sense that the sites (or their effects) are systematically concentrated in (or imposed on) one or more racial or ethnic minorities and low-income

groups (Fricker and Hengartner 2001). The goal of environmental justice is to ensure that all people, regardless of race, national origin or income, are protected from disproportionate impacts of environmental hazards. (EPA, Office of Environmental Justice 2000). Environmental justice usually seeks both distributive justice, referring to the distribution of environmental quality among different communities, and procedural justice, referring to the access of citizens to decision-making processes that affect their environments (Holifield 2001). Since the concept of environmental justice is often broadly defined, environmental justice implies many different things to many people. Therefore, this study uses the concept of environmental equity to delineate the scope of study.

Environmental equity is a term that is used to describe the disproportionate effects of environmental degradation on people and places (Cutter 1995). Environmental equity originates from three sources of dissimilarity: social, generational, and procedural. Social equity refers to the role of social and economic factors such as class, race, gender, ethnicity, and political power in environmental degradation and resource consumption. Generational equity is a framework of legal norms to bring justice to future generations from current and past practices. Therefore, generational equity ensures that society does not consume the environmental future for a present short-term economic gain. Procedural equity is the extent to which governmental rules and regulations, enforcement and international treaties and sanctions are applied in a nondiscriminatory way.

Purpose of the Study

This study focuses on economic equity and environmental equity in tourism and recreation dependent communities in the U. S. The objective of this study is to examine economic equity across different income groups and race in nonmetropolitan tourism and recreation dependent communities by looking at income distribution. The research compares economic equity between nonmetropolitan tourism and recreation communities and other industry dependent nonmeteropolitan communities. The study also assesses how tourism and recreation development contributes to economic equity in nonmetropolitan tourism and recreation dependent communities. Finally, income inequality by recreation type in tourism and recreation dependent communities is investigated.

In economic equity, the research conducts empirical analyses of income distribution in nonmetropolitan tourism and recreation dependent communities. In examining environmental equity, a conceptual overview evaluates previous literature dealing with tourism and the environment and addresses the importance of environmental equity associated with tourism and recreation development.

Theoretical Perspectives

This study focuses on the distributive justice framework. Distributive justice emphasizes the fair or equal distribution of benefits and burdens among groups or communities and the compensation for past injustices (Merrett 2004). The distributive issue is the allocation of a fixed resource among individuals, under the key assumption

that this allocation does not effect the total to be allocated. Within the general framework mentioned above, this study also uses a social justice framework. A social justice framework comprehensively assesses the interaction of economic, environmental, political, social, and cultural power and addresses the root causes of injustice. However, this study only uses this framework for explaining the causes of economic and environmental injustice.

In the case of tourism, which is highly localized in some respects, there is particular interest in its role in local economic development. Not only is tourism an important generator of income and jobs, it is also one of the few sectors which has experienced increases in employment opportunities in the late twentieth century (Archer 1989, 1995; Sinclair and Sutcliffe 1989). So far, most tourism development studies have focused on the role of tourism in economic growth. However, the contribution of tourism development to the fair distribution of economic gains should be considered from a distributive justice perspective. The overall contribution of tourism is dependent on a number of contingent features. The first of these is the overall balance between outflow and inflow of tourists and tourist expenditures. Second, there are leakages of expenditures from the national economy, which is partly a function of the structure and ownership of the tourism and related industries. Third, there is the scale and complexity of the economy: tourism tends to be most important in small open economies, but it also accounts for a significant share of the current account balance, even in relatively large and complex economies (Williams and Shaw 1998). As Gordon and Goodall (1992) mentioned, the map of tourism products is constantly shifting. One of the most intriguing

aspects of these shifts is the question of whether they contribute to the processes of regional convergence or divergence. There are at least two key questions here: whether tourism development is spatially polarized, and whether tourism contributes to overall regional economic convergence or divergence. In other words, how does it contribute to the generation and redistribution of capital, income, and employment between rich and poor regions?

For justice analysis, there are several theories. These theories have been developed by diverse scholars and applied to various situations. For Plato and Aristotle, justice was a personal virtue, the highest virtue of man. For the contemporary philosopher John Rawls, justice is the virtue of social institutions. Distributional justice is justice in the distribution of economic goods between the members of a society (Bojer 2003).

Theories of justice provide principles and guidelines for deciding what makes acts equitable or inequitable. The major justice theories can be categorized as utilitarianism, contractarianism, egalitarianism, and libertarianism.

Utilitarianism

This theory is the most commonly used in consequentialism perspective. The basic principle of consequentialism is that the goodness of the consequences of action decides what is the right action. Utilitarianism argues that goods and services should be produced and distributed to maximize the total welfare or aggregate social utility. The goal of utilitarianism is to achieve the greatest possible balance of good over bad for society as a whole. Classical utilitarianism is universalistic concerned with aggregate

consequences to everyone. Therefore, for utilitarians, it is a matter of calculating the good and bad and identifying the greatest net benefit for all people in the long run. In neoclassical economics, 'the good' is measured in utility, and for policy analysis, is translated into benefits and costs. "Wise use" doctrine appeals directly to libertarian views and draws much of its strength from that association (Harvey 1996).

The strengths of this theory are intuitively appealing quantitative, and attractively egalitarian. The weaknesses are complicated quantification techniques, too flexible and subject to manipulation. Thus, this theory is often too complicated to be practical and fails to deal with the issue of equity and distributive justice. Utilitarianism is concerned only with the aggregated effect, no matter how the aggregate is distributed. Fundamentally, the utilitarian disregards the distributive justice issue and espouses the current mode of production and consumption and the political-economic structure, without any attention to the inequity and inequality in the current system (Liu 2001).

Contractarianism

Individuals reach a consensus on a social contract that includes basic institutions and guiding principles for the society to distribute resources in a hypothetical society. Contractarianism provides strong moral rules pertaining to the dignity and autonomy of human beings (Rawls 1971). This theory emphasizes the rightness of an action, but it pays inadequate attention to the consequences of policy outcomes. The contractarian would choose an alternative, among many options, that benefits both the poor and the rich. As a result, it does not help reduce any existing inequality. Even worse, an action

that could exacerbate the existing inequality would still be acceptable to a contractarian as long as it is to the greatest benefit of the poor.

Libertarianism

Libertarianism emphasizes freedom of individuals. Justice results from the free market, where individuals make their choices freely. It stresses the importance of free market, private property right, voluntary transaction, and free choices. This theory provides an underlying rationale for settling conflicts between individuals. However, when the conflicts involve a large number of people, the libertarian theory often fails to provide any just remedy. For example, in case of environmental pollution, many people are involved. However, environmental pollution cannot be solved through voluntary bargaining among individuals. A fundamental problem of the libertarian theory is the justification for the initial assignment of property rights. Wenz (1988) argues that the libertarian theory fails to provide adequate underlying justification for contemporary property rights and for the view that all issues of justice should be decided solely by reference to such rights.

Egalitarianism

The egalitarian emphasizes the existing inequality and evaluates any action based on the degree to which such action can reduce the level of inequality. From an egalitarianism perspective, the concept of justice involves that of equality. In addition, all social inequalities are unnecessary and unjustifiable, and should be eliminated.

Egalitarianism considers that all men are equal in intrinsic value, inherent worth, and essential nature and all people are to be treated alike, except where circumstances require different treatment (Liu 2001). This theory ultimately seeks to minimize inequalities. Therefore, the environmental justice movement frequently invokes egalitarian principles in its demands for a more equitable distribution of environmental benefits and burdens (Harvey 1996).

TABLE 1-1
COMPARING DISTRIBUTIVE JUSTICE AND PROCEDURAL JUSTICE

Type	Distributive Justice	Procedural Justice
Polarity of Freedoms	Negative Freedoms Freedom from fear or hunger	Positive Freedoms Freedom to pursue goals
Nature of Equality	Equality of Outcomes	Equality of Opportunity
Scale of Rights	Relational Justice Concern for others Focus on the community Redistribution of wealth	Civil Liberties Individual rights prioritized Emphasis on private property
Policy Implications	Higher taxes Regulated markets Extensive welfare state Less inequality	Low taxes Free markets Minimal welfare state

Source: Merrett (2004).

Table 1-1 shows the differences between distributive justice and procedural justice. According to Wenz (1988), different theories should be used in different situations. In a controversial situation, we often see application of different theories by different participants. In general, developers and landlords use the libertarian view of justice and

pursue maximum individual freedoms with respect to their rights invested in their properties under minimal government intervention. In contrast, residents in an unwanted facility-hosting area take contractarian view of justice. In the policy domain, groups that share common interests are often the subject of inquiry for justice. In measuring equity regarding group, disproportionality is often used and equated with inequity. In addition, while some policy makers take a utilitarian view of justice, some environmental justice advocates take an egalitarian perspective. Therefore, taking the appropriate perspective is one of the most important processes in justice analysis. As mentioned above, the egalitarianism is closely related to the concept of distributive justice.

The analytical frameworks for both economic equity and environmental equity are shown in Figure 1-1 and Figure 1-2. Empirical analysis of income inequality in nonmetropolitian tourism and recreation communities will be conducted with panel data analysis for examining economic equity. Theoretical perspectives related to environmental justice or equity and conceptual and analytical frameworks in the context of tourism development will be addressed.

FIGURE 1-1
ANALYTICAL FRAMEWORK FOR ECONOMIC EQUITY

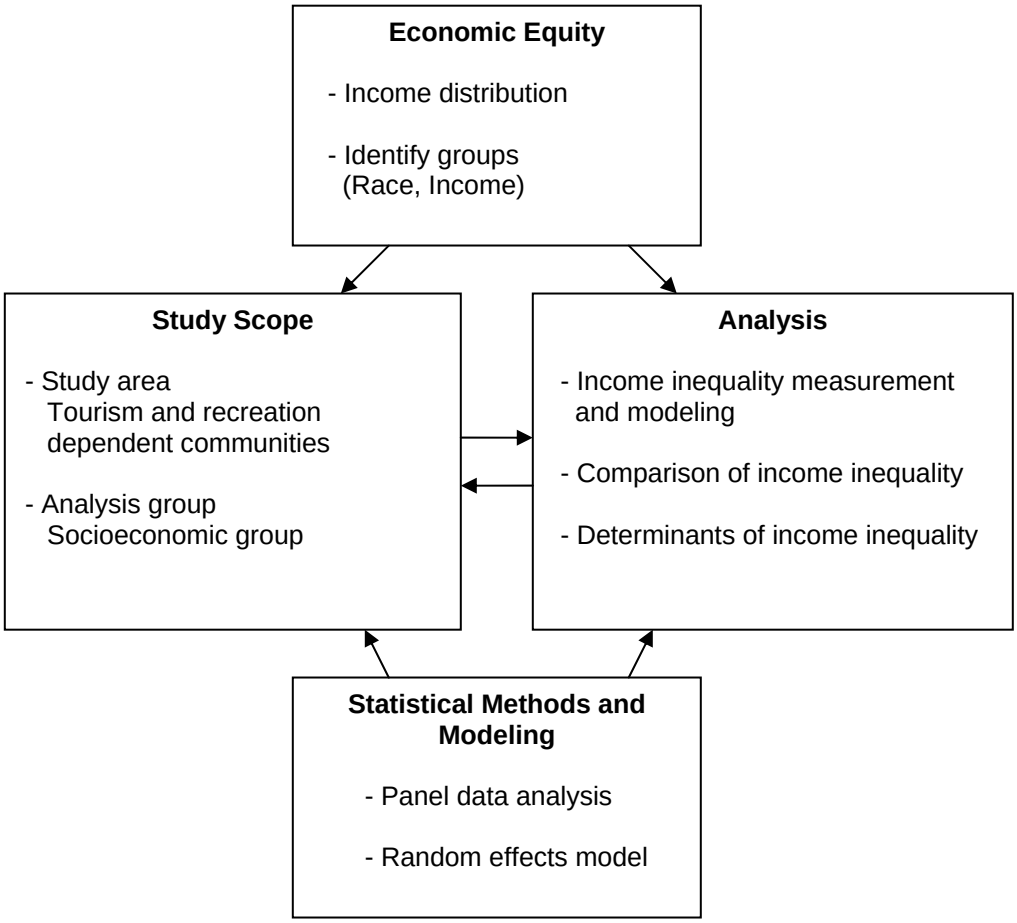
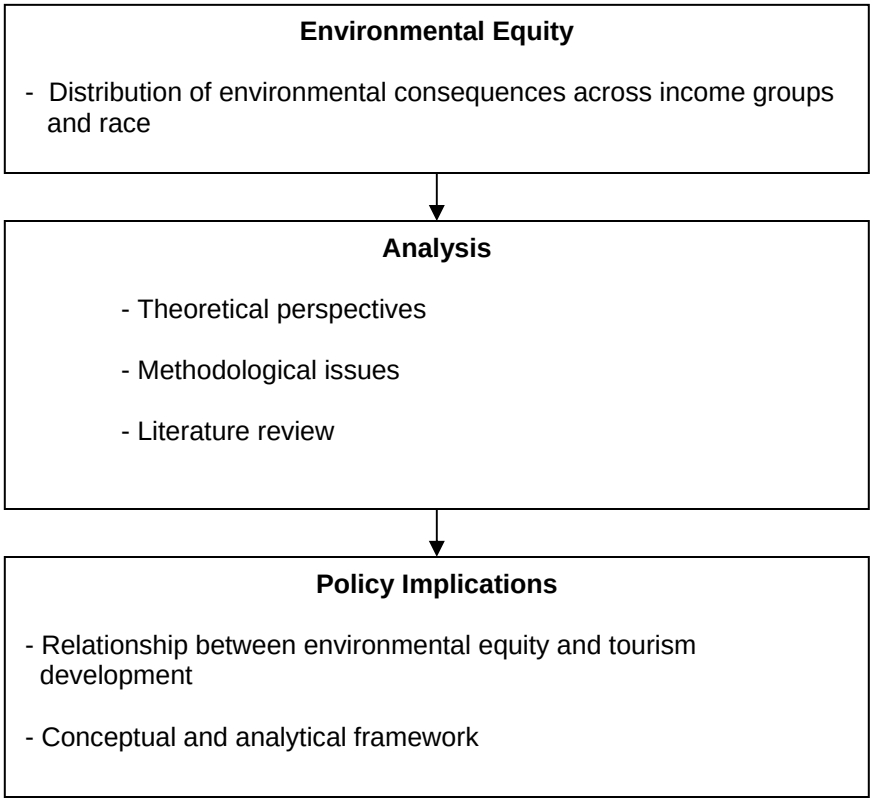


FIGURE 1-2
ANALYTICAL FRAMEWORK FOR ENVIRONMENTAL EQUITY



Research Questions

This study examines two main issues. How are economic consequences of tourism and recreation development distributed across different income groups and race in tourism and recreation dependent communities? Does tourism and recreation development contribute to economic equity? To examine these two issues, the following research questions will be addressed.

- What are the patterns of economic equity in tourism and recreation dependent communities?
- Does tourism development contribute to economic equity in tourism and recreation dependent communities?
    - How are economic consequences of tourism and recreation development distributed across different income groups and race in tourism and recreation dependent communities?

The following hypotheses will be tested.

H_1: As tourism and recreation develops in nonmetro tourism and recreation dependent communities, overall income inequality will increase.

H_{1a}: Income inequality in nonmetro tourism and recreation dependent communities is higher than nonmetro manufacturing dependent communities

H_2: There is a positive relationship between income inequality and earnings in tourism and recreation employment.

H_3: Low-income groups are less likely than other groups to increase the share of income from tourism and recreation development.

H_4: There is a positive relationship between race and income inequality in tourism and recreation dependent communities.

H_5: There is a relationship between income inequality and recreational types in tourism and recreation dependent communities.

In environmental equity, the following research questions will be addressed.

- What are the importance and implications of an environmental justice framework in tourism and recreation development?
- What are the main principles of environmental justice and how does environmental justice literature tie to tourism and recreation development?

Concepts

The concepts to be investigated are defined as follow.

- Distributive justice: a fair or equitable distribution of society's economic and environmental impacts.
- Environmental equity: the disproportionate effects of environmental degradation on people and places.
- Economic equity: an equitable distribution of economic goods between the members of a society.
- Tourism and recreation dependent community: community, which has a high proportion of tourism and recreation related industry of total industry.

- Income distribution: household income distribution across income groups in a community

Significance of the Study

It is expected that this study will widen the scope of tourism development studies. As mentioned above, most tourism development studies have focused on examining the relationship between tourism development and economic growth. In a sense, they have advocated the necessity of tourism development for economic growth in a community. In contrast, some studies have paid attention to the negative economic and environmental effects of tourism development on a community (Keefe 1995; Salem 1995; Burns and Holden 1995; Stonich 1998). These studies extensively dealt with the problems of the community from a tourism development perspective and pointed out the seriousness of the negative effects. However, there are also serious limitations in the studies. Because the studies have been conducted focusing on the specific cases or areas, it is hard to generalize the outcomes of the studies to the other cases or areas. In addition to the difficulty of generalization, many of the studies used a qualitative approach (participatory approach). This led to a number of subjective outcomes that make comparison difficult. In addition, there is a general dearth of literature that makes the connection between tourism and recreation development and the distribution of income. The distributional aspects of growth are meaningful in assessing the development impacts of change.

A study of distribution of economic consequences from tourism and recreation development is important for several reasons. First, understanding the distribution of economic impacts across income groups and race can lead us to consider the current tourism development policies based on the modernization development perspective. Second, understanding the relationships between equity issues and tourism and recreation development can contribute to the scope and depth of the tourism and recreation studies. Finally, equity issues are an important component economically in sustainable development. Thus, the findings of the study will be useful understanding desirable sustainable tourism development and community development.

CHAPTER II

LITERATURE REVIEW OF ECONOMIC EQUITY

This chapter describes literature relevant to the research purposes of this study. It is organized into three sections: (1) the relationship between tourism development and its economic impacts, (2) the relationship between economic development and economic equity, and (3) an introduction to determinants of income inequality. At the end of this chapter, the relevance of the literature to this research and the differences between this research and previous research are discussed.

Tourism Development and Economic Impacts

Most tourism development related studies have focused on the economic impacts of tourism development. In fact, tourism has generated substantial economic benefits. It has also made significant contributions to economic welfare by increasing and enlarging the alternatives for recreation, created employment as well as earning foreign exchange. Tourism is to a large extent an activity carried out in the private sectors of the economy and market incentives have contributed significantly to the rapid growth of tourism (OECD 1980).

Tourism is generally a means for developing and rehabilitating regions where incomes are low, where there is no industry and traditional economic activities are declining. Added to tourism's direct impacts on the economy are multiplier effects

benefiting other sectors indirectly linked with tourism development. In addition, tourism is a considerable source of employment, especially for unskilled labor and for women, and tourism is a relatively substantial source of foreign exchange, which helps to correct the trade balance.

Modernization theory emphasizes the positive impacts of economic development. However, the modernization approach exhibits certain problems. The first problem is the possibility that any profits accrued will leak from the national economy to overseas. The second is that economic development may only benefit existing national or more localized elites (Meethan 2001). Additionally, according to dependency theory, for example, a neo-Marxist approach, surplus value is expropriated or alternatively, appropriated by internal elites so the benefits of tourism development are unevenly distributed. Therefore, the presumed 'trickle down effect' predicted by modernization does not occur.

The economic analyses of tourism have heavily focused on economic impacts. The studies use economic multipliers and cost-benefit analysis (Archer 1976, 1977a, 1977b, 1984; Pearce 1989) and the relationship of tourism to regional development and employment (Royer, McCool and Hunt 1974; Hudman 1978; Ellerbrook and Hite 1980; Williams and Shaw 1988).

Most economic impact studies focus on the multiplier effect. This effect is the way in which expenditure on tourism filters throughout the economy, stimulating other sectors. The multiplier is regarded as "a coefficient that expresses the amount of income generated in an area by an additional unit of tourist spending" (Archer 1982: p. 236).

The multiplier represents the ratio of direct and secondary changes within an area to the direct initial change itself (Page 2002). While direct impacts are those economic impacts which are direct outcomes of visitor spending, secondary impacts may be described as being either indirect or induced. Indirect impacts are those arising from the flow of money in the form of local business transactions. Induced impacts are those arising from the additional income generated by further consumer spending. Thus, the tourism multiplier is a measure of the total impacts which result from the additional tourist expenditure. However, it should be noted that it is hard to calculate multipliers precisely under the best circumstances. In addition, using the multiplier has often exaggerated the consequences of tourism development (Archer 1982; Cooper and Pigram 1984; Pearce 1989).

In spite of the merits of tourism multipliers, several questions remain unanswered about the real benefits and costs of tourism on local development. A major question is who are the winners and losers in tourism development. It is inevitable that the residents of an area will gain unequally from tourism development. Therefore, it is necessary to analyze the distribution of outcomes of tourism development. In addition, the organization and spatial allocation of capital and the penetration of international capital is another major concern. The distribution and organization of capital and tourists is spread unequally between and within regions (Page 2002). In this sense, Pearce (1992) maintains that tourism is often seen as a mechanism for redistributing wealth between regions.

Economic impact studies have been used to assess economic gains from tourism development in an area and have played an important role in providing useful economic information to local or national development. However, the studies did not include equity or justice dimensions in analyzing economic development and disregarded the allocation of benefits and costs among residents. Economic impact studies have focused on only the economic effect of tourism development rather than equitable distribution of economic outcomes.

Economic Development and Economic Equity

Theoretically, equity highlights an attempt to meet basic needs for the present (intra-generational equity) and for the future (inter-generational equity). Economic justice is the distribution of the material outcomes of existence, where the economic well-being of parties to the relationship is at issue. Theories of economic justice can be characterized as to whether they are process oriented, outcome oriented, or a combination of both views (Hill and Jonish 1993). John Rawls (1971) formulated a social and economic theory of justice that is both process and outcome oriented. Rawls' main concern was to develop principles of justice which would be unanimously agreed to in an initial situation which is perceived to be fair between free and equal individuals.

Economists have usually studied income inequality from a distributional justice perspective (Atkinson and Bourgignon 2000; Bishop and Formby 1994; Sen 2000). Using the dominance method technique, Bishop and Formby (1994) analyzed the levels of and changes in income distributions and evaluated income distributions of the United

States and several other major industrialized economies. Sen (2000) dealt with the bearing of theories of social justice on the analysis and evaluation of income distribution and related features of economic inequality. Bartik (1991) analyzed the effects of local growth on real earnings using interaction terms between the employment variables, and education, age, and race of the individual. Bartik (1991) also examined the effects of local growth on earnings by demographic group. In doing so, the author showed how the long run real earnings effects of local employment shocks differ across demographic groups. These results showed that the real earnings effects of an employment shock are significantly greater for less-educated workers and blacks. Another issue is the effects of economic development policy on income distribution in which how the benefits of growth are distributed across demographic groups and how they are distributed across income and earning groups.

It is often argued that local economic growth will worsen the local income distribution. The rationality for this argument is that local growth will push up property values to a greater extent than it increases real wages or employment prospects that effect changes in income distribution. Individuals in low-income groups are disproportionately less-educated and black, and will tend to have great percentage gains in real earnings from an employment shock. On the other hand, higher-income individuals are more likely to own homes and other property, and are more likely to gain property value appreciation benefits from local growth.

With regard to the relationship between income inequality and economic growth, most cross-country studies found support for a negative relationship between inequality

and growth (Perotti 1996; Easterly 2001; Persson and Tabellini 1994). However, more recent work shows a positive relationship between inequality and growth. Forbes (2000) maintained that fixed effects estimation yield the consistent result of a positive short-term correlation between inequality and growth. However, Barro (2000) found a positive relationship between inequality and growth in developed countries and a negative relationship between inequality and growth in developing countries. Using a cross-state panel for the United States, Panizza (2002) did not find evidence of a positive relationship between inequality and growth but found some evidence in support of a negative relationship between inequality and growth. The author showed that the relationship between inequality and economic growth is not robust and that small differences in the method used to measure inequality can result in large differences in the estimated relationship between inequality and growth.

There are some studies analyzing economic inequality of metropolitan areas and counties (Cloutier 1997; Levernier, Patridge, and Rickman 1998; Nielsen and Alderson 1997). Nielson and Alderson (1997) found the continued importance of the Kuznetsian pattern of declining inequality with economic development, i.e., a declining positive impact of deindustrialization, a positive effect of urbanization on inequality, and a persistent inequality between race by analyzing U. S. counties. Cloutier (1997) pointed out urban development and changes in the industrial and occupational mix as major contributing factors to increasing income inequality. These studies showed that there are regional differences in income inequality between areas. The findings and

methodologies from these studies can be applied to examine economic inequality in particular industry dependent communities.

Numerous studies have focused on the causes of income inequality between groups and within groups (Blau and Kahn 1994; Card 1997; Costrell 1988; Bernard and Jensen 1998; Chevan and Stokes 2000). Chevan and Stokes (2000) estimated first difference models to assess economic restructuring and population composition factors that influence change in family income inequality. The debates over the origins of the rise in US inequality cover a wide range of issues that can be roughly grouped into four categories: the changing demographics of the labor force, the impact of economic restructuring, the role of political context and institutions, and the dynamics of globalization (Morris and Western, 1999).

Because tourism development is a part of economic development in an area, reviewing this material is an important step to understand the relationship between income distribution and tourism and recreation development. For analyzing economic equity in tourism and recreation development communities, this study will focus mainly on the effects of economic restructuring such as deindustrialization on economic equity across income groups and races.

Determinants of Income Inequality

Deindustrialization

Deindustrialization captures a complex set of factors that influence household income distributions through earnings of individuals. The change in the earning structure has been attributed to changes in industry composition (Harrison and Bluestone 1988), shifts in the composition of jobs within industries in terms of skills and educational requirements (Levy and Murnane 1992; Osterman 1999), and the introduction of new technologies (Bound and Johnson 1992).

The largest change in industry composition is decline in manufacturing and the rise of the service sector in the American economy (Ryscavage and Henle 1990). Manufacturing jobs are argued to have relatively high wages for workers with lower levels of education and offer steady employment. This compares with jobs in the service sector characterized as having a more polarized wage structure, with a higher percentage of jobs paying lower wages, and having greater instability (McLaughlin, Handcock and Kodamanchaly 2001). It is clear that the nature of jobs available for less educated workers has changed dramatically. This affects wage inequality and earnings (Bernard and Jensen 1998; Bluestone 1990). Local areas that have experienced increases in service sector employment are expected to have larger increases in income inequality.

Another important feature of the changing U.S. labor market related to deindustrialization has been the increase in part-time jobs. Levy and Murnane (1992) found much greater wage inequality with part-time workers earning lower wages than

full-time workers. Because part-time jobs are often associated with industries that pay lower wages, fewer hours combine with lower wages to potentially increase income inequality. Seasonal jobs also would contribute to income inequality. Generally, local areas with larger increases in part-time employment are hypothesized to have greater increases in income inequality. The tourism and recreation industry is often regarded as being in the service sector and the characteristics of tourism related employment are seasonal and high rate of part-time jobs. Therefore, the labor force and earnings in the tourism and recreation industry are expected to show the effects of tourism and recreation development on income inequality.

Sector Dualism

Sector dualism is inequality due to the average income difference between the agricultural and nonagricultural sectors (Nielsen and Alderson 2001). It can be measured as a function of the average income difference between sectors and the relative sizes of the sectors (Lecaillon et al. 1984). The effect of sector dualism is greatest at relatively low levels of development. Developed societies have low levels of sector dualism, in part because of the agricultural sector no longer comprises a substantial fraction of the labor force. Nevertheless, it is conceivable that sector dualism continues to be a relevant process of income inequality in rural areas of industrial societies.

Changing Demographics of the Labor Force

Another explanation of increasing income inequality stems from the decline in hourly wages associated with changes in the supply of workers. The increase in proportion of women in the labor force, the large numbers of the baby boom cohort, and recent foreign immigrants combine to increase the labor pool (Levy and Murnane 1992; Macunovich 2000; Teitelbaum 2000). This contributes to decreasing the overall wage level. This study focuses only on the relationship between female labor force participation and income inequality.

Levy and Murnane (1992) argued that women's labor force participation may have initially served to reduce wage inequality because women's wages tend to be more equal than men's. Nielsen and Alderson (1997) found that a greater percentage of females in the labor force was associated with lower income inequality in 1980 and 1990. Chevan and Stokes (2000) maintained that an increase in females' labor force participation was associated with declines or slower growth in family income inequality from 1980 to 1990. However, Lobao et al. (1999) found higher female labor force participation to be associated with higher median family incomes.

Racial Inequality

Some studies have found a positive relationship between black population portions and black-white inequality (Burr, Fossett, and Galle 1991; Fossett 1988; Tomoskovic-Devey and Roscigno 1996). Nielsen and Alderson (1995) found that income inequality in the United States has historically been higher than in other advanced industrialized

countries. One cause of the greater inequality in the United States may be the nature of race relations. Nielsen and Alderson (1997) used an indicator of race dualism that measures the amount of income inequality in a county that results from the difference between average incomes of black families and white families. The race dualism is sensitive to the relative sizes of the racial groups as well as to the difference in average income between them. The authors found that race dualism had a significant positive effect on family income inequality in 1970, 1980, and 1990. McLaughlin (2002b) also found that there is continuing disparity in income levels by race/ethnicity in U.S. nonmetropolitan areas. By indicating that the levels of overall income inequality are not due solely to the differences in income levels between race groups, the author concluded that within-race group inequality also contributes to income inequality.

Summary

Although tourism development studies have dealt with tourism economic impacts extensively, economic impact studies do not provide answers about the real benefits and costs of tourism on local development and who are the winners and losers in tourism development. Economic impact studies highlight the positive impacts of tourism development and have served as a theoretical and empirical foundation for tourism and recreation development planning. However, economic impact studies need to assess the broader impacts within the community from a holistic perspective. Economic impact studies need to provide not only information about the effects on jobs, income, or housing, but also how a project will affect the community's overall environment. The

effects that a project has on various groups within a community (i.e. its distribution effects) are often more important than its economic efficiency. A report from the International Labor Office (2001) describes income inequality in a park community in Malaysia as follows.

> In Western Malaysia, the Taman Negara National Park is a privately owned park and resort which can house 260 visitors at a time. The park employs 270 people and 60 per cent of the staff in the administrative headquarters are locals, who in 1999 earned about US$120 a month; by comparison, Malaysians living off the land at that time were earning on average about US$40 a month. Despite the positive employment effects, the differences in income between the two groups have led to social tension and driven up boat fares and the cost of everyday goods. Little of the tourism money goes to the country of destination, while park employees spend almost 90 per cent of their income outside the region or on imported goods. Thus local inhabitants, whose culture has been marketed to attract tourists, benefit only to a very limited extent. Indeed, many have taken to illegal hunting and fishing in the park, contrary to the protective regulations established by the park authorities. There is a clear need to establish guidelines and engage local people in dialogue to ensure that the regions and their populations benefit from the tourists' visits (p. 65).

There is little literature regarding economic equity in the interpretation of tourism and recreation. Most tourism development studies emphasize that the contribution of tourism development to local economy rather than focusing on distribution of economic consequences from tourism development. However, economic inequality caused by tourism and recreation development is one of serious problems in the areas and a crucial issue in tourism development and planning. Tourism has the potential to generate economic growth and development but it can also enhance inequalities if only the local elite benefits. A number of concepts related to regional economic development have been applied to tourism. Tourism has been used as a strategy to promote regional

development (Oppermann 1992) in both urban (Beauregard 1998) and rural areas (Sharpley and Sharpley 1997). Williams and Shaw (1991) maintained the potential for tourism to bring development to economically disadvantaged regions of European countries. However, Malecki (1997) noted a series of negative factors which can prevent tourism from being an effective tool for regional development. Tourism often has low paying jobs that can be very seasonal. The amount of benefit that a region receives relates to the level of leakage.

There is a need for empirical analysis that focuses on specific indicators of development rather than on simplistic measures of economic growth, such as changes in employment and aggregate income levels. Studies that address issues of distributional implications and transitions in economic structure offer a clear focus on regional development indicators (Marcouiller, Kim and Deller, 2004). In this sense, looking at economic growth without assessing distributional effects of change overlooks the strong development trend of increased intra-regional income inequality. Assessing the distributional aspects of economic growth provides the real-world problem set of how tourism and recreation developments affect the lives and livelihoods of communities.

In spite of the importance of economic equality, there are few studies which dealt with economic equality issue in the context of tourism and recreation development (Marcouiller, Kim and Deller 2004). Scheyvens (1999) emphasized the distribution of benefits from tourism across the population. Brohman (1996) also maintained that a large proportion of the local population should benefit from tourism, rather than merely bearing the burden of its costs. Examining the relationship between economic equity and

tourism and recreation development is an essential part of tourism studies. Therefore, economic equity issue should be explored with empirical analysis from an economic justice perspective.

Distributive justice analysis of economic consequences from tourism development will play an important role in expanding the scope of tourism and recreation development study. Since the equity issue is a crucial component in understanding social relationships, it is necessary to incorporate the equity issue into community development studies. Therefore, the economic equity approach of this study is a unique way to examine the distribution of outcomes from tourism development compared with previous tourism development studies (Pearce 1989; Williams and Shaw 1988). Previous tourism development related studies heavily dealt with and overemphasized positive economic impacts to communities. Unlike that research, this study mainly focuses on the distribution of economic consequences from tourism and recreation development. Income inequality analysis related to tourism and recreation development can substantially contribute to understanding the relationship between economic equity and tourism and recreation development.

CHAPTER III

A FRAMEWORK OF ENVIRONMENTAL JUSTICE IN TOURISM AND RECREATION DEVELOPMENT

This chapter describes paradigms of justice, framework of environmental justice, analytical dimensions of environmental justice, and the relationship between sustainable tourism development and environmental justice. Understanding the conceptual and analytical frameworks of environmental justice is crucial for environmental justice analysis associated with tourism and recreation development. In addition, the overview and major findings of environmental equity studies are summarized. The methodological issues of previous research are also examined. Even though most environmental equity or justice studies do not deal with tourism development, they provide insights to apply their findings and methods to the tourism and recreation field. The importance and need of tourism development from an environmental equity perspective were addressed.

Tourism Development and Environmental Impacts

Environmental impacts of tourism development have also been discussed as an important topic in the tourism and recreation field (Green and Hunter 1992; Hunter and Green 1995; Lindberg 1991; Mieczkowski 1995; Nelson, Butler and Wall 1993; Pearce 1989). Tourism concentration in certain locations may accrue local problems such as degradation of physical resources and social and cultural deterioration. The physical

impact of tourists and the provision of their needs threaten to destroy natural and environmental resources (Tyler 1989). Because tourism consumes resources, the growth of tourism results in a marked impact on the demand for exhaustible and renewable resources. It generates significant waste, which can create acute disposable problems as well as major environmental problems. The operation of tourism firms can also cause overexploitation of the natural resource and the generation of non-priced adverse effects (Stabler 2003). For example, most tourism related air pollution stems from vehicle traffic. Especially in congested areas, emissions often harm human beings, vegetation, and soil (Romeril 1985). In addition, wetlands have been destroyed or damaged due to tourism development activities that included activities such as access roads, parking lots, resorts, marinas, and recreational facilities.

Some studies summarize the environmental degradation which tourism may cause (OECD 1980). The effects of pollution on the environment lead to serious results. Air pollution mainly results from automobile traffic and the production and use of energy. In addition, due to the mismanagement of water, water pollution may result. Water pollution is a major problem in many tourism destinations of the world (Jenner and Smith 1992; Becheri 1991; Kirkby 1996; Mieczkowski 1995). Pollution of sites by littering and the absence of or inadequacy of waste disposal facilities may occur.

Other studies pointed out that overcrowding and overdevelopment are major problems emanating form the environmental effects of tourism (Andronikou 1987; Romeril 1989; Smith 1984). Excess numbers of visitors increase the demand for secondary resources, water and energy which may be scarce in developing countries and

some islands. Loss of flora and fauna occurs where tourism expansion, climbing, and hunting have taken place. The concentration in time and space of tourists on holiday leads to congestion of destination, amenities and infrastructure, thus causing potential harm to the environment and detracting from the quality of life.

Tourism may affect the loss of natural landscape. The development of tourism brings with it the construction of housing, facilities and infrastructure for tourists which encroach on previously open spaces. Some valuable natural sites are often barred to public access because they become privately owned. Additionally, degradation of landscape and of historic sites and monuments may occur due to tourism. The installation of modern tourist-related facilities and infrastructure often leads to aesthetic degradation of the landscape or sites. An excessive number of visitors to historical natural sites may also result in degradation.

There have been few studies directly related to the possible beneficial effects of tourism on the environment. For example, conservation of fragile ecological areas and the designation and maintenance of wildlife reserves (Stabler 2003) are two examples. Tourism can be a force for environmental improvement or natural conservation (Tisdell 1987). Pigram (1980) suggested a simple functional relationship between tourist development and environmental quality. The author summarized a series of relationships that might indicate (a) that environmental quality deteriorates substantially with tourist development, (b) that it deteriorates marginally with tourist development, and (c) that environmental quality improves with tourist development.

Paradigms of Justice

The main paradigms of justice within environmental justice can be divided into three main categories: distributive justice, procedural justice, and social justice.

Distributive Justice

Distributive justice uncovers the inequitable distribution of social, economic, environmental, and political burdens on people/communities with different levels of economic development (Anand 2004). Distributive justice is the most commonly used concept for evaluating whether or not environmental injustice has occurred. Distributive justice refers to the fairness by which the risks of environmental hazards are distributed among the population. With respect to the environmental justice agenda, distributive justice refers to an equal distribution of burdens resulting from environmentally threatening activities or of the environmental benefits of government and private sector programs.

- The principle that past and current producers of environmentally harmful substances be held responsible to people,
- The right of low-income and minority populations to be free from having to face disproportionate environmental impacts,
- The need for the improvement of economic possibilities in low-income and minority communities in order to be able to shape their personal environments to their satisfaction, and for extracting material benefits from environmentalism and its spins-offs,
- Strict enforcement of principles of informed consent (Anand 2004, p. 10).

.

Procedural Justice

Procedural justice refers to the fairness of the procedures. This requires equal concern and respect for individuals and groups in the political decision affecting how

these goods and opportunities are to be distributed. An analysis of procedural justice evaluates the fairness of a procedure in advance of its use and whether, in retrospect, the completed process entailed equal consideration of all the participants involved. Procedural justice reveals the dynamics of the inequitable bargaining powers of people or communities with different levels of economic development.

- The need for public policy to be based on mutual respect and justice for all peoples,
- Minority, low-income groups need to be better incorporate in the decision-making process,
- The fundamental right to political, economic, cultural, and environmental self-determination of all people,
- The right to participate to on grounds of equality, equity, and fairness at all levels of decision-making (Anand 2004, p. 10).

Social Justice

The premise of the social justice paradigm is that the problems and risks do not occur in isolation. Rather the same underlying racial, economic, and political factors that are responsible for environmental threats to the community also likely play a significant role in why the area may suffer from other problems. Social justice calls for a holistic analysis which includes all of the factors leading up to the current hazards and inequitable distributions of goods and opportunities.

Justice theory is relatively complicated and multidimensional. Each justice theory tends to emphasize on one dimension of justice despite of limitation. Controversies regarding justice theory have been around for long time. For example, Rawls (1971) represented the focal point of liberal justice theory: fair distributions away from any

substantive agreement on what we each believe as 'good'. We should agree on the rules of distributive justice while remaining impartial to different notions of the good life individuals have. However, Young (1994) argued that while theories of distributive justice offer models and procedures by which distribution of may be improved, none of them thoroughly examine the social, cultural, symbolic, and institutional conditions underlying poor distributions. Young also pointed out the way distributive justice theory simply take goods as static, rather than tie them to the outcome of various social and institutional relations. Distributional issues are crucial to a satisfactory justice conclusion, but it is a mistake to reduce social justice to only distribution issues.

The notion of environmental justice encompasses distributive justice, procedural justice, and social justice. Since environmental justice requires applying diverse dimensions of the three major justice theories to empirical analysis of environmental impacts, these justice theories should be included in environmental justice framework.

Framework of Environmental Justice

Environmental justice, an intricate concept and movement, is concerned with the inextricable links between social, political, economic, and environmental issues (Albrecht 1995; Barakham 1995). Liu (2001) summarized environmental justice paradigm as;

- Seeks equitable distribution of environmental costs and benefits
- Ensures community-based sustainable economic development
- Builds infrastructures for promoting environmental justice and sustainable economic development
- Promotes community empowerment
- Enhances public participation in environmental decision-making

- Holistic approach to health policies and regulations
- Enhances community-based pollution prevention strategies (p. 34)

There are several frameworks for assessing environmental justice, which relate to deciding how to define the problem, and choosing a core strategy for developing a legal and political response. First, the civil rights framework identifies disparate impacts due to discrimination and devises remedies that make victims whole. Second, the distributive justice framework focuses on distributing benefits and burdens fairly or equally. It ensures that differences benefit the least well-off, and provides compensation for past injustices such as treaty violations. This framework emphasizes that public policies should produce fair outcomes and policies should meet expectations of constitutional equal protection. Third, the social justice framework which comprehensively assesses the interaction of economic, political, social, and cultural power and addresses the root causes of injustices. In this framework, the economic, political, and social ideas, institutions, norms, incentives, and underlying assumptions that result in disproportionate risks and harms are addressed. Therefore, social justice framework covers comprehensive aspects of justice. Fourth, the public participation framework which devises fair procedures that give voice to all members of a community, especially the politically powerless and ensures that all groups have the social capital to participate effectively. Furthermore, participation allows affected parties to help determine what happens in their communities and how benefits and risks are balanced. Finally, more recently, the sustainability framework focuses on conservation of resources and ensures that economic and ecological values are approached equitably (Liu 2001). The notion of

sustainable development seeks to balance economic growth with environmental conservation. Although this framework emphasizes equity, the importance of the issue in the sustainability framework is relatively weak compared to other components that the framework addresses.

Environmental Justice and Environmental Equity

'Environmental justice' itself represents a broad conceptual construction or interpretive frame. This frame is defined simultaneously from the bottom up, as grassroots organizations discover a pattern to their grievances, and from the top down, as leading environmental and social groups communicate the idea of environmental justice to local groups. This frame covers most aspects of a society, including cultural norms and values, rules, regulations, policies, and decisions in support of sustainable communities. An important concept within environmental justice is environmental equity. Environmental equity is an elusive and politically charged idea that defies a simple definition. One distinction relates to process versus outcome equity. With procedural equity, the emphasis rests on whether the process for allocating environmental disamenities is fair. Decisions that result from a fair process are considered equitable. In contrast, outcome equity deals with the final allocation of environmental amenities and disamenities in relation to potentially affected populations (Cutter 1995; Greenberg 1993). Environmental equity assumes no specific outcome and causes and leaves it for an analyst to determine the relationship between environmental risk distribution and population distribution. To test for environmental equity is to prove

that environmental risks are born unfairly by disadvantaged groups, often low-income, minority populations and women.

Much of the literature tends to use environmental equity interchangeably with environmental justice. Environmental justice and environmental equity refer to policies and practices by which existing environmental inequities can be corrected and prevented in the future. They focus on research programs that attempt to detect the existence of environmental racism and environmental discrimination; that uncover the underlying reasons that hold such practices; and that promote the enforcement of existing laws and regulations, the adoption of new rules and regulations, and the changes in philosophies and attitudes that are needed to eliminate environmental racism and environmental inequities from society (Newton 1996). However, different terms reflect different political imperatives and symbolize various icons for mobilizing mass support for public policy objectives. It would seem beneficial to distinguish environmental equity and racism to improve understanding. According to Foreman (1998), environmental equity is relatively technical and unprovocative, while environmental racism is provocative and evocative for mobilizing the attention of people of color.

Environmental justice is defined by the EPA's Office of Environmental Justice as

> The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies. Meaningful involvement means that: (1) potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the

> regulatory agency's decision; (3) the concerns of all participants involved will be considered in the decision making process; and (4) the decision makers seek out and facilitate the involvement of those potentially affected (EPA 2004).

The above definition includes both procedural and distribution-related aspects of justice. In other words, this definition emphasizes both public participation in environmental decision-making and distribution of environmental goods or opportunities. This definition is much broader than environmental equity. Environmental equity is defined as "the distribution of environmental risks across population groups and to our policy responses to these distributions" (U.S. EPA 1992: 2). The focus of the equity concept on distribution is in line with the popular use of equity in the public policy domain.

Some studies distinguished environmental justice and environmental equity. According to Zimmerman (1994), environmental justice focuses on procedures to ensure fair distribution. However, environmental equity refers to the distribution of advantages and disadvantages across individuals and groups. Environmental justice is broadly defined as the goal of achieving adequate protection from the harmful effects of environmental agents for everyone, regardless of age, culture, ethnicity, gender, race, or socioeconomic status (Perlin et al. 1995). Environmental equity emphasizes the impacts on social groups, while environmental justice focuses more on goals, policies, and regulations to ensure fair distribution of environmental burdens across those social groups (Liu 2001). Therefore, environmental justice covers more of regulatory and policy-related equity issues than environmental equity.

Research Approaches to Environmental Justice and Equity

There are three broad categories into which the field of environmental justice is approached empirically; procedural equity, geographic equity, and social equity (Bullard 1994). Procedural equity refers to questions of fairness, the extent to which governing rules and regulations, evaluation criteria, and enforcement are applied in a nondiscriminatory manner. Geographic equity refers to the location of environmental hazards with regard to communities of color and low-income communities. Social equity focuses on the way in which social factors, such as race, class, and political power, have an impact on environmental decision-making. Empirical research used major environmental justice frameworks mentioned above for assessing environmental equity.

Equity versus Equality

Most environmental justice literature deals with the concept of equity as unproblematic because it is seen as meaning equality. However, equality and equity are different. Equity refers to normative principle of fairness while equality denotes sameness, a uniformity of distribution. To conduct empirical studies, we must arrive at an operational definition that is comparable with similar research. Thus, equity will mean equality, that is, sameness of outcome. Inequalities exist when benefits and burdens are not equally distributed by the population and can be divided into two dimensions: horizontal inequality and vertical inequality (Khisty 1996). Horizontal inequality is related to the treatment of socio-economically similar groups, while vertical inequality refers to unfair distribution of benefits or costs among different

socioeconomic groups. In environmental justice analysis, vertical inequality is the main issue to be examined. Assessment of inequality among different social groups is one of the most important objectives in environmental justice analysis.

Analytical Dimensions of Environmental Justice

Empirical studies of environmental justice can be divided into two main categories, with associated factors and variables. Table 3-1 shows major variables, which used in the previous literature.

TABLE 3-1
FACTORS OF ENVIRONMENTAL JUSTICE ANALYSIS

Category	Factors	Variables
Potential exposure and risk	Demographic	Race, ethnicity, income, age, gender, disability
		Susceptible and high exposed populations
		Population density
		Population literacy
		Economic/population growth
	Geographic	Land use/land cover
		Climate
		Topographic and geomorphic features
		Hydrologic features
	Economic	*Individual Economic Conditions*
		Income level/health care access
		Infrastructure conditions
		Life-support resources
		Distribution of costs to pay for environmental projects by user
		fees for necessary goods and services
		Community Economic Base
		Industrial
		Brown fields
		Natural resources
	Human health and risk	Proximity to environmentally risky facilities
		Public perception of risks
		Emission sources, amount and distribution
		Ambient concentrations and their distribution
Historical and policy issues	Regulation	Industrial concentration
		Inconsistent standards in enforcement and site selection

Source: Liu (2001)

Distribution of Environmental Disadvantage

Over the last three decades, a growing number of researchers and policymakers in the United States have begun to pay attention to the distributive impacts of environmental pollution across dimensions of class and race (Asch and Seneca 1978; Bryant and Mohai 1992; Bullard 2000; United Church of Christ 1987). The predominant finding to emerge from this research is that environmental racism exists. Environmental racism occurs when the poor and people of color endure most of the nation's environmental problems. In general, environmental justice requires both a more equitable distribution of environmental outcomes and greater public participation in evaluating and apportioning these outcomes (Frechette 2002). The majority of environmental justice research has focused on the distribution of hazardous facilities in vulnerable communities and on local responses to these policies. Evidence indicates that minorities who are disadvantaged in terms of education, income, and occupation not only bear a disproportionate share of environmental risk but also have less power to protect themselves. Recently, researchers have begun to explore several other areas of environmental justice concern, including the work place, housing, and transportation. These studies found that the poor and people of color are disproportionately impacted by pollution on the job in their homes, and via transportation systems (Bullard and Johnson 1997; Robinson 1991).

Environmental justice is concerned with the distribution of environmental benefits and burdens. It asks whether the procedures and impacts of decision-making are fair to

the people they affect. This focus on distributional issues adds new layers of analysis to the already highly complex field of environmental science. The notion of environmental justice focuses on how the environmental repercussions of human actions can disrupt societal equilibriums (Goldman 1993). Environmental justice advocates argue that just as important as these environmental and economic goals should be the consequences of natural resources policy decisions for the societal goals of protecting individual rights, promoting justice and fairness, ensuring fair participation, and fostering social equity (Bryner 2002). A number of studies examined the question of whether environmental injustice results from racism and economic inequity (Bullard and Wright 1992; Mohai and Bryant 1992; Downey 1998). While environmental racism is couched in terms of racial discrimination, environmental equity references inequalities in class and income structures rather than race per se (Floyd and Johnson 2002). In general, the empirical studies of environmental justice show that low-income and minority communities are disproportionately exposed to environmental risks and low-income and minority communities are less likely than other communities to benefit from natural resources access and development policies.

In environmental justice studies, there is a debate concerning the existence of environmental injustice. This debate is framed in terms of the presence or absence of a statistical association between race, ethnicity, income, and hazardous waste. Several studies provide evidence that demonstrates that non-whites and the poor are more likely to live near hazardous waste than are whites and the more affluent (Bullard 1983; Bullard 1990; Gould 1986; Mohai and Bryant 1992; United Church of Christ 1987;

White 1992). However, some studies suggest that the spatial association between race, ethnicity, and hazardous waste is weak (Anderton, Anderson, Oakes, and Fraser 1994; Anderton 1997; Bowen, Sailing, Haynes, and Cyran 1995; Oakes, Anderton, and Anderson 1996). Most environmental equity related studies have reported some type of social disparity in the distribution of environmental hazards. Higher levels of environmental hazards in places with lower socioeconomic status have been found (Brooks and Sethi 1997; Been 1997; Kreig 1998). Similar findings for minority communities have been reported (Daniels and Friedman 1999; Zimmerman 1993; Stretesky and Hogan 1998). Environmental justice researchers have studied a wide range of geographic locations, ranging in size from the entire United States to a single area; results from one location may have little bearing on the situation in others. In environmental justice studies, national-level studies and studies on a smaller scale produce strikingly different findings. This implies that there are regional differences in distribution of environmental benefits and costs. Environmental equity studies have argued that minority and/or low-income communities are disproportionately affected by environmental hazards. By analyzing at the national or regional level, many environmental equity studies found a correlation between environmental burdens and minority or low-income communities, but the evidence is not unanimous (Anderton et al 1994; Bullard 1983; Hird 1993; Mohai and Bryant 1992; United Church of Christ 1987; US GAO 1983; Zimmerman 1993).

Additionally, issues of social justice have explicitly entered ecological studies, most visibly through the rubric of the environmental justice movement (Bullard 1990;

Wenz 1998). As opposed to the broad theoretical perspective employed by political-ecologists, most studies done within the context of environmental justice are more narrowly focused. Justice or equity approaches tend to deal with specific geographic locales which limit their generalizability.

Effects of Regulation and Policy

Empirical environmental justice research has also focused increasingly on the distribution effects of regulations and policies on social groups. Krieger (1970) examined the income distribution of net benefits from a variety of environmental related federal programs. The author estimated that environmental programs existing at the time in effect redistributed income from the poor to the rich. Dorfman and Snow (1975) examined the question of who pays for pollution control. They not only estimated a regressive distribution of costs as a percentage of family income, but also that the regressivity of the cost of environmental programs would increase over time. Harrison (1975) investigated the household costs of automobile pollution controls imposed by the Clean Air Act amendments of 1970. He also estimated a regressive distribution among different income groups. Gianessi and Peskin (1980) estimated the distributional impacts of a fully implemented Clean Water Act in its 1972 version and found that family cost percentages declined regressively with higher income levels for most of the water pollution control policies analyzed. They also found that non-whites would pay a greater proportional share than whites relative to their population sizes. Harrison and Rubenfield (1978) analyzed the benefits of the regulatory for expected air quality improvements in

506 census tracts in the Boston metropolitan area. The authors found that air quality benefits were regressively distributed, rising consistently and substantially with income. However, they also found that the value of such benefits would decline as a percentage of income for the more affluent.

Sustainable Development, Sustainable Tourism and Environmental Justice

The literature that addresses tourism and the environment falls under three broad categories: environmental impact, environment-related attitudes, and collective action and conflict studies (Kousis 2000). Most environmental impacts studies focus on the negative ecosystem and/or related environmental impacts (Farrell and McLellan 1987; Farrell and Runyan 1991; Lindberg 1991; Mieczkowski 1995; Urry 1992). In contrast, Stonich (1998) have addressed the more critical and largely unsearched public health and sociopolitical impacts of ecosystem-disrupting activities from a political ecology perspective. Stonich (1998) showed that the impacts of environmental degradation attributable to tourism development are imposed on local populations by powerful national and international actors.

Since early 80s, tourism related environment studies have focused either partially or exclusively on the host communities' attitudes and perceptions of tourism's impacts on their surroundings (Korca 1996: Lankkford and Howard 1994). The studies indicate that host residents are well aware of the intensity and quantity of these impacts on the environment.

During the last decade, studies focused on collective acts of resistance against tourism-related projects or activities (Boissevain 1996; Boonzaier 1994; Dogan 1989; Richez 1996) and also provided evidence on case studies from the perspective of local conflicts. However, the wider economic and environmental issues involved in such conflicts remain largely uninvestigated. The studies on environmental equity related to tourism and recreation development are also rare regardless of theoretical and empirical importance. Although there are numerous studies analyzing environmental impacts from tourism development, most studies fail to provide a comprehensive framework to include distributional effects across groups in a community. Therefore, examinations of environmental equity in the context of tourism development are needed.

Mainstream environmentalists believe that the world needs not just any development, but sustainable development that operates within stringent environmental constraints that maintain and enhance economic prosperity and quality of life without environmental deterioration. Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs (WCED 1987). Sustainable development emerged from earlier science-based models of sustained yield resource management, progressive conservation and integrated resource management and was popularized through the World Conservation Strategy of 1980, the Brundtland Report, and the Rio Earth Summit of 1992 and its Agenda 21 manifesto (Weaver 2004). The concept of sustainable development provides a framework for the integration environment policies and development strategies. Policy makers guided by the concept of sustainable development will necessarily work to

assure that growing economies remain firmly attached to their ecological roots and that these roots are protected and nurtured so that they may support growth over the long term (WCED 1987).

The Brundtland Report (1987) stressed more equitable access to resources as "growth has no set limits in terms of population or resource use beyond which lies ecological disaster…But ultimate limits there are, and sustainability requires that long before these are reached efforts are made to ensure more equitable access to resources…(p. 45)." This is an important component of sustainable development. Sustainable development requires that societies meet human needs both by increasing productive potential and by ensuring equitable opportunities for all.

The construct of sustainable tourism is an adaptation of the concept of sustainable development. Sustainable tourism means tourism which is socially equitable. Swarbrooke (1998) described that sustainable tourism means fairness which in tourism implies:

- all stakeholders in tourism being given fair treatment
- local people and staff being treated as equals rather than inferiors and servants in relation to the tourists
- managing tourism so the local people can maintain their dignity and sense of pride in themselves and their communities
- boycotting tourism in those countries where the local population is denied human rights
- employees having equal opportunities irrespective of their age, sex, race, or disability
- the development of the concept of fair trade in tourism, where tourists are required to pay a fair price for the holiday they take, and where the benefits of tourism are widely distributed around the host community (p. 78).

Sustainable tourism also implies that host communities need more power to allow them to exert their rights in the tourism planning and development process. From an environmental justice perspective, the role of sustainable tourism is critical in tourism development and planning. Equitable distribution of benefits and costs from tourism and recreation development across groups should be considered in tourism and recreation development process. Most equity related literature in tourism and recreation have focused on distributive rather than procedural justice. However, it is necessary to emphasize procedural justice because tourism developments are conducted by complicated policy making processes and regulated by various policies and regulations. Because there may be situations which seem to exhibit equality of outcomes but in which the process favored some groups at the expense of others, analyses of the process that leads to unequal outcomes are needed (Floyd and Johnson 2002).

The debate about tourism and the environment is set in the context of sustainability and embraces various interpretations of sustainable tourism development. The implication is that tourism development can be reconciled with environmental protection and environmental equity. Governments have tried to make use of tourism to help achieve the sustainable development of geographical areas. Tourism has been used to try to regenerate old industrial cities and provide them with a new direction for the future. The use of rural tourism to help achieve the sustainability of the rural economies and societies has been common. Despite adopting a sustainable development concept, inequality exists among communities and subpopulation.

Tourism and recreation is another field in which some environmental inequalities were felt and remedies and precautions were sought in order to minimize or mitigate disproportionate adverse impacts on both minority and low-income populations imposed by the existing tourism infrastructure and future infrastructure changes. Because tourism and recreation closely linked to environmental issues, like, water quality, air quality and land development, environmental equity dimensions of tourism and recreation clearly fall under environmental justice issues. The relationships among environmental equity, tourism and recreation, land-use, and economic development have not been in the mainstream of the discussions in tourism planning and development. Consequently, the impacts of policies on low-income and minority people have been neglected. This caused inequalities such that while one group may benefit from tourism-driven development, others may suffer from fractured communities and environmental and health hazards. Figure 3-1 shows the framework for sustainable development and environmental justice in tourism and recreation development.

Regarding the relationship between the environment and tourism development, ecotourism plays an important role in tourism and recreation. Ecotourism emphasizes the balance between natural resource conservation and tourism development. Collins (1996) identified environmental issues that should be considered in the earliest stages of tourism development for ecotourism as follows:

- Displacement of local people.
- Loss of access to resources by local residents.
- Costs of establishing basic infrastructure.
- Cultural conflict with natives.
- Better road access may exacerbate resource destruction.

- Direct and indirect erosion of resources.

FIGURE 3-1
THE FRAMEWORK FOR SUSTAINABLE DEVELOPMENT AND ENVIRONMENTAL JUSTICE IN TOURISM AND RECREATION

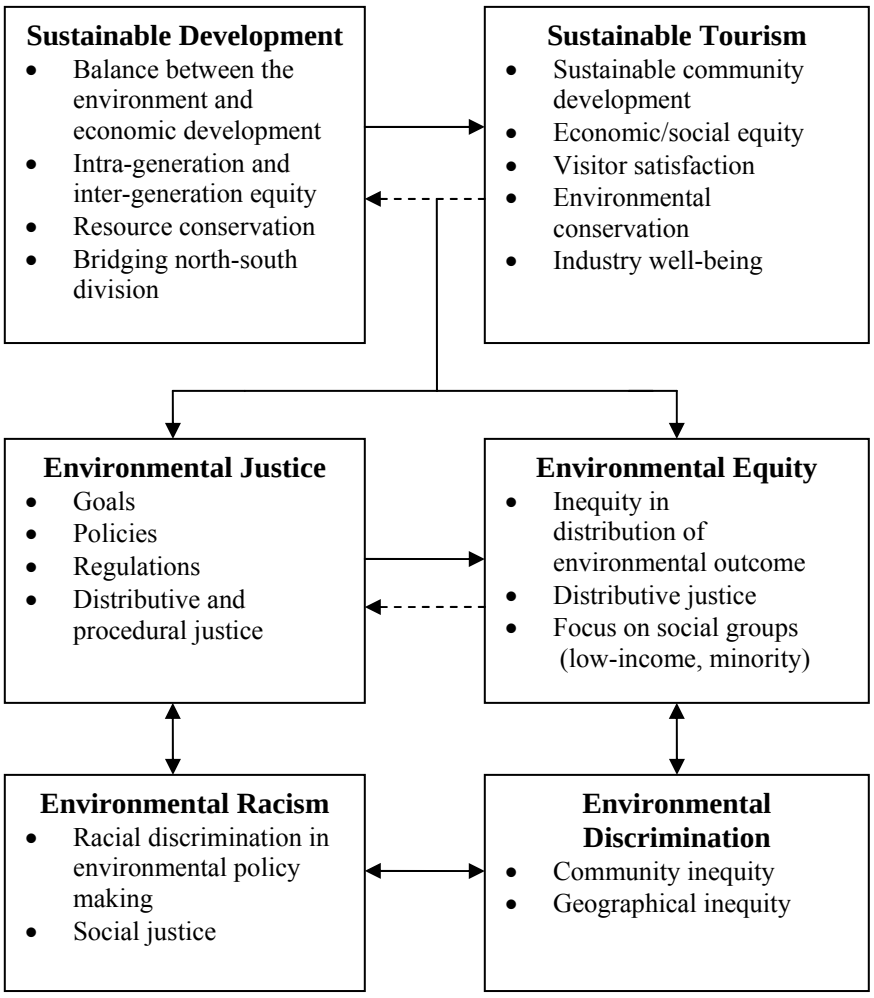


TABLE 3-2
ENVIRONMENTAL JUSTICE ISSUES IN TOURISM AND RECREATION DEVELOPMENT: SOME EXAMPLES

Environmental Factors	Issue	Dimension of Equity	Studies
Water quality	Over-exploitation by tourism industry, water pollution	Environmental equity	GFANC (1997), Dirks et al. (1989), Ukayli and Husain (1988), Stonich (1998), Jenner and Smith (1992)
Air quality	Air pollution problems	Environmental equity	Holden (2000)
Water consumption	Per capita water demand between tourists and residents	Social equity, economic equity	Draper (1997), Grenon and Battisse (1991), Gossling (2001), Gajraj (1981), Salem (1995), Holden (2000), Stonich (1998)
Forest resources	Deforestation problems Inequitable distribution of costs and benefits	Environmental equity	Nepal (2000)
Public health	Tourism development and environmental human health	Social equity	Stonich (1998)
Distribution of tourism and recreational sites	Types of land use (desirable/undesirable)	Environmental equity	Floyd and Johnson (2002), Porter and Tarrant (2001), Wemett and Henderson (1998)
Accessibility to natural goods	Resources/land privatization	Economic equity	Nicholson-Lord (1993), McCool and Stankey (2001), Wilson (1997)
Displacement of local residents	Tourism infrastructure, effect on neighborhood, residential displacements, relocation sites, parks and protected areas, indigenous population	Social equity, cultural equity, economic equity	Monbiot (1995), Akama (1999)

The economic benefits of ecotourism may not stay in the local area but are often appropriated by outside interests, including tourism operators and governments. However, the various costs of ecotourism, which take the form of environmental damage or loss of access to resources formerly utilized by the community, tend to remain localized. Keeping the economic benefits of ecotourism within the local area and giving local residents more incentive to ensure that those benefits will still be received in the long term are key components of equity issue of ecotourism. In addition, ecotourism advocates address ensuring economic benefits are spread widely within the local community to enhance the linkage between the economic benefits of ecotourism and its conservation objectives (Garrod 2003).

Even though ecotourism issues are closely related to the environmental justice, it has been rarely applied to tourism development planning. Gunn and Var (2002) pointed out the limitation of ecotourism as:

> The promises of economic enhancement from low-scale nature tourism development in rare and fragile environments are not always being realized. The purpose of economic return to nearby communities is seldom fulfilled. And, the proliferation of ecotourism development worldwide is causing environmental and social stress in native societies (p. 98)

Dimensions of environmental justice related to tourism and recreation development are summarized in Table 3-2. Recently, researchers have begun to explore several other areas of environmental equity concern, including the work place, housing, and transportation. These studies find that the poor and people of color are disproportionately impacted by pollution on the job, in their homes, and via transportation systems (Bullard and Johnson 1997; Robinson 1991). In the context of tourism and recreation, Floyd and

Johnson (2002) summarized environmental justice related studies in outdoor recreation and suggested several key environmental justice issues to be investigated. Porter and Tarrant (2001) reported the distribution of recreational facilities across residents from an environmental justice perspective. Tarrant and Cordell (1999) examined the location of recreation resources with regard to low-income and minority communities. Whitehead (2000) assessed differential demand for environmental quality by race. The focus of these natural resource studies was distributive equity rather than procedural equity.

Some studies dealt with water issues in tourism development areas (Gajraj 1981; Salem 1995; Holden 2000; Stonich 1998; Gössling 2001; Dirks et al. 1989; Ukayli and Husain 1988; Draper 1997). They found that tourists demand more water than local residents. Stonich (1998) examined the relationships among tourism development, water, and environmental health and distribution of resources and found that water used by tourist was substantially greater than local residents. Draper (1997) showed how easily tourist consumption can outstrip local water supply. He found that the water supply of Banff has to meet the demands of over 25,000 people per day in the peak tourist season and water consumption per capita is two to three times greater than other cities in Alberta. Gössling (2001) investigated the causes and consequences of water extraction by the tourism industry and found that parts of the local residents were experiencing water shortages on a daily basis. Gössling (2001) found that the per capita water demand of tourists in guesthouses and hotels is about 15 times the average daily demand of a local resident.

On the one hand, a wide range of developing countries have focused on tourism to generate additional income and jobs, raise foreign exchange earnings, and to diversify the economy since the 1960s. Tourism, on the other hand, often the main industry in coastal areas, has frequently been named as an important factor in groundwater use (Gössling 2001). For example, groundwater resources in Tunisia were diverted from agricultural uses to support the tourism industry in coastal areas, with the result that land dried out in some areas, became unproductive and was abandoned (GFANC 1997). In addition, the Balearie Islands and in some coastal regions of Spain, saltwater intrusion occurred mainly as a result of the over-use of groundwater by the tourism industry (GFANC 1997). Fresh groundwater is one of the resources most intensively demanded by the tourism industry in costal zones due to the risk of over-exploitation. The consequences of over-exploitation include the lowering of the groundwater table, deteriorating groundwater quality and saltwater intrusion (Dirks et al. 1989; Ukayli and Husain 1988). Average water consumption by foreign tourists in the Mediterranean areas was assumed to be 250 litter per tourist per day in 1984, with water use in hotels of the luxury class reaching up to 600 litter per tourist per day (Grenon and Batisse 1991; GFANC 1997).

In addition to water supply issues, pollution of water sources from tourist waste or from activity related to tourism developments creates other problems. As water quality declines, public health risks may result. According to Stonich (1998), local people were frequently ill from contaminated water due to the consequences of tourism. Only the larger, higher quality hotels, with their own purification systems, could access safe water.

From an environmental equity perspective, examining water supply and consumption related to tourism development is essential to the environmental sustainability of tourism. Equity of access to tourism and environmental resources is one of the key components in equity. As a result of resources or land privatization for tourists and protected areas, local residents and indigenous people face perils of displacement (Nicholson-Lord 1993; McCool and Stankey 2001; Wilson 1997; Monbiot 1995; Akama 1999). Deforestation is another factor associated with equity. Nepal (2000) argued inequitable distribution caused by deforestation resulted from tourism development.

As we view the results of other environmental justice studies, there are unequal distributions of negative environmental consequences from tourism and recreation development across income groups and races. In this sense, Cronin (1990) advocated that sustainable tourism development must follow ethical principles that respect the environment and culture of the host area; the economy; the traditional way of life; and the indigenous people. Cronin (1990) also emphasized the importance of equity in sustainable tourism development. Some literature dealt with tourism development for seeking the appropriate balance between the creation of benefits for the present generation and the protection of resources for future generations, without disadvantaging the poor (Hunter 1995; Pigram and Wahab 1997; Nepal 1997).

Discussion: Towards a Framework of Environmental Justice in Tourism and Recreation Development

In discussing environmental justice, it is necessary to consider full cost accounting approach which includes the benefits and costs of resources. Full cost accounting describes how goods and services should be priced to reflect their true cost including environmental and other social costs. In other words, assessing environmental impacts of tourism and recreation development should include various aspects of benefits and costs for accurate estimation. Integrative and comprehensive approaches for examining environmental equity are needed.

Environmental equity in tourism and recreation can be assessed by a variety of equity aspects. From a distributive justice perspective, equitable distribution of goods and services from tourism related activities across social groups is an important element. Major components of environmental equity should be taken into account for tourism and recreation planning. For example, this could include the effects of environmental degradation (eg. water quality, air quality) caused by tourism and recreation development, accessibility of local people to natural resources, unequal consumption of water, and even public health.

Since the dimensions of environmental equity are complicated, it is hard to determine causes and effects of tourism and recreation development on environmental equity. However, it has been reported that tourism development has caused negative impacts to the environment. As a result of environmental degradation, many low-income people and communities suffer from various environmental problems. This finding

shows that equal distribution of environmental benefits is a crucial for sustainable community development. Thus, it is necessary to establish criteria for assessing environmental justice associated with tourism and recreation development. Tourism and recreation development in a community should be examined using environmental measures and how it would contribute to equal distribution of environmental effects.

Water scarcity, degradation of water quality, unequal distribution of resources, and unequal access to natural resources are widely mentioned as major environmental justice problems. According to previous studies, unequal distribution of environmental benefits is more serious in developing countries, low-income groups, and minority people including indigenous people (Stonich 1998; Holen 2000; Gössling 2001). Disadvantaged people tend to get more negative impacts of environmental degradation than other social groups. Thus, correcting maldistribution of environmental benefits and costs is needed for enhancing environmental equity. Establishing policies focused on equitable distribution is important for sustainable tourism and recreation development.

The procedural justice framework is also needed for enhancing environmental equity. Participation of local residents in the planning of tourism and recreation development is crucial for reflecting local residents' opinions. Sharing important information of tourism and recreation development with stakeholders evenly and providing opportunities for local residents to involve in the process are key factors for ensuring procedural justice. Decision making of environmental policies should be conducted based on participation and consensus of local residents.

It is hard to deny that tourism driven developments have been more focused on economic growth of the community than equitable distribution of economic gains. The developments also disregarded environmental impacts. Even though it is inevitable to focus on development in the initial stage of tourism development, distribution issues should be addressed after the initial stage. However, it is no doubt that tourism and recreation studies have barely paid attention to equity or distribution of economic, environmental, social, and cultural consequences of tourism and recreation development. Environmental justice analysis for tourism development plays an important role for more desirable and sustainable community development and requires more rigorous assessment of environmental impacts of tourism and recreation development.

The notion of sustainable tourism development addresses equity issue and suggests some practical guidelines for environmental conservation. However, the sustainable tourism development framework does not sufficiently cover the environmental justice issue. Natural environments are mentioned in the framework rather than the effects on human beings. In other words, more studies on how tourism and recreation development affect the distribution effects across social groups are needed for analyzing environmental justice.

The principles of environmental justice provide a useful analytical tool to understand ‘justice’ and ‘equity’ issues in tourism and recreation development related environmental issues. The dynamics of the nature and kinds of injustices at the national and community levels may vary by form, context, and the arena of operation but there exists an underlying commonality for a case of environmental justice. The

environmental justice framework is helpful to analyze the environmental problem of tourism and recreation development because the costs and benefits of tourism and recreation development are unevenly distributed. The environmental benefits and costs of tourism and recreation development must be equally distributed for sustainable community development.

CHAPTER IV

METHODOLOGY

Measurement of Equality

Since the definition of equity is complex and subjective, there are a variety of ways to measure equity or justice. Some researchers approach the issue with qualitative methods while others employ quantitative methods. The concept of equity is closely related to subjective perceptions rather than objective facts. For this reason, some researchers emphasize the importance of studying specific situations and conditions in terms of equity analysis. On the other side, other researchers maintain that the analysis of objective aspects of equity is more important to generalize and compare equity situations although the concept of equity includes some subjective aspects.

In this section, I examine quantitative methods employed in previous literature. These methods provide more objective results than qualitative approaches without regard for specific conditions of study areas. In addition, since quantitative analyses assume that all of the study areas have the same conditions, the results of the analyses can be used to compare areas. This study will focus on only the methodology of economic inequality.

In the previous chapter, it was shown that most economic justice studies have focused on investigating economic inequality issues in a certain area and comparing the extent of inequality to other areas. The primary topic of economic inequality is income

inequality because income inequality provides objective results and allows researchers to easily compare income distribution across areas. The process of income inequality measurement may be broken down into three main steps: (i) preparation of the distribution to be analyzed; (ii) choice of the inequality measure; and (iii) calculations and assessment of results.

How do we measure the degree of inequality within a population? There are several important alternative approaches, depending on whether the distribution of the factor is approximately normal across the population. If the factor is distributed approximately normally, then the measurement of inequality is accomplished through analysis of the 'mean' and 'standard deviation' of the factor over the feature such as income, education, and race. The standard deviation of the variable across the population provides an objective measure of the degree of dispersion of the feature across the population.

A different approach to measurement is required for an important class of inequalities-those having to do with the relation of resources across a population. The distribution of wealth and income is typically not statistically normal; instead, it is common to find distributions that are heavily skewed to the low end. In this case, we can get the Lorenz distribution of wealth for the population. Different societies will have Lorenz curves with different shapes. Several measures of inequality result from the technique of organizing a population in rank order with respect to ownership of a resource. The Gini coefficient and the ratio of the bottom quintile to top quintile of

property ownership are common measures of inequality used in comparative economic development.

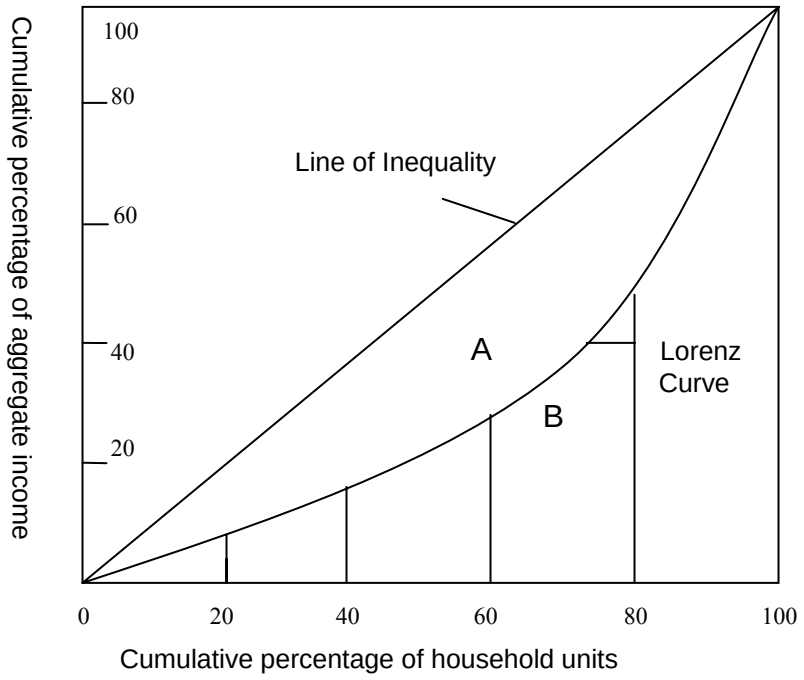
Gini Coefficient

The Gini coefficient is a summary measure of inequality of distributions similar to the index of dissimilarity and related to it. It has widely used in comparing the inequality of income distributions in two or more populations or in a single population over time. The Gini ratio rages from 0 to 1. An index of 1 indicates perfect inequality. For example, with respect to income, this might occur when one household or unrelated person has all the income and the others have none. An index of 0 indicates perfect equality. An example of this would be when each household or unrelated person has the same share of aggregate income as any other household or unrelated person (Siegel 2002).

The calculation of the Gini index is done in the following manner. First, there is a calculation of the cumulative shares of aggregate income corresponding to specified cumulative shares of household units. Second, the results are plotted on a rectangular grid, with household units from 0 to 100 percent on the x-axis and with aggregate income from 0 to 100 percent on the y-axis. This line is called the Lorenz curve. Third, a straight line (diagonal) is plotted from the origin (0, 0) to (100, 100), representing a perfectly equal distribution of income and household units. The Gini ratio represents the proportion of the total area (triangle) under the diagonal line that lies in the area between the diagonal line and the Lorenz curve. Figure 4-1 shows the relationship between the Gini coefficient and the Lorenz curve.

The procedure requires estimating the Lorenz curve, which plots the cumulative income shares on the vertical axis against the cumulative population shares on the horizontal axis. To estimate the income share of an income category, the average income of the income category must be evaluated. Simple procedures, like taking the category midpoint as the average income and dealing with the open-ended top category by discarding it or taking its lower bound as the average, yield misleading Gini estimates.

FIGURE 4-1
DIAGRAM OF LORENZ CURVE AND GINI COEFFICIENT



Gini coefficient = A / (A+B): Area between curve and diagonal / Area under diagonal

Instead, this study adapts a procedure used by the U.S. Census Bureau, the Pareto-linear procedure. This is based on Pareto's (1897) observation that for upper income levels a plot of the logarithm of the number of the recipients with income greater than a

given level of income against the logarithm of income tends to yield a straight line (U.S. Bureau of the Census 1980; Welniak 1988). The Pareto-linear procedure estimates the average income in the income category containing the median, and categories below, as the category midpoint. The average income of income categories above the median is estimated by fitting a Pareto distribution to each interval, using formulas given by Allen (1938) or Klein (1962). Finally, the open-ended upper category is treated in a special way, also based on fitting a Pareto distribution.

Quintile Analysis

Quintile analysis shows what percent of the aggregate of the variable is associated with each fifth of the population. For example, in 1995 the lowest quintile of the population in the U.S. received 4 percent of aggregate household income, the second quintile received 9 percent, the middle quintile received 15 percent, the next-to-the highest quintile received 23 percent, and the highest quintile received 49 percent.

The measures of economic inequality explained above are usually used in static analysis. By employing these measures, researchers compare the degree of economic inequality at a certain time. However, to examine the changes of income distribution in a certain area across periods, time variables should be included in the analysis. This is especially true when we need to compare the economic changes between before and after development. In that case, a time variable could play a significant role.

Study Areas

This study will compare the distribution of economic benefits and costs across local resident groups between tourism and recreation dependent areas and other industry dependent areas in nonmetropolitan areas in the U.S. The 301 nonmetropolitan tourism and recreation areas were chosen as study areas based on the 2004 County Typology Codes classified by the United States Department of Agriculture (USDA).

The Economic Research Service (ERS) of USDA has developed a new set of county-level typology codes that captures differences in economic and social characteristics. This classification was originally completed in 2002 and only counties that were classified as nonmetro by the 1990 census were classified. The classification was updated for this typology by coding the metro counties in 1990 that changed to nonmetro status in 2000.

ERS used the following data to create the nonmetro recreation classification:

1. wage and salary employment in entertainment and recreation, accommodations, eating and drinking places, and real estate as a percentage of all employment reported in the Census Bureau's County Business Patterns for 1999;
2. percentage of total personal income reported for these same categories by the Bureau of Economic Analysis;
3. percentage of housing units intended for seasonal or occasional use reported in the 2000 Census; and
4. per capita receipts from motels and hotels as reported in the 1997 Census of Business (ERS 2004).

The three variables measuring employment, income, and seasonal housing were converted to z-scores and combined into a weighted index (weights of 0.3 were assigned to income and employment and 0.4 to seasonal housing) to reflect recreational activity. Counties with index scores of 0.67 or higher were regarded as potential tourism and recreation counties. Additional counties were considered to be tourism and recreation counties if their value was greater than 0 (the mean of the index) and they had at least $400 per capita of hotel-motel receipts. Inclusion of such counties to the list added some comparatively large counties with a high volume of recreation activity but with urban centers big enough to dilute the percentage of direct recreational income and employment or the proportion of second homes. Counties were also accepted if at least 25 percent of their housing was seasonal, as long as the index exceeded the mean. Each potential county candidate was individually appraised from printed and/or Internet sources and personal knowledge to determine or verify the nature of their recreational function. Fourteen counties that ostensibly qualified, but lacked any known recreational function, were deleted from the list either because they were very small in population with inadequate and misleading County Business Patterns coverage or because they reflected high travel activity without recreational purpose, i.e., overnight motel and eating place clusters on major highways (ERS 2004). According to the nonmetro typology codes, there are 301 nonmetropolitan tourism and recreation counties in the U.S. This accounts for 10.6 percent of total U.S. counties.

The reasons why these areas were chosen as study areas in this study are as follows. First, the classification of the areas is more reliable than any other arbitrary selection methods because of classifying based on a variety of tourism and recreation indicators and economic indicators. Second, investigating these areas allows us to know the overall trends and patterns of economic equity of nonmetropolitan tourism and recreation areas in the U.S. This approach is totally different from the case study dominant previous studies and provides more comprehensive information about nonmetropolitan tourism and recreation areas. Finally, it is relatively easy to compare the differences of economic equity among different industry dependent nonmetropolitan areas. This comparison will provide insights for policy makers in establishing community development policies especially attracting industries for a regional economy. Table 4-1 shows the distribution of nonmetropolitan tourism and recreation dependent counties, manufacturing dependent counties, and farming dependent counties in the U. S.

TABLE 4-1
DISTRIBUTION OF NONMETROPOLITAN COUNTIES

State	NTRC[1]	NMDC[2]	NFDC[3]	State	NTRC	NMDC	NFDC
AL	1	26	3	MT	11	-	14
AK	11	4	-	NE	3	4	51
AZ	5	-	-	NV	4	-	1
AR	3	26	16	NH	4	2	-
CA	12	1	5	NM	5	-	5
CO	22	-	13	NY	5	7	-
CT	-	2	-	NC	12	27	5
DE	1	-	-	ND	3	-	33
FL	5	2	6	OH	-	37	-
GA	4	41	23	OK	3	8	15
HI	3	-	-	OR	6	4	4
ID	10	2	1	PA	6	20	-
IL	2	23	1	RI	-	-	-
IN	-	38	-	SC	2	19	-
IA	2	29	12	SD	8	-	36
KS	-	-	34	TN	1	43	1
KY	1	30	7	TX	15	19	50
LA	2	8	4	UT	11	1	2
ME	6	4	-	VT	7	2	-
MD	3	1	-	VA	6	27	-
MA	2	-	-	WA	5	4	4
MI	37	24	-	WV	3	5	-
MN	14	18	10	WI	20	19	2
MS	1	26	9	WY	7	-	2
MO	7	19	6	**Total**	**301**	**585**	**375**

Note: 1. NTRC: Nonmetropolitan Tourism and Recreation Dependent Communities
2. NMDC: Nonmetropolitan Manufacturing Dependent Communities
3. NFDC: Nonmetropolitan Farming Dependent Communities
Source: ERS, 2004 County Typology Codes

In addition, to compare tourism and recreation dependent counties with other industry dependent counties, the study chose 585 manufacturing dependent counties and 376 farming dependent counties in the U. S.[1]

[1] The selected study counties are shown in Appendix A.

Method of Analysis

This study compared economic equity between nonmetropolitan tourism and recreation counties and different economic types of nonmeteropolitan counties. The ERS classified all U.S. counties by economic type such as farming dependent areas (376 counties), mining-dependent areas (113 counties), manufacturing dependent areas (585 counties), federal/state government dependent areas (222 counties), services dependent areas (114 counties), and nonspecialized areas (615 counties). According to the ERS's classification, some tourism and recreation dependent counties are included in metropolitan areas. However, since there are various and complicated economic systems in metropolitan areas, it is difficult to determine how much tourism and recreation related economic activities affect economic equity in the areas. Therefore, this study excluded those metropolitan tourism and recreation dependent areas for examining more explicit effects of tourism and recreation development on the communities. As a result, the number of tourism and recreation dependent counties decreased from 334 to 301.

The unit of analysis in this study was the county. Counties observed at multiple time points constitute a time series of cross sections that incorporates variability both across units and over time. A data set with such a panel structure is potentially amenable to the use of powerful statistical techniques that can increase the efficiency of estimation (Nielsen and Alderson 1997).

To examine the differences of income equality between nonmetropolitan tourism and recreation dependent communities and other industry dependent communities, this

study compared the trends of income distribution during 1990-2000. This study also categorized the nonmetropolitan tourism and recreation dependent communities by recreational activities and then examined economic equity of the areas.

Panel Data Analysis

If the same units of observation in a cross-section sample are surveyed two or more times, the resulting observations are described as forming a panel or longitudinal data set. Panel data analysis endows regression with both a spatial and temporal dimension. The spatial dimension pertains to a set of cross-sectional units of observation. These could be countries, states, counties, firms, or individuals. The temporal dimension pertains to periodic observations of a set of variables characterizing these cross-sectional units over a particular time span.

Researchers have been able to use time-series cross-sectional data to examine issues that could not be studied in either cross-sectional or time-series settings alone (Greene 2000). While it is possible to employ ordinary multiple regression techniques on panel data, they may not be optimal. The estimates of coefficients derived from regression may be subject to omitted variable bias, a problem that arises when there is some unknown variable or variables that cannot be controlled for that affect the dependent variable. With panel data, it is possible to control for some types of omitted variables even without observing them, by observing changes in the dependent variable over time. This controls for omitted variables that differ between cases but are constant

over time. It is also possible to use panel data to control for omitted variables that vary over time but are constant between cases.

The fundamental advantage of a panel data set over a cross section is that it will allow the researchers far greater flexibility in modeling differences in behavior across individuals. The basic framework is regression model of the form

$$y_{it} = \alpha + \beta' X_{it} + u_{it} \qquad \text{i} = 1,\ldots, N; \quad \text{t} = 1,\ldots,T \qquad (4\text{-}1)$$

The individual effects is α , which is taken to be constant over time *t* and specific to the individual cross-sectional unit *i*. This model is a classical regression model. If we take the α 's to be the same across all units, then ordinary least squares provides consistent and efficient estimates of α and β . There are two basic frameworks used to generalize this model. The fixed effects approach takes α to be a group specific constant term in the regression model. The random effects approach specifies that α is a group specific disturbance (Greene 2000). Most of the panel data applications utilize a one-way error component model for the disturbances, with

$$u_{it} = \mu_i + \nu_{it} \qquad (4\text{-}2)$$

where μ_i denotes the unobservable individual specific effect and ν_{it} denotes the remainder disturbance. μ_i is time-invariant and accounts for any individual specific effect that is not included in the regression. The remainder disturbance ν_{it} varies with individuals and time and can be thought of as the usual disturbance in the regression (Baltagi 2001).

$$y_{it} = \alpha + \beta' X_{it} + \mu_i + \nu_{it} \qquad (4\text{-}3)$$

The component μ_i is the random disturbance characterizing the *i*th observation and is constant through time. We assume that

$$
\begin{aligned}
&E[\nu_{it}] = E[\mu_i] = 0, \\
&E[\nu_{it}^2] = \sigma_\varepsilon^2, \\
&E[\mu_i^2] = \sigma_\mu^2, \\
&E[\nu_{it}\mu_j] = 0 \quad \text{for all } i, \text{ t, and } j, \\
&E[\nu_{it}\nu_{js}] = 0 \quad \text{if } t \neq \text{s or } i \neq j, \\
&E[\mu_i\mu_j] = 0 \quad \text{if } i \neq j.
\end{aligned}
\tag{4-4}
$$

To investigate the relationships among income distribution and socioeconomic variables, this study used generalized least square (GLS) regression analysis. The fixed effects model and random effects model were used. All counties in a given state may be similarly affected by state level processes that are not measured by the county-level variables in the model. These county-invariant error components could produce heterogeneity bias. Heterogeneity bias can seriously affect ordinary least squares (OLS) coefficient estimates. Therefore, the fixed effects model and random effects model are commonly used estimation strategies designed to correct for unmeasured county-invariant factors (Nielsen and Alderson 1997).

The Hausman specification test is the classical test of whether the fixed or random effects model should be used. The test is based on the parts of the coefficient vectors and the asymptotic covariance matrices that correspond to the slopes in the models, that is, ignoring the constant terms (Greene 2000). The null hypothesis is that the individual effects are uncorrelated with other regressors. Therefore, the main question is whether there is significant correlation between the observed individual-specific random effects

and the regressors. If there is no such correlation, then the random effects model would be more powerful and parsimonious than the fixed effects model. If there is correlation, the random effects model would be inconsistently estimated and the fixed effects model would be the model of choice.

In this study, the test statistic is 11.06. The critical value from the chi-squared table with 7 degrees of freedom is 14.07, which is larger than the test value. This suggests that these effects are uncorrelated with other explanatory variables in the model. Therefore, the conclusion is that the random effects model is the better choice.

Dependent Variable

To assess economic equity, the most widely used indicator is income distribution. Income is defined as income during a specific period and the most common period of measurement is a year. For income inequality measurement, there are a variety of methods such as the Lorenz curve, the Gini coefficient, the coefficients of variation, and social evaluation functions. Among them, the Gini coefficient has been widely used in income inequality analysis. Therefore, this study also used the Gini index as a dependent variable.

Independent Variables

Economic Development

Kuznets (1955) saw common features in the inequality trajectories of a handful of industrial societies during the 19th and 20th centuries, suggesting a systematic pattern in which inequality at first increased, reached a peak, and later declined in the course of

industrial development. The inverted U-shape trajectory, the 'Kuznets curve' was later shown to describe fairly well, but admittedly with considerable scatter, the relationship of income inequality with development in cross sections of countries at various levels of development.

Williamson and Lindert (1980) showed the evolution of inequality in the United States as roughly consistent with the Kuznets curve. The authors described income inequality as rising during the second half of the 19th century, remaining high during the first decades of the 20th century, and then declining during the Great Depression and World War II to reach the lowest level during the 1960s. Beginning in the early 1970s in the United States, inequality in the distribution of income of households and families began to rise. Median household income is used as proxy for economic development to examine the relationship between income inequality and economic development.

Deindustrialization

Many studies hypothesize that certain types of economic restructuring can cause income inequality because manufacturing employment equalizes income distribution while service-sector jobs increase income inequality (Chevan and Stokes 2000; Leatherman and Marcouiller 1996; Morris and Western 1999; Nielsen and Alderson 1997). The percentage of the workforce employed in the manufacturing sector declined from about 30 percent in the mid-1960s to about 20 percent in the late 1980s (Danziger and Gottschalk 1995). Bluestone and Harrison (1982) and Harrison and Bluestone (1988) have popularized the idea that 'deindustrialization', the move away from manufacturing, is rooted in increasing international competition and is a principle cause

of the upswing in inequality. The central argument is a compositional one: since earnings inequality is typically lower in manufacturing than in services, the movement of the workforce from the more equal sector (manufacturing) to the more unequal one (services) should increase overall inequality. In support of the deindustrialization hypothesis, Lorence and Nelson (1993) found widening earnings inequalities between 1970 and 1980 in Standard Metropolitan Statistical Areas (SMSAs) with a declining industrial base. Using data on U.S. counties, Nielson and Alderson (1997) found highly significant negative effects of the percentage employed in manufacturing on inequality of the distribution of family incomes. Alderson and Nielson (1999) also found a significant effect of the manufacturing share of employment in 16 OECD countries over 1967-1992 period.

However, deindustrialization cannot be viewed as a complete explanation of income inequality. First, as Danziger and Gottschalk (1995) point out, much of the rise in inequality may be attributed to changes in wages within industries. It is unlikely that transfers of workers between industries would have contributed the bulk of the overall upswing. Second, the deindustrialization argument is based on the assumption that manufacturing jobs require relatively less education and therefore do not contribute to the increasing premium to higher educational credentials that has characterized the increasing inequality. Manufacturing employment, percentage of manufacturing labor force, was employed as an explanatory variable for detecting the effects of deindustrialization on income inequality.

Race Dualism

Nielsen and Alderson (1997) pointed out that one of causes of income inequality in the United States is closely related to the nature of race relations. Some studies also found that racial inequality in the U.S. (Tomaskovic-Devey and Roscigno 1996; Fossett, Galle, and Burr 1989; Darity, Dietrich, and Guilkey 1997). In this study, to control for the racial composition of the population, the percent of the population that is black was employed as an independent variable. However, due to the multicollinearity problem, the variable, the percent of black population in the communities, was excluded. Instead, this study used race dualism to examine income inequality among races, especially white and black.

Sector Dualism

Nielsen and Alderson (1995) found that sector dualism was significantly associated with overall income inequality and partially explains the inverted-U pattern of the Kuznets curve. This study also used sector dualism employed in the Nielsen and Alderson (1995)'s study.

Female Labor Force

One of the most significant labor market developments in the second half of this century has been the increase in the labor force activity of women. In particular, the tourism and recreation industry shows a relatively high proportion of female labor force. Examining the effect of women labor force participation on income inequality is needed. The labor supply of women and changes in part-time jobs tend to influence income inequality of areas. Current increases in women's labor force participation have been

linked to increases in family income inequality because married women in particular have increased their participation in the labor force, often to offset lost spousal earnings or as part of a dual career couple (McLaughlin 2002a). Recent research suggests that female labor force employment has led to greater income inequality (Ryscavage 1999).

Effect of Tourism and Recreation Industry

Income inequality also can vary across counties due to differences in industry composition. The decline of high-paying manufacturing and other goods-producing jobs is frequently cited as an important cause of greater inequality because they have traditionally provided many blue-collar workers access to good jobs. Alternatively, service industries have been historically associated with relatively more inequality. However, other studies have found that industry structure played little role in influencing inequality (Bartik 1996; Bound and Johnson 1992). Growth in the service sector in rural areas also has tended to be in personal services and retail trade, which often create lower-paying jobs. High-end service sector jobs in health and business services locate in urban or metro areas. This urban agglomeration of high-end business services and telecommunications facilities suggests that sector growth or decline has very different implications for income levels and income inequality in metropolitan and nonmetropolitan areas (McLaughlin 2002a).

In addition, much economic restructuring has been associated with increases in part-time and contingent employment (Belouse 1989). Since part-time jobs are often filled by less highly educated or skilled workers and since such jobs are less well-paid, an increase in the share of employment that is part-time increases inequality in earnings

and household income. Because tourism and recreation related jobs are comprised of a high proportion of part-time opportunities and seasonality, it is expected that there is a positive relationship between tourism and recreation employment and income inequality. Earnings from tourism and recreation industry and labor force in tourism and recreation industry are employed as indicators to show how tourism and recreation development contribute to income inequality of the communities.

Region

Income inequality between the southern region of the U. S. and other regions has showed huge differences. To capture the regional effect on income inequality, the regional variables were included as independent variables. Northeast region, Midwest region, South region and West region were included based on the Census regions.

Type of Community

To compare income inequality among selected communities, the type of community (tourism and recreation dependent/manufacturing dependent/farming dependent) is included as a dummy variable.

The variables used in this study are summarized in Table 4-2 and Table 4-3.

TABLE 4-2
VARIABLES IN THE GLS MODEL OF INCOME INEQUALITY

Income inequality. Gini coefficient of inequality calculated by author from county distributions of household income.
Median household income. Logged base 10.
Manufacturing employment. Percentage of persons employed in manufacturing.
Female labor force. Percentage of females in the labor force.
Tourism and recreation employment. Percentage of labor force in tourism and recreation industry.
Tourism and recreation earnings. Percentage of earnings in tourism and recreation industry.
Race dualism. Calculated as $|p\text{-}L|$, where p is the percentage of black households, and L is the black households' percentage share of total income, logged base 10.
Sector dualism. Calculated as $|p\text{-}L|$, where p is the farm population as percentage of total population, and L is farm earnings as a percentage of total earnings, logged base 10.
Region. Northeast region, Midwest region, South region, and West region, classified by the Census Bureau
Type of community. Tourism and recreation dependent community, manufacturing dependent community, and farming dependent community.

TABLE 4-3
SUMMARY OF DEPENDENT AND INDEPENDENT VARIABLES

Variable	Obs.	Mean	S.D.	Min	Max
Percent female in the labor force	1261	45.48	2.32	27.4	53.14
Percent of labor force in manufacturing	1261	17.90	11.07	0	48.55
Percent of labor force in tourism/recreation	1261	7.20	4.13	0	30.2
Gini	1260	42.71	3.52	32.9	60.8
Median household income	1261	4.50	.07	4.1	4.8
Percent of earnings in tourism/recreation	1222	1.56	3.58	0	54.4
Race dualism	1261	.24	.35	0	1.3
Sector dualism	1235	.72	.40	0	2.5
Tourism dependent community	1261	.23	.42	0	1
Manufacturing dependent community	1261	.46	.49	0	1
Farming dependent community	1261	.29	.45	0	1
South region	1261	.40	.49	0	1
Northeast region	1261	.05	.23	0	1
Midwest region	1261	.40	.49	0	1
West region	1261	.14	.35	0	1

Data Sources

This study used Summary Tape File 3, 1990 and 2000 (U.S. Census Bureau) and the Regional Economic Information System (Bureau of Economic Analysis) for examining economic equity among different income groups and races in selected nonmetropolitan communities in the U.S.

CHAPTER V

FINDINGS

This chapter examines income inequality comparison among tourism and recreation dependent communities, manufacturing dependent communities, and farming dependent communities. Determinants of income inequality of each community type will be also covered and discussed. In addition, income inequality of tourism and recreation dependent communities by recreational type will be dealt with.

Income Inequality Comparison

Table 5-1 shows that farming dependent communities have the highest income inequality in 1990 and 2000 followed by tourism and recreation development communities. The income inequality in farming dependent communities can be explained by the effects of farm population. Nielsen and Alderson (2001) found that the farm population has a positive and strongly significant effect on income inequality. Levernier, Patridge, and Rickman (1998) also found that counties more reliant on farming are associated with above average levels of income inequality. This contradicts the conjecture that a larger agricultural sector would be associated with less inequality. This finding suggests that counties that have maintained higher levels of farm population have experienced greater increases in income inequality. However, examining change in the Gini coefficient, tourism and recreation dependent communities show the highest

rate increase (3.1 percent) during the period. The increase in the Gini coefficient of farming dependent communities was 1.4 percent while that of manufacturing dependent communities remained constant.

TABLE 5-1
MEDIAN HOUSEHOLD INCOME AND GINI COEFFICIENT
BY NONMETROPOLITAN COUNTIES: 1990 AND 2000

Community type	Median household income		Gini coefficient	
	1990	2000	1990	2000
Tourism and recreation	31,196	34,889	.422	.435
Manufacturing	30,184	33,387	.422	.422
Farming	27,201	30,449	.431	.437

Note: Median household income is adjusted for inflation to 1999 dollars.
Source: Author's calculations from the 1990 and 2000 the Census Summary Tape Files 3

Median household income of tourism and recreation development communities is higher than that of both manufacturing dependent communities and farming dependent communities. This result is supported by English, Marcouiller and Cordell (2000). The authors found that counties dependent on tourism had significantly higher per capita income levels than did nondependent counties. Some studies found evidence identifying inequalities and distributional issues tied to tourism development (Smith 1986; Leatherman and Marcouiller 1996). The median household income of tourism and recreation dependent communities increased 11.8 percent from 1990 to 2000. Median household income of manufacturing dependent communities and of farming dependent communities increased 11.9 percent and 10.6 percent, respectively.

Income inequality of selected nonmetropolitan communities has increased during 1990-2000 except in manufacturing dependent communities. Similarly, the income

inequality of tourism and recreation dependent communities, especially, dramatically increased compared to other communities. Thus, tourism and recreation dependent communities can be characterized as having both high income levels and high income inequality. Manufacturing dependent communities show relatively low income inequality with high income levels while farming dependent communities show low income levels and high income inequality.

Table 5-2 describes the mean household income by quintile among selected nonmetropolitan communities. Tourism and recreation dependent communities show the highest inequality in income distribution. In 2000, mean household income of the top 20% of the population of the communities was $107,683, while that of the lowest 20% of the population was $9,188. This result shows that there is a big income gap between high and low-income groups in tourism and recreation dependent communities.

TABLE 5-2
MEAN HOUSEHOLD INCOME OF TOURISM AND RECREATION, MANUFACTURING, AND FARMING DEPENDENT COMMUNITIES

	1990					2000				
	Lowest 20%	2nd 20%	3rd 20%	4th 20%	Top 20%	Lowest 20%	2nd 20%	3rd 20%	4th 20%	Top 20%
NTRC	8,198	19,427	31,147	46,136	90,584	9,188	22,110	34,929	51,346	107,683
NMDC	7,425	18,287	30,132	44,846	84,682	8,385	20,730	33,369	49,223	98,282
NFDC	6,875	16,703	27,111	40,555	81,111	7,660	19,036	30,435	45,132	93,198

Note: Median household income is adjusted for inflation to 1999 dollars.
Source: U.S. Census Bureau.

Determinants of Income Inequality

It is necessary to examine which components contribute to income inequality in nonmetropolitan communities. Generalized least square (GLS) regression analyses of the

models was employed giving careful attention to outliers and influential cases, using various regression diagnostics available in the Statistical Package for the Social Sciences (SPSS) and the Stata statistical program. The matrices of independent variables were checked for multicollinearity. Only one independent variable was found with this problem, percentage of black population. It was excluded in the analysis.

The independent variables were divided into two sets. The first set comprised variables that originate in general theories of income inequality and economic development, often in the context of the Kuznets curve. These include economic development (logged median household income), the effect of labor force shifts out of agriculture (sector dualism), the effects of deindustrialization (percent of labor force in manufacturing and female labor force participation) and the effects of tourism and recreation development (percent of labor force in tourism and recreation and percent of earnings in tourism and recreation industry). The second set included race related variables (race dualism and region) and types of nonmetropolitan community.

Table 5-3 shows the estimates of four models. Model 1 examines only the relationship between income inequality and median household income. The results of Model 1 show to what extent economic development contributes to economic equality. As expected, there is a significant negative relationship between income inequality and median household income. Model 2 includes some economic restructuring related independent variables and examines the effects of economic restructuring on income inequality. Model 3 examines the effects of race related variables such as racial dualism and minority population dominated areas (South region) on income distribution. This

model also shows the effects of types of community on income inequality. Model 4 is a full model and provides the effects of selected independent variables and income inequality.

TABLE 5-3
UNSTANDARDIZED COEFFICIENTS OF RANDOM EFFECTS GLS REGRESSION OF INCOME INEQUALITY: ALL SELECTED COUNTIES, 1990

Independent Variable	Model 1	Model 2	Model 3	Model 4
Constant	128.642***	131.342***	118.485***	123.549***
	(4.494)	(4.568)	(4.374)	(4.318)
Median household income (log)	-19.834***	-19.878***	-17.689***	-17.493***
	(1.031)	(1.068)	(1.015)	(1.014)
Percent of labor force in manufacturing	-	-.062***	-	-.074***
		(0.010)		(0.011)
Percent females in the labor force	-	-.025	-	-.080**
		(0.032)		(0.030)
Percent of labor force in tourism/recreation	-	.006	-	.064
		(.110)		(0.107)
Percent of earnings in tourism/recreation	-	.102**	-	.101**
		(0.037)		(0.034)
Sector dualism (log)	-	-.761**	-	-.438
		(0.227)		(0.228)
Race dualism (log)	-	-	3.256***	3.143***
			(0.295)	(0.291)
Northeast	-	-	-.645	-1.202*
			(0.617)	(.535)
Midwest	-	-	-1.393**	-1.988***
			(.450)	(.382)
West	-	-	.465	-.895*
			(.487)	(.439)
Tourism and recreation dependent	-	-	.893***	-.285
			(.209)	(0.248)
Farming dependent	-	-	.393	-.458
			(.208)	(0.251)
R^2	.304	.292	.513	.574
Rho	.318	.345	.147	.097
Number of counties	1,255	1,218	1,255	1,218

Notes: Gini x 100, Numbers in parentheses are standard errors.
*p<.05 ** p<.01 ***p<.001

Model 4 in Table 5-3 shows that the coefficient of earnings in tourism and recreation is a positive relationship with income inequality. This suggests that tourism

and recreation development contributes to income inequality in the selected U.S. nonmetropolitan communities. The effect of region on income inequality is significantly negative. This result indicates that South region contributes to income inequality compared to Northeast region, Midwest region, and West region. This result is consistent with most previous studies, which investigate the relationship between regional characteristics and income inequality. Race dualism measures the inequality generated by the difference in average income between black and white households in a county. Racial dualism has positive and significant effects on income inequality for all periods. This result suggests that race dualism is a major determinant of income inequality within counties.

By contrast, the coefficients of median household income, employment in manufacturing, and female labor force are negatively associated with income inequality. In the case of the effect of female labor force, this finding is consistent with the results of Ryscavage et al (1992), Cancian et al. (1993), and Nielsen and Alderson (1997). Levy and Murnane (1992) also maintained that female labor force participation may have served to reduce wage inequality because female wages tend to be more equal than male. Regarding income inequality by community type, there are no significant differences among the three community types. This result implies that there is no significant difference in income inequality among tourism and recreation dependent communities, manufacturing dependent communities, and farming dependent communities in 1990.

TABLE 5-4
UNSTANDARDIZED COEFFICIENTS OF RANDOM EFFECTS GLS REGRESSION OF INCOME INEQUALITY: ALL SELECTED COUNTIES, 2000

Independent Variable	Model 1	Model 2	Model 3	Model 4
Constant	136.892***	135.205***	127.685***	130.915***
	(4.389)	(5.644)	(4.624)	(5.365)
Median household income (log)	-20.770***	-21.084***	-18.927***	-19.528***
	(1.086)	(1.133)	(1.024)	(1.083)
Percent of labor force in manufacturing	-	-.073***	-	-.050***
		(0.010)		(0.012)
Percent females in the labor force	-	.082*	-	.014
		(0.035)		(0.035)
Percent of labor force in tourism/recreation	-	.056*	-	.052
		(0.026)		(0.028)
Percent of earnings in tourism/recreation	-	.085**	-	.071**
		(0.028)		(0.026)
Sector dualism (log)	-	-.164	-	-.218
		(0.212)		(0.218)
Race dualism (log)	-	-	2.770***	2.663***
			(0.295)	(0.306)
Northeast	-	-	-1.021	-1.241*
			(0.581)	(0.541)
Midwest	-	-	-2.085***	-2.242***
			(.429)	(0.391)
West	-	-	-.589	-1.331**
			(.459)	(0.436)
Tourism and recreation dependent	-	-	2.411***	1.267***
			(0.194)	(0.248)
Farming dependent	-	-	1.147***	.797**
			(0.192)	(0.248)
R^2	.344	.371	.585	.610
Rho	.373	.295	.155	.123
Number of counties	1,259	1,216	1,259	1,216

Notes: Gini x 100, Numbers in parentheses are standard errors.
*p<.05 ** p<.01 ***p<.001

Table 5-4 represents the results from the 2000 data. Compared to the results of 1990, there are two things to highlight. The first is that the effect of the female labor force on income inequality is not significant. Model 2 shows that the coefficient of female labor force is even positively associated with income inequality. This result is totally different

from the 1990 results. The second finding is that different community types show different income inequality. The coefficient of tourism and recreation dependent communities is positively related with income inequality compared to manufacturing dependent communities. This result suggests income distribution of tourism and recreation dependent communities are more unequal than that of manufacturing dependent communities. Farming dependent communities are also positively associated with income inequality.

The coefficient of median household income shows a negative relationship with income inequality. This result supports the Kuznets hypothesis. The size of the manufacturing labor force has a strongly significant negative effect on income inequality in 2000. This result provides strong support for the deindustrialization thesis.

The prototype of all compositional mechanisms was Kuznets's explanation about inequality trends as the partial result of the labor force shift from agriculture (Nielsen and Alderson 2001). Sector dualism can capture the effect. Sector dualism measures the inequality generated by the difference in average income between the farming sector and the rest of economy. The expectation is that sector dualism has a positive effect on overall income inequality, as this variable captures the effect of lower inequality assumed to exist within the agricultural sector (Kuznets 1955). However, the coefficient of sector dualism is not significant for both 1990 and 2000.

The effect of earnings in tourism and recreation on income inequality is positive (.069). This result suggests that tourism and recreation related development increases income inequality and supports the argument that the more the service sector grows, the

more income inequality increases. As a result of industrial restructuring and the shift toward services and retail trade, part-time jobs have been increasing in the U.S. labor market. Since part-time jobs are often associated with occupations and industries that pay lower wages, fewer hours combine with lower wages to potentially increase income inequality (Burtless 1993). In addition, workers can be part-time if their jobs are seasonal. Their seasonal nature would contribute to income inequality. Tourism and recreation related jobs are generally defined as having high seasonality and a high proportion of part-time involvement. Therefore, employment in tourism and recreation tends to have a positive relationship with income inequality and the result confirms the relationship.

Like the 1990 data results, race related variables have significant positive relationships with income inequality. The results imply that racial related variables are crucial factors for looking at increasing income inequality in the U.S.

Table 5-5 summarizes the result of random effects model between 1990 and 2000. The coefficients of median household income and of manufacturing employment show negative relationships with income inequality. Earnings in tourism and recreation show a positive relationship with income inequality. Compared to the South region, the Midwest region and West region are negatively related with income inequality. In particular, this table indicates that income inequality has been increased between 1990 and 2000 (3.617).

TABLE 5-5
UNSTANDARDIZED COEFFICIENTS OF RANDOM EFFECTS GLS REGRESSION OF INCOME INEQUALITY: ALL SELECTED COUNTIES, 1990-2000

Independent Variable	Model 1	Model 2	Model 3	Model 4
Constant	71.426***	97.203***	65.868***	126.951***
	(2.146)	(2.648)	(2.059)	(3.149)
Median household income (log)	-6.527***	-13.875***	-5.387***	-18.903***
	(0.479)	(0.647)	(0.459)	(0.709)
Percent of labor force in manufacturing	-	-.073***	-	-.060***
		(0.007)		(0.007)
Percent females in the labor force	-	.170***	-	-.031
		(0.021)		(0.021)
Percent of labor force in tourism/recreation	-	.181***	-	.002
		(0.019)		(0.022)
Percent of earnings in tourism/recreation	-	-.057*	-	.076***
		(0.020)		(0.019)
Sector dualism (log)	-	.082	-	-.302*
		(0.152)		(0.151)
Race dualism (log)	-	-	3.389***	2.965***
			(0.226)	(0.207)
Northeast	-	-	-1.910***	-.757
			(0.530)	(0.470)
Midwest	-	-	-2.055***	-1.791***
			(.409)	(0.361)
West	-	-	-.686	-.796*
			(.428)	(0.387)
Tourism and recreation dependent	-	-	1.144***	.174
			(0.155)	(0.169)
Farming dependent	-	-	1.237***	.206
			(0.152)	(0.169)
Time effect (1990-2000)				3.617***
			-	(0.218)
R^2	.143	.211	.467	.600
Rho	.300	.316	.133	.131
Number of counties	2,513	2,433	2,513	2,433

Notes: Gini x 100, Numbers in parentheses are standard errors.
*p<.05 ** p<.01 ***p<.001

Income Inequality of Tourism and Recreation Dependent Communities

The results show that tourism and recreation dependent communities are more unequal in income distribution than manufacturing dependent communities. To examine what factors contribute to increase income inequality in tourism and recreation

dependent communities, a random effects model was employed. The coefficients of median household income and employment in manufacturing show a negative relationship with income inequality (Table 5-6). Female labor force increases income inequality in the tourism and recreation dependent community. This result is not consistent with the result from all communities. Racial dualism and regional characteristics have effects on increases in income inequality. In particular, racial dualism is the most influential factor contributing to income inequality.

TABLE 5-6
UNSTANDARDIZED COEFFICIENTS OF RANDOM EFFECTS GLS REGRESSION OF INCOME INEQUALITY: NTRC, 1990

Independent Variable	Model 1	Model 2	Model 3	Model 4
Constant	93.654***	103.852***	88.788***	98.703***
	(8.890)	(8.994)	(8.144)	(8.351)
Median household income (log)	-11.738***	-16.258***	-10.372***	-14.023***
	(2.009)	(2.142)	(1.885)	(2.004)
Percent of labor force in manufacturing	-	-.067**	-	-.074***
		(0.025)		(0.023)
Percent females in the labor force	-	.244***	-	.161*
		(0.066)		(0.063)
Percent of labor force in tourism/recreation	-	-.031	-	-.016
		(0.146)		(0.143)
Percent of earnings in tourism/recreation	-	.082	-	.056
		(0.043)		(0.043)
Sector dualism (log)	-	.342	-	.487
		(0.605)		(0.567)
Race dualism (log)	-	-	2.978***	2.622**
			(0.836)	(0.813)
Northeast	-	-	-2.846***	-2.348**
			(0.712)	(0.712)
Midwest	-	-	-3.041***	-2.935***
			(0.554)	(.548)
West	-	-	-1.333*	-1.640**
			(0.566)	(0.573)
R^2	.079	.174	.313	.383
Rho	.211	.237	0	0
Number of counties	298	287	298	287

Notes: Gini x 100, Numbers in parentheses are standard errors.
*p<.05 ** p<.01 ***p<.001

However, Table 5-7 shows that there is no significant relationship with female labor force and income inequality in 2000. This implies that the effect of female labor force on income inequality has weakened from 1990 to 2000. Even though the racial dualism and regional variables show significant positive indications associated with income inequality, the strength has been reduced between the periods.

TABLE 5-7
UNSTANDARDIZED COEFFICIENTS OF RANDOM EFFECTS GLS REGRESSION OF INCOME INEQUALITY: NTRC, 2000

Independent Variable	Model 1	Model 2	Model 3	Model 4
Constant	83.603***	91.413***	87.368***	89.517***
	(7.588)	(12.706)	(9.487)	(12.207)
Median household income (log)	-8.787***	-10.938***	-9.278***	-10.272***
	(2.197)	(2.477)	(2.108)	(2.364)
Percent of labor force in manufacturing	-	-.112**	-	-.141***
		(0.034)		(0.031)
Percent females in the labor force	-	.071	-	.086
		(0.083)		(0.081)
Percent of labor force in tourism/recreation	-	.013	-	.044
		(0.046)		(0.044)
Percent of earnings in tourism/recreation	-	.029	-	.009
		(0.038)		(0.037)
Sector dualism (log)	-	-.755	-	-.415
		(0.630)		(0.609)
Race dualism (log)	-	-	1.445	1.055
			(0.942)	(0.944)
Northeast	-	-	-2.776***	-2.543**
			(0.758)	(0.754)
Midwest	-	-	-3.376***	-3.307***
			(0.619)	(0.594)
West	-	-	-1.623**	-2.641***
			(0.603)	(0.584)
R^2	.060	.160	.247	.322
Rho	.203	.188	.024	0
Number of counties	301	291	301	291

Notes: Gini x 100, Numbers in parentheses are standard errors.
*p<.05 ** p<.01 ***p<.001

Income Inequality by Recreation Type

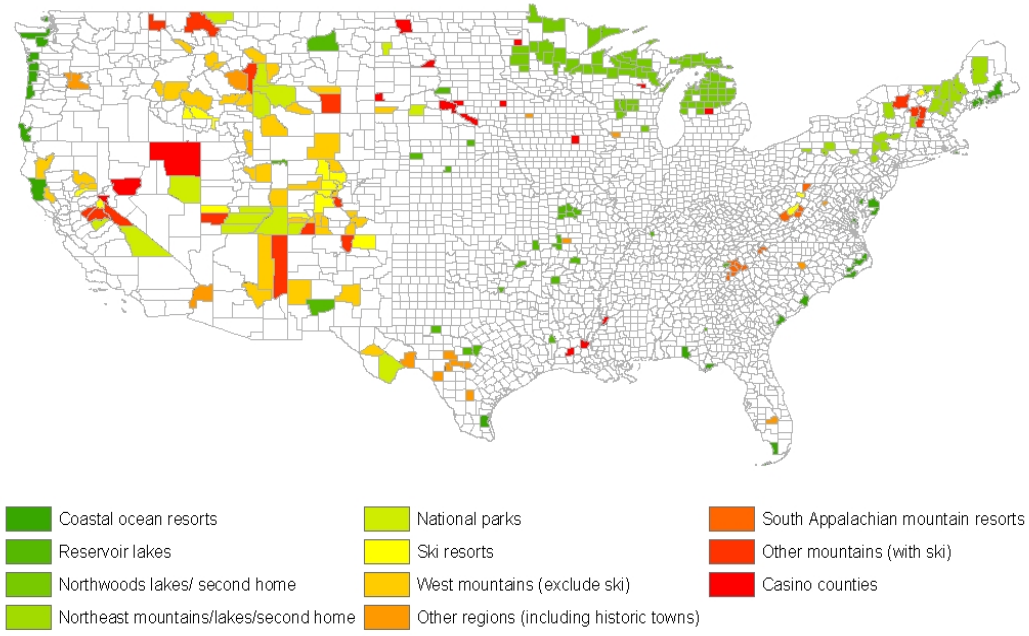
Johnson and Beale (2002) classified nonmetropolitan tourism and recreation communities into 11 categories including Coastal ocean resorts, Reservoir lakes, Northwoods lakes/ second home, Northeast mountains/lakes/second home, National parks, West mountains (exclude ski), Ski resorts, Casino counties, Other mountains (with ski), South Appalachian mountain resorts, and Other regions (including historic towns)[2]. Figure 5-1 shows the nonmetropolitan tourism and recreation communities in the U.S. To compare income inequality within tourism and recreation communities, income distribution of the communities using the Johnson and Beale classification was analyzed.

The results are shown in Table 5-8 and Table 5-9. The Gini coefficient of all recreational types has increased between 1990 and 2000. The income inequality of all tourism and recreation dependent communities has increased from .425 to .438. The income inequality of West mountain communities, Ski resorts, and Northeast mountains/lakes/second home, especially, also shows an increase. Ski resorts, Coastal ocean resorts, and South Appalachian mountain resorts also show relatively high income inequality. In particular, Ski resorts and west mountains communities show high increase rates of income inequality between 1990 and 2000. Income inequality of Northwoods lakes/second home areas and Northeast mountains/lakes/second home areas is relatively low.

---

[2] The whole counties are summarized in Appendix A.

FIGURE 5-1
NONMETROPOLITAN TOURISM AND RECREATION COMMUNITIES BY RECREATION TYPE



Note: Excludes counties in Alaska and Hawaii

The ratio of household shares of aggregate income also shows the income distribution of tourism and recreation development communities. Based on the ratio of the top 5 percent to lowest shares, Income inequality of the reservoir lakes, Northeast mountains/lakes/second home, West mountains, Ski resorts, Other mountain areas, South Appalachian mountain resorts, and other regions has increased. The income inequality of

the Casino communities and the Coastal ocean resorts has decreased. In 1990, income inequality of South Appalachian mountain resorts is the highest followed by casino counties, coastal ocean resorts, and other regions (including historic towns). In 2000, income inequality of the South Appalachian mountain resorts is still the highest followed by Other regions (including historic towns), Other mountains (with ski), and Coastal ocean resorts.

TABLE 5-8
MEDIAN HOUSEHOLD INCOME AND GINI COEFFICIENT OF NONMETROPOLITAN TOURISM AND RECREATION DEVELOPMENT COUNTIES: 1990 AND 2000

Region	Number of counties	Median household income		Gini coefficient	
		1990	2000	1990	2000
Coastal ocean resorts	32	35,724	37,931	.441	.454
Reservoir lakes	27	25,966	29,555	.436	.444
Northwoods lakes/ second home	68	28,537	34,671	.405	.416
Northeast mountains/lakes/second home	21	33,706	34,735	.401	.415
National parks	18	32,553	35,796	.425	.429
West mountains (exclude ski)	41	29,907	33,101	.415	.433
Ski resorts	16	37,321	43,446	.418	.459
Casino counties	17	28,786	31,939	.431	.438
Other mountains (with ski)	16	32,687	35,772	.426	.440
South Appalachian mountain resorts	13	28,522	32,382	.440	.449
Other regions (including historic towns)	25	35,061	36,413	.432	.444
Total NTRC	294	31,706	35,067	.425	.438

Note: Median household income is adjusted for inflation to 1999 dollars.
Source: Author's calculations from the 1990 and 2000 the Census Summary Tape Files 3

TABLE 5-9
MEASURES OF HOUSEHOLD INCOME INEQUALITY OF NONMETROPOLITAN TOURISM AND RECREATION DEVELOPMENT COUNTIES:1990 AND 2000

Region	Number of counties	1990		2000	
		P95/P20	P95/P40	P95/P20	P95/P40
Coastal ocean resorts	32	7.47	4.18	7.40	4.15
Reservoir lakes	27	7.14	4.01	7.19	4.08
Northwoods lakes/ second home	68	6.46	3.65	6.21	3.57
Northeast mountains/lakes/second home	21	6.14	3.44	6.46	3.67
National parks	18	7.29	3.91	7.29	3.90
West mountains (exclude ski)	41	6.72	3.71	6.93	3.86
Ski resorts	16	6.45	3.75	7.19	4.21
Casino counties	17	7.55	4.00	6.80	4.40
Other mountains (with ski)	16	7.18	3.87	8.17	4.69
South Appalachian mountain resorts	13	7.68	4.10	8.71	4.70
Other regions (including historic towns)	25	7.30	3.98	8.60	4.70
Total NTRC	294	7.03	3.87	7.36	4.18

Note: Median household income is adjusted for inflation to 1999 dollars.
P95: Top 5% of total household income, P20: lowest 20% of total household income, P40: middle 40% of total household income
Source: Author's calculations from the 1990 and 2000 the Census Summary Tape Files 3

The change of median household income and the Gini coefficient between 1990 and 2000 in tourism and recreation dependent communities is shown in Table 5-10. The Gini coefficient of Ski resorts shows the highest increase (9.8 percent) followed by West mountain communities (4.3 percent) and Northeast mountains/lakes/second home communities (3.5 percent). In contrast, the changes of Gini coefficients of National parks communities (0.9 percent), Casino communities (1.6 percent), and Reservoir lakes communities (1.8 percent) show a relatively small increase. However, in the case of Casino and Reservoir lakes communities, they show relatively high Gini coefficients. Therefore, it cannot be concluded that income inequality of the communities decreased.

TABLE 5-10
THE CHANGE OF MEDIAN HOUSEHOLD INCOME AND GINI COEFFICIENT IN TOURISM AND RECREATION DEPENDENT COMMUNITIES: 1990-2000

Region	Median household income (%)	Gini coefficient (%)
Coastal ocean resorts	6.2	2.9
Reservoir lakes	13.8	1.8
Northwoods lakes/ second home	21.5	2.7
Northeast mountains/lakes/second home	3.1	3.5
National parks	10.0	0.9
West mountains (exclude ski)	10.7	4.3
Ski resorts	16.4	9.8
Casino counties	11.0	1.6
Other mountains (with ski)	9.4	3.3
South Appalachian mountain resorts	13.5	2.0
Other regions (including historic towns)	3.9	2.8

Northwoods lakes/second home communities (21.5 percent), Ski resorts (16.4 percent), Reservoir lakes communities (13.8 percent), and South Appalachian mountain resorts (13.5 percent) show relatively high changes of median household income during the period. However, Coastal ocean resorts (6.2 percent) Other regions (including historic towns) communities (3.9 percent), and Northeast mountains/lakes/second home (3.1 percent) experienced small increases

Income Inequality of Manufacturing Dependent Communities

Table 5-11 and Table 5-12 show that the coefficients of median household income of the community are significant and negative for both periods. These results confirm the predicted negative association of income inequality with economic development. The effect of manufacturing employment has a negative relationship on income inequality for both 1990 and 2000. The coefficient for female labor force is not consistent. While the

coefficient shows a negative relationship with income inequality for 1990, the coefficient is not significant in 2000.

The effect of tourism and recreation earnings is not significant for 1990, but is significantly and positively related to income inequality for 2000. This result suggests that in manufacturing dependent communities, the earnings in tourism and recreation related industries have an effect on the increase in income inequality.

Race dualism and regional variables show a strongly positive relationship on income inequality for both 1990 and 2000. The result suggests that racial differences tied to income distribution play an important role in understanding income inequality in the U.S.

TABLE 5-11
UNSTANDARDIZED COEFFICIENTS OF RANDOM EFFECTS GLS REGRESSION OF INCOME INEQUALITY: NMDC, 1990

Independent Variable	Model 1	Model 2	Model 3	Model 4
Constant	149.253***	147.438***	138.918***	135.781***
	(6.062)	(5.947)	(5.492)	(5.319)
Median household income (log)	-24.618***	-23.529***	-22.468***	-20.165***
	(1.389)	(1.407)	(1.269)	(1.285)
Percent of labor force in manufacturing	-	-.096***	-	-.073***
		(0.013)		(0.012)
Percent females in the labor force	-	.012	-	-.098*
		(0.043)		(0.039)
Percent of labor force in tourism/recreation	-	-.309	-	-.079
		(0.263)		(0.239)
Percent of earnings in tourism/recreation	-	.019	-	.253
		(0.168)		(0.154)
Sector dualism (log)	-	-1.015**	-	-.335
		(0.321)		(0.299)
Race dualism (log)	-	-	3.446***	3.092***
			(0.295)	(0.296)
Northeast	-	-	.004	-1.184*
			(0.785)	(0.522)
Midwest	-	-	-.808	-1.566***
			(0.582)	(0.368)
West	-	-	.999	-.982
			(0.847)	(0.669)
R^2	.417	.533	.708	.756
Rho	.453	.464	.353	.111
Number of counties	584	560	584	560

Notes: Gini x 100, Numbers in parentheses are standard errors.
*p<.05 ** p<.01 ***p<.001

TABLE 5-12
UNSTANDARDIZED COEFFICIENTS OF RANDOM EFFECTS GLS REGRESSION OF INCOME INEQUALITY: NMDC, 2000

Independent Variable	Model 1	Model 2	Model 3	Model 4
Constant	174.805***	166.950***	159.899***	162.299***
	(5.818)	(6.698)	(5.399)	(6.160)
Median household income (log)	-29.382***	-28.448***	-26.193***	-25.995***
	(1.284)	(1.319)	(1.201)	(1.234)
Percent of labor force in manufacturing	-	-.059***	-	-.041**
		(0.013)		(0.012)
Percent females in the labor force	-	.119**	-	-.051
		(0.043)		(0.042)
Percent of labor force in tourism/recreation	-	.005	-	.072
		(0.046)		(0.042)
Percent of earnings in tourism/recreation	-	.061	-	.149*
		(0.075)		(0.066)
Sector dualism (log)	-	-.797**	-	-.685*
		(.299)		(0.273)
Race dualism (log)	-	-	2.857***	2.857***
			(0.269)	(0.285)
Northeast	-	-	-.129	-.625
			(0.548)	(0.473)
Midwest	-	-	-1.028*	-1.176**
			(0.403)	(0.343)
West	-	-	-.150	-.537
			(0.613)	(0.575)
R^2	.654	.672	.789	.812
Rho	.414	.331	.217	.147
Number of counties	585	559	585	559

Notes: Gini x 100, Numbers in parentheses are standard errors.
*p<.05 ** p<.01 ***p<.001

Income Inequality of Farming Dependent Communities

The regression results for farming dependent communities are shown Table 5-13 and Table 5-14. The coefficient of median household income of the community is significant and negative for both 1990 and 2000. This result is not different from the other two community groups. The effect of manufacturing employment on income

inequality is negative for both 1990 and 2000. Like the results of manufacturing dependent communities, the effect of the female labor force is not consistent. While the coefficient shows a negative relationship with income inequality for 1990, the coefficient is not significant in 2000. Tourism and recreation related variables, tourism and recreation earnings and employment in the tourism and recreation sector, have no significant relationship with income inequality for both 1990 and 2000.

The race dualism and regional variables have a significant and positive relationship with income inequality for both 1990 and 2000. However, the strength of the race dualism and regional variables weakened from 1990 to 2000. The result suggests that race related variables should be included in analyzing economic inequality in the U.S.

TABLE 5-13
UNSTANDARDIZED COEFFICIENTS OF RANDOM EFFECTS GLS REGRESSION OF INCOME INEQUALITY: NFDC, 1990

Independent Variable	Model 1	Model 2	Model 3	Model 4
Constant	148.781***	160.192***	134.317***	135.960***
	(9.581)	(9.650)	(9.797)	(9.451)
Median household income (log)	-24.552***	-24.331***	-20.957***	-18.258***
	(2.227)	(-2.185)	(2.262)	(2.164)
Percent of labor force in manufacturing	-	.015	-	-.066**
		(0.024)		(0.021)
Percent females in the labor force	-	-.303***	-	-.312***
		(.061)		(0.058)
Percent of labor force in tourism/recreation	-	.488	-	.315
		(0.358)		(0.345)
Percent of earnings in tourism/recreation	-	.360	-	.581
		(.386)		(0.359)
Sector dualism (log)	-	-.886*	-	-1.006*
		(0.427)		(0.407)
Race dualism (log)	-	-	1.808**	3.563***
			(0.599)	(0.620)
Midwest	-	-	-2.853***	-2.312***
			(0.462)	(0.469)
West	-	-	-1.075	-1.547**
			(0.578)	(0.559)
R^2	.269	.356	.456	.539
Rho	.119	.132	0	0
Number of counties	375	373	375	373

Notes: Gini x 100, Numbers in parentheses are standard errors.
*p<.05 ** p<.01 ***p<.001

TABLE 5-14
UNSTANDARDIZED COEFFICIENTS OF RANDOM EFFECTS GLS REGRESSION OF INCOME INEQUALITY: NFDC, 2000

Independent Variable	Model 1	Model 2	Model 3	Model 4
Constant	167.646***	169.463***	155.223***	155.969***
	(11.376)	(12.855)	(11.619)	(12.961)
Median household income (log)	-27.785***	-27.383***	-24.883***	-24.064***
	(2.539)	(2.655)	(2.585)	(2.714)
Percent of labor force in manufacturing	-	-.021	-	-.049
		(0.026)		(0.026)
Percent females in the labor force	-	-.058	-	-.076
		(0.074)		(0.074)
Percent of labor force in tourism/recreation	-	-.121 (0.098)	-	-.103 (0.098)
Percent of earnings in tourism/recreation	-	-.010	-	.009
		(0.294)		(0.287)
Sector dualism (log)	-	-.059	-	-.065
		(0.434)		(0.425)
Race dualism (log)	-	-	1.715*	2.104**
			(0.726)	(0.771)
Midwest	-	-	-2.114**	-1.974*
			(0.691)	(0.794)
West	-	-	-.974	-.850
			(0.761)	(0.887)
R^2	.287	.303	.432	.451
Rho	.162	.199	.082	.126
Number of counties	375	368	375	368

Notes: Gini x 100, Numbers in parentheses are standard errors.
*p<.05 ** p<.01 ***p<.001

CHAPTER VI

DISCUSSION AND CONCLUSIONS

This study focused on economic and environmental equity in tourism and recreation dependent communities in the U. S. In the economic equity section, research was conducted to do an empirical analysis of the income distribution in nonmetropolitan tourism and recreation dependent communities. In the environmental equity section, this study evaluated conceptual and theoretical understanding dealing with tourism and the environment and addresses the importance of environmental equity issues. This chapter briefly summarizes the findings of the analyses and discusses economic and environmental equity in the context of tourism and recreation development in terms of planning and policies. Implications of the findings and recommendations for future research are also addressed.

Economic Equity and Tourism and Recreation Development

A key objective of this research was to examine economic equity across different income groups and race in nonmetropolitan tourism and recreation dependent communities. By comparing economic equity between nonmetropolitan tourism and recreation dependent communities and other industry dependent nonmetropolitan communities, the differences of income inequality between those communities were explored. This study also assessed how tourism and recreation development contributes

to economic equity in nonmetropolitan tourism and recreation communities in the U. S. In particular, determinants of income inequality were mainly investigated.

Income distribution of nonmetropolitan tourism and recreation dependent communities is more unequal than that of nonmetropolitan manufacturing dependent communities in the U. S. (Hypothesis: H_1). In addition, tourism and recreation development contributes to increased income inequality while manufacturing related development is likely to reduce income inequality. Other studies have uncovered empirical evidence identifying inequities and distributional issues tied to tourism development (Smith 1986; Leatherman and Marcouiller 1996).

Income inequality in tourism and recreation dependent communities might be explained by two factors. First, characteristics of the tourism and recreation industry contribute to increased income inequality. Since income difference among tourism related jobs may be relatively large, this contributes to increase income inequality. In general, the service industry sector provides more unstable and low-skilled jobs than manufacturing. These characteristics of tourism related jobs also contribute to income inequality. The second income inequality factor in tourism and recreation dependent communities is the fact that tourism and recreation dependent communities generally show a high proportion of high-income groups. High income groups tend to move to tourism and recreation communities seeking natural amenities such as parks and lakes. (Stewart and Stynes 1994). They have usually higher income levels and wealth than local residents. Therefore, it is natural that this will contribute to a relatively high income inequality than what is found in manufacturing dependent communities.

Leatherman and Marcouiller (1999) found that low- and high-income households received their largest relative share of income from a tourism development strategy. Tourism businesses were owned by high-income proprietors who received the greatest share of returns to capital. Similarly, tourism and recreation businesses employed a relatively large number of lower skilled workers, the type of labor resources owned by low-income households who received most of their earned income from wages. Even though low-income households earn income from tourism and recreation businesses, the relative amount of income is small compared to other households. Therefore, there is a widening gap between the high and low ends of the income distribution in tourism and recreation dependent communities.

The results associated with economic development confirm that there is a negative relationship between economic development and income inequality supporting the Kuznets' inverted U-curve theory. This relationship is found in all models and communities. Like other research, this study shows that the increase of household income tends to decrease income inequality. This result implies that economic growth makes income inequality decrease. However, depending on the economic structure of the community, there will be different relationships between economic growth and economic equality (Nielsen and Alderson 1997).

The effects of deindustrialization on income inequality are significant and positive and suggest deindustrialization contributes to increase income inequality. The notion of economic restructuring (deindustrialization) contains a quantitative dimension, typified by the loss of manufacturing jobs and the growth of services, and a qualitative dimension,

suggested by the greater incidence of both low-wage, low-skill jobs and high-level professional jobs in service industries, a decline in wages and unionization rates in manufacturing jobs, and a feminization of the job supply (Sassen 1990). Service industries have been historically associated with relatively more inequality (Levernier, Patridge, and Rickman 1998). Nelson and Lorence (1988) found that service sector employment increases income inequality. The authors also maintained that the structure of inequality differs for men and women. High inequality among men is found in producer and business related services with high proportions of professional and managerial personnel. For women, inequality is related to retail trade and social services which require high proportions of unskilled, service related occupations. Since most tourism and recreation related jobs are unskilled and seasonal, they might contribute to increase income inequality. McLaughlin (2002a) also found that increases in income inequality were influenced by economic restructuring in nonmetropolitan communities.

The positive effect comes from the inequality of earnings in tourism and recreation employment (Hypothesis: H_2).The research also shows that the earnings in the tourism and recreation industry contribute to income inequality. Earnings from employment are closely related to the characteristics of labor resources. Educational attainment, level of skill, and experience are major determinants of earnings. In particular, education has been investigated as an important component for explaining income inequality. Jacobs (1985) and Nielsen and Alderson (1997) discovered that income equality is greater in populations with high proportions of either poorly educated or highly educated groups. A number of studies showed that the earnings of the college-educated group have

increased significantly during the 1980s - 1990s period, while those of high school graduates and dropouts have declined steadily (Gottschalk 1997; Murphy and Welch 1993).

Race dualism shows a positive relationship with income inequality (Hypothesis: H_4). Race dualism in this research represents the income difference between whites and blacks. This result suggests that the racial difference in income distribution plays an important role in increasing income inequality. The result also implies that the income inequality between whites and blacks is a potential problem that might lead to economic and social conflicts in society.

Since the study areas of this research are nonmetropolitan counties and the proportion of Hispanic population in the areas is so small, this research could not analyze whether racial difference in income distribution between whites and Hispanics exists. However, the remarkable growth of the Hispanic population in the U.S. metropolitan areas might affect racial differences in income distribution. Therefore, income difference between whites and Hispanics should be considered in subsequent work. Even though the Hispanic and black labor force participate in similar job categories of the tourism and recreation industry, it is meaningful to examine racial differences between whites and Hispanics. For the analysis, the structure of tourism related labor markets and the participation of Hispanic labor force would be important subjects to be investigated.

Another key factor in explaining income inequality is the regional variable. Historically, the southern region of the U.S. shows a high proportion of black population

and low-income groups. These characteristics are closely tied to economic inequality. The results of this study show that there is a positive relationship between the south region and income inequality irrespective of community type and suggest that the regional variable is still an essential component for understanding income inequality in the U.S.

In tourism and recreation dependent communities, Ski resorts, Coastal ocean resorts, and South Appalachian mountain resorts show relatively high income inequality. Income inequality of Northwoods lakes/second home areas and Northeast mountains/lakes/second home areas is relatively low (Hypothesis: H_5). In particular, the income inequality of Ski resorts and West mountains communities have considerably increased between 1990 and 2000. A recent study found that Ski resort communities have substantially higher earnings per job, per capita income, and median household income than other tourism and recreation communities (Reeder and Brown 2005). Ski resorts also have the highest levels of educational attainment, the largest number of doctors, and substantially higher housing costs. These economic and social indicators explain why Ski resort communities have high income inequality.

Even though it is not easy to assess all the reasons of income inequality differences due to data limitations, the primary cause of income inequality among tourism and recreation dependent communities is probably the difference in household income. Communities with high household incomes have high income inequality. This result implies that there is a huge income gap between high-income and low-income groups. In spite of the negative effect of household income on income inequality, the difference of

household income is a critical factor affecting income inequality. However, it is important to note that there are a variety of components affecting the difference in income distribution by recreation type. Socioeconomic and demographic characteristics of the communities might be attributed to different income inequality. Additionally, the industry structure, economic policies, and community development strategies could affect economic inequality of the communities. Attitude and perceptions of local residents to tourism and recreation development are also important factors. Therefore, it is necessary to consider both quantitative and qualitative aspects to explain and interpret the income inequality differences by recreational type.

The classification of tourism and recreation communities should be discussed for more rigorous analysis. The classification this study used was developed by ERS of USDA using various tourism and recreation related economic indicators. Since the classification method is relatively objective, the classification was widely used for examining the characteristics of counties. However, the classification has some limitations in terms of defining the tourism and recreation industry. In general, the tourism and recreation industry is comprised of various sub-industries such as accommodation, transportation, entertainment, and food services. Thus, for more accurate classification, economic indicators of all tourism and recreation related industries should be considered. However, the ERS' classification did not include the transportation sector in spite of its importance. The classification also did not consider the entertainment sector even though the demand of the sector is fast growing. Therefore, if more detailed tourism and recreation related data are available, the classification

should be revised to better classify tourism and recreation communities. In addition, it is necessary to point out that this study did not consider the change of recreational community type between 1990 and 2000 because of lack of data and information.

Environmental Equity and Sustainable Development

Regarding environmental equity issues, the environmental justice framework is needed for assessing the distribution of environmental consequences resulting from tourism and recreation development. Environmental justice stresses the equal distribution across social groups in the community. Incorporating the environmental justice framework into tourism and recreation development enables researchers/policy-makers to have a more holistic approach to examine the relationships between environmental equity and tourism and recreation development. Environmental justice is an important concept for understanding the distribution of environmental impacts across social groups. In addition, since the environmental justice framework focuses on both procedural and distributive justice, it provides a comprehensive perspective to policy-makers for assuring equitable distribution of environmental benefits and burdens.

In tourism and recreation, sustainable tourism development has a close relationship with environmental justice principles. The fundamental principle of sustainable development about equity is "the development that is fair and equitable and which provides opportunities for access to and use of resources for all members of all societies, both in present and future" (Sharpley 2000, p. 8). Sustainable development emphasizes both intra and inter-generational equity. The concept of sustainable tourism also suggests

considering methods of development, planning, and consumption that promote the enduring authenticity and quality of cultural and natural resources (Boyd 2000; Butler 1999; Mowforth and Munt 1998). Furthermore, sustainable tourism development strategies underline the importance of community-based tourism planning and more equitable share of the benefits accruing from tourism development (Inskeep 1991; Getz and Jamal 1994; Brohman 1996). Advocates have recommended a number of principles that ought to be followed for sustainable tourism development. These include preservation of ecological processes and the protection of biodiversity in the natural realm and in human terms, efficiency, equity, preservation of cultural integrity, holistic planning, balance, and integration (Timothy 1998; Hall and Lew 1998). Tourism sustainability points out the need for better environmental and economic balance of tourism development, requiring new integrative public-private approaches and policies in the future (Gunn and Var 2002).

Although tourism development is also considered to be an effective tool of achieving a more equitable economic and social condition in the community, equitable distribution of economic and environmental benefits through tourism development is not easy to achieve. Equity within/between social groups and inter-/intra generational equity should be taken into account for sustainable tourism and recreation development. The analytical framework for assessing environmental equity that this study suggested will be a good foundation for further development of environmental equity framework in the context with tourism and recreation development. In spite of the need of application of environmental justice principles to tourism and recreation development, there is a

challenge to conduct empirical analyses. In particular, selecting appropriate environmental components related to tourism and recreation development is very difficult. Since most environmental impacts of tourism and recreation development occur indirectly, it is hard to capture how much this type of developments affects the impacts.

Nevertheless, concern about distributional impacts encourages the re-examination of assumptions related to local economic development policy including tourism and recreation development and more careful consideration of the beneficiaries of development policies. By bringing equity issues to the policy arena, the community can make better choices about economic development.

Implications

As a result of economic restructuring and general increases in tourism and recreation demand, many nonmetropolitan communities have employed tourism as an important component of their overall economic development strategy. Tourism is often conceived as a viable economic development alternative for nonmetropolitan communities that have limited economic resources (Brown and Hall 2000). In other words, tourism and recreation are beneficial to the economic development of communities. However, the results in this study show that development policy based on aggregate growth overlooks the importance of distributional consequences from tourism and recreation. In the case of tourism and recreation dependent communities, in spite of

increasing household income, income inequality also increases. This implies that significant differences between low and high income groups exist.

On a policy level, there is a need to consider what community development policies are desirable to enhance economic and environmental equity. Most federal, state, and local governments have thought tourism is a powerful tool for community economic development and have tried to attract the industry. However, most tourism development areas are experiencing inequality issues among residents and stakeholders. While other industry dependent areas have the same problem, tourism and recreation dependent areas have more serious inequality problems. This suggests that there may be something about the characteristics of the tourism industry that contributes to an inequality change. High seasonality and unstable employment of tourism and recreation labor markets are indicated as major factors in increasing income inequality. The income level gap between large low-income jobs and small high-income jobs also contributes to income inequality comparing the income gap in other industries. For balanced development, it is necessary to consider equity issues in community planning and development. The main question is how to ensure tourism development that is both socially equitable and environmentally sound within a context of limited resources. By adopting sustainable development principles, more sustainable and equitable tourism development planning could be established.

Butler and Clark (cited in Page and Getz 1997) argued that rural tourism may not be the magic solution because of its income leakages, volatility, low pay, imported labor and conservative investors. They pointed out that the least favorite circumstance to

promote rural tourism is when the economy is weak since tourism will further create highly unbalanced income and employment distributions. For example, Native American reservations have some of the highest poverty and unemployment rates in the United States and many reservations are turning to the operation of casinos as a strategy for economic development (Baron, 1998). Due to their primarily rural locations, however, Native American communities have been locked into a pattern of spatial disequilibrium that characterizes uneven development. In the end, there may be a situation where there is an economic polarization between tribes with successful casinos and those without.

From an economic equity perspective, the main issue is not economic growth but equitable distribution of consequences from the economic growth. The best scenario is that tourism and recreation dependent communities enjoy high income and low income inequality at the same time. However, results of this study show that there is a significant income inequality in tourism and recreation dependent communities in spite of growth in household income. This result suggests that the consequences of tourism development are disproportionately distributed across local residents. Unequal distribution could be a crucial factor in social and economic conflicts among different groups in a community. Thus, emphasizing equality between groups is essential to build a community in a sustainable way.

The important lesson of tourism and recreation development is that although tourism can bring economic benefits, it can also contribute to environmental costs. Holden (2000) pointed out the cause of negative environmental impacts as “many of the negative effects of tourism have resulted from a laissez-faire approach to development,

determined by free market forces, in which the full social costs of tourism and recreation development have failed to be reflected (p. 203).” It is essential to consider carefully which development policy and planning for tourism and recreation should be implemented in the development process. In other words, a more sustainable approach to tourism and recreation development is needed. To provide a sustainable environmental basis for tourism planning and development, a reaffirmation of moral values is required. Moral values include “respect for individuals in the context of community and more equitable distribution of both political and economic power (Stein and Harper 1996, p. 97).” Equitable distribution of environmental benefits across social groups should be considered in the whole process of tourism and recreation development.

Incorporating an environmental justice concept into tourism and recreation development is significant. Some literature indicated that there are some conflicts among stakeholders over the use of natural resources for tourism and recreation (Nepal 2000; Akama 1999; Holden 2000). Local people are denied access to resources that they have traditionally used to meet their needs. As a result, "tourism becomes viewed by many local people not as a constructive force for development but as a propagator of inequality (Holden 2000; p 205)." Therefore, it is necessary that the process of tourism and recreation planning and development integrates community participation for improving environmental equity across stakeholders.

Recommendations for Future Research

More equity or equality research is needed for investigating the relationships between tourism and recreation development and economic and environmental equity. Even though tourism driven development can often bring economic growth to a community, it does not bring equality across various groups in the community. The following areas should be addressed for future economic equity research in the context of tourism and recreation development.

First, lack of tourism development related data restricts the scope and level of equity study. Using aggregate data could weaken the results of this study. In general, exploring the distribution of economic impacts across various groups and communities requires large samples of disaggregate data that link multiple attributes across many localities (Meethan, 2001). Even though aggregate data may be sufficient to assess overall changes in distribution of economic impacts, more detailed statistics are necessary for equity analyses of how such effects are distributed. It is also not easy to define the scope of the tourism and recreation industry because of ambiguous and flexible definitions of the industry. Detailed tourism and recreation data should enable researchers to conduct more accurate analysis and to get more reliable results. In addition, more detailed data might allow researchers to describe explicitly the difference in income inequality across different groups.

Second, examining causes of inequality is another crucial factor in equality study. Since the causes of equality are various and complicated, there is a need to examine the relationship between tourism and recreation development and inequality. This study

partially examined the relationships, but still more detailed analyses are needed in terms of earnings difference, educational attainment, and regional characteristics. In particular, more analyses of the labor market in tourism related industries might provide meaningful information for understanding the relationship. Employment structure and characteristics of the labor market should be explored. It is also necessary to examine how the characteristics of tourism related industries affect equality for providing information to policy makers.

Third, on a macro level, economic policies or regulations that affect equity in a community should be addressed. Analyzing policies or regulations related to equity is the prevalent method to examine the causes of inequality. Because different communities face different policies or regulations, the causes of inequality could be different. Therefore, there is a need for future research into community-oriented and integrative tourism planning. Incorporating wider stakeholder involvement in the planning process and enhancing fair distributions of economic and environmental consequences should be important factors to be investigated.

Fourth, regional differences in income distribution should be addressed. For example, since this study focuses on economic equality in a developed country, the results in the study might be quite different from those of developing and underdeveloped countries. Many tourism development studies have reported that there are significant inequality problems associated with tourism development especially in the Third World (Brohman 1996; de Kadt 1992). In general, it is well known that economic equality is more unequal in underdeveloped and developing countries than

developed countries. Analyzing the effects on tourism development on economic equality in developing countries would provide valuable information for comparing the effects of development stage on equality in different economic situations. Consequently, the income distribution and changes must be considered in the context of the economic, social, and demographic structure of society.

Finally, it is necessary to investigate how to identify and address the relationship between tourism related activity and the economic structure in nonmetropolitan counties. It is difficult to characterize an economy's dependence on tourism and recreation and to figure out how the tourism related industry affects the local economy. In addition, it is necessary to develop a better theoretical basis for the interface between tourism and community development and to develop a more consistent empirical approach to analyzing tourism impacts. Findings of this analysis suggest that the income distribution is clearly tied to tourism related factors.

For environmental equity studies, in spite of the importance of the environmental equity issue in tourism and recreation development, most tourism and recreation development research has disregarded equity issue. The environmental justice framework should be included as one of major subjects in tourism and recreation development research. Understanding environmental justice and applying an environmental justice framework to tourism and recreation settings are really important directions to widen the scope of tourism and recreation research.

Examining environmental impacts of tourism and recreation development has been widely undertaken and has contributed to indicate the importance of environmental

aspects of tourism development. As a result, environmental attitude, environmental conservation of natural resources, and environmental ethics in tourism and recreation related business were addressed as main subjects in tourism and recreation studies. However, it is necessary to shift the perspective of research from environmental impact assessment to equity of environmental impacts of tourism and recreation development. Environmental equity across social groups, communities, and generations is becoming a substantial issue in modern society. Therefore, it is necessary to study conceptualizing an environmental justice framework associated with tourism and recreation development, develop a theoretical and analytical framework, and conduct empirical analysis of what emerges from the theoretical development.

REFERENCES

Akama, J. S. (1999). “Marginalization of the Maasai in Kenya.” *Annals of Tourism Research* 26(3): 716-718.

Albrecht, S. L. (1995). "Equity and Justice in International Environmental Decision Making: A Proposed Research Agenda." *Society and Natural Resources* 8(1): 67-72.

Alderson, A. S. and F. Nielsen. (1999). "Inequality, Development, & Dependence: A Reconsideration." *American Sociological Review* 64: 606-31.

Anand, R. (2004). *International Environmental Justice: A North-South Dimension*. Hampshire, England: Ashgate.

Anderton, D. (1997). "Methodological Issues in the Spatiotemporal Analysis of Environmental Equity." *Social Science Quarterly* 77: 508-15.

Anderton, D., A. Anderson, J. Oakes, and M. Fraser. (1994). "Environmental Equity: The Demographics of Dumping." *Demography* 31: 229-48.

Andronikou, A. (1987). "Cyprus: Management of the Tourist Sector." *Tourism Management* 7(2): 127-29.

Archer, B. H. (1976). *Demand Forecasting in Tourism*. *Occasional Papers in Economics* 9. Bangor: University of Wales Press.

Archer, B. H. (1977a). *Tourism Multipliers*. *Occasional Papers in Economics* 11. Bangor: University of Wales Press.

Archer, B. H. (1977b). *Tourism in the Bahamas and Bermuda: Two Case Studies*. *Occasional Papers in Economics* 10. Bangor: University of Wales Press.

Archer, B. H. (1982). "The Value of Multipliers and Their Policy Implications." *Tourism Management* 3: 236-41.

Archer, B. H. (1984). "Economic Impact: Misleading Multipliers." *Annals of Tourism Research* 11: 517-18.

Archer, B. (1989). “Tourism and Island Economies: Impact Analyses”, in *Progress in Tourism, Recreation and Hospitality Management*, vol 1, edited by C. P. Cooper, London: Belhaven.

Archer, B. (1995). “Importance of Tourism for the Economy of Bermuda”, *Annals of Tourism Research*, 22(4) 918-930.

Archer, B. and J. E. Fletcher (1996). “The Economic Impact of Tourism in the Seychelles.” *Annals of Tourism Research* 23: 32-47.

Asch, P. and J. J. Seneca. (1978). "Some Evidence on the Distribution of Air Quality." *Land Economics* 54(3): 278-97.

Atkinson, A. B. and F. Bourgignon. (2000). "Income Distribution and Economics." In *Handbook of Income Distribution*, edited by A. B. Atkinson and F. Bourgignon. Amsterdam, The Netherlands: Elsevier Science, pp. 1-58.

Baltagi, B. H. (2001). *Econometric Analysis of Panel Data*. 2 ed. Chichester: John Wiley & Sons, Ltd.

Barkham, J. P. (1995). "Environmnetal Needs and Social Justice." *Biodiversity and Conservation* 4(8): 857-68.

Baron, E. (1998). "Casino Gambling and the Polarization of American Indian Reservations." In *Tourism and Gaming on American Indian Lands*, edited by A. Lew and G. Van Otten. New York: Cognizant, pp. 63-171.

Barro, R. (2000). "Inequality and Growth in a Panel of Countries." *Journal of Economic Growth* 5: 5-32.

Bartik, T. J. (1991). "Effects of Economic Development Policy on Individual Earnings." In *Who Benefits from State and Local Economic Development Policies?* Kalamazoo, Michigan: W. E. Upjohn Institute for Employment Research, pp. 157-186.

Bartik, T. J. (1996). "Eight Issues for Policy Toward Economic Development Incentives." *The Region* 10(2): 43-46.

Beauregard, R. (1998). "Tourism and Economic Development Policy in US Urban Areas." In *The Economic Geography of the Tourist Industry: A Supply Side Analysis*, edited by D. Ioannides and K.G. Debbage. London: Routledge, pp.123-138.

Becheri, E. (1991). "Rimini and Co-the End of a Legend: Dealing with the Algae Effect." *Tourism Management* 12(3): 229-35.

Been, V. (1997). "Coming to the Nuisance or Going to the Barrios? A Longitudianl Analysis of Environmental Justice Claims." *Ecology Law Quarterly* 24(1): 1-56.

Belouse, R. S. (1989). *The Contingent Economy*. Washington, DC: National Planning Association.

Bernard, A. B. and J. B. Jensen. (1998). "Understanding Increasing and Decreasing Wage Inequality." Working Paper 6571, National Bureau of Economic Research, Cambridge, MA.

Bishop, J. A. and J. P. Formby. (1994). "A Dominance Evaluation of Distributions of Income and the Benefits of Economic Growth." In *The Changing Distribution of Income in an Open U.S. Economy*, edited by J. H. Bergstrand, T. F. Cosimano, J. W. Houck and R. G. Sheehan. Amsterdam, The Netherlands: Elsevier Science, pp. 65-103.

Blackburn, M. L. (1990). "What Can Explain the Increase in Earnings Inequality among Males?" *Industrial Relations* 29: 441-456.

Blau, F. D., and L. M. Kahn. (1994). "Rising Wage Inequality and the U.S. Gender Gap." *American Economic Review* 84: 23-28.

Bluestone, B. (1990). "The Great U-Turn Revisited: Econoic Restructuring, Jobs, and the Redistribution of Earnings." In *Jobs, Earnings, and Employment Growth Policies in the United States*, edited by J. D. Kasarda. Boston, MA: Kluwer, pp. 7-37.

Bluestone, B. and B. Harrison (1982). *The Deindustrialization of America: Plant Closings, Community Abandonment, and the Dismantling of Basic Industries*. New York: Basic Books.

Boissevain, J. (1996). *Coping with Tourists: European Reactions to Mass Tourism*. Oxford: Berghahn Books.

Bojer, H. (2003). *Distributional Justice: Theory and Measurement*. London: Routledge.

Boonzaier, E. (1994). "Negotiating the Development of Tourism in Richtersveld, South Africa" In *People and Tourism in Fragile Environments*, M.F. Price, ed. Chichester, New York: Wiley.

Bound, J. and G. S. Johnson. (1992). "Charges in Structure of Wages in the 1980s: An Evaluation of Alternative Explanations." *American Economic Review* 82: 371-92.

Bowen, W., M. Sailing, K. Haynes, and E. Cyran. (1995). "Toward Environmental Justice: Spatial Equity in Ohio and Cleveland." *Annals of the Association of American Geographers* 85 (1995): 641-63.

Boyd, S. (2000). "Tourism, National Parks, and Sustainability." In *Tourism and National Parks: Issues and Implications*, edited by R. W. Butler and S. W. Boyd. Chichester, New York: John Wiley and Sons.

Britton, S. G. (1982). "The Political Economy of Tourism in the Third World." *Annals of Tourism Research* 9(3): 331-358.

Brohman, J. (1996). "New Directions in Tourism for Third World Development." *Annals of Tourism Research* 23(1): 48-70.

Brooks, N. and R. Sethi (1997). "The Distribution of Pollution: Community Characteristics and Exposure to Air Toxics." *Journal of Environmental Economics and Management* 32(2): 233-50.

Brown, F. , and D. Hall, eds. (2000). *Tourism in Peripheral Areas,*. Buffalo, NY: Channel View Publications.

Bryant, B. and P. Mohai. (1992). *Race and the Incidence of Environmental Hazards: A Time for Discourse*. Boulder, CO: Westview Press.

Bryner, G. C. (2002). "Assessing Claims of Environmental Justice: Conceptual Frameworks." In *Justice and Natural Resources: Concepts, Strategies, and Applications*, edited by K. M. Mutz, G. C. Bryner and D. S. Kenney. Washington, DC: Island Press, pp. 31-56.

Bullard, R. (1983). "Solid Waste Sites and the Black Houston Community." *Sociological Inquiry* 53: 273-88.

Bullard, R. (1994). *Dumping in Dixie: Race, Class, and Environmental Quality*. Boulder, CO: Westview Press.

Bullard, R. D. and G. S. Johnson. (1997). "Just Transportation." In *Just Transportation: Dismantling Race and Class Barriers to Mobility*, edited by R. D. Bullard and G.S. Johnson. Gabriola Island, BC: New Society Publishers, pp. 7-21.

Bullard, R. D. and B. H. Wright. (1992). "The Quest for Environmentsl Equity: Mobilizing the African American Community for Social Change." In *American Environmentalism: The U.S. Environmental Movement 1970-1990*, edited by R and Mertig Dunlap, A. New York: Taylor and Francis, pp. 39-49.

Bureau of Economic Analysis (2004). *Regional Economic Information System*, 1990-2000.

Burns, P. and A. Holden. (1995). *Tourism: A New Prospective*. Hemel Hempstead, UK: Prentice Hall International.

Burr, J. A., M. A. Fossett, and O. R. Galle. (1991). "Racial Occupational Inequality in Southern Metropolitan Areas 1940-1980: Revisiting the Visibility-Discrimination Hypothesis." *Social Forces* 27: 519-64.

Burtless, G. (1993). "The Contribution of Employment and Hours Changes to Family Income Inequality." *American Economic Review* 83, 131-135.

Butler, R.W. (1999). "Problems and Issues of Integrating Tourism Development." In *Contemporary Issues in Tourism Development*, edited by D. Pearce and R.W. Butler. London: Routledge, pp. 65-80.

Cancian, M., S. Danziger, and P. Gottschalk. (1993). "Working Wives and Family Income Inequality among Married Couples." In *Uneven Tides: Rising Inequality in America*, edited by Sheldon Danziger and Peter Gottschalk. New York: Russell Sage Foundation, pp. 195-221.

Card, D. (1997). "Immigrant Inflows, Native Outflows and the Local Labor Market Impacts of Higher Immigration." Working Paper 5927, Cambridge, MA: National Bureau of Economic Research.

Champernowne, D. G. and F. A. Cowell (1998). *Economic Inequality and Income Distribution*. New York: Cambridge University Press.

Chevan, A. and R. Stokes (2000). "Growth in Family Income Inequality, 1970-1990: Industrial Restructuring and Demograhic Change." *Demography* 37: 365-380.

Clarke, J. (1997). "A Framework of Approaches to Sustainable Tourism." *Journal of Sustainable Tourism* 5(3): 224-33.

Cloutier, N. R. (1997). "Metropolitan Income Inequality During the 1980s: The Impact of Urban Development, Industrial Mix, and Family Structure." *Journal of Regional Science* 37: 459-478.

Cooper, M. and J. Pigram. (1984). "Tourism and the Australian Economy." *Tourism Management* 5(1): 2-12.

Costrell, R. M. (1988). *The Effects of Industry Employment Shifts on Wage Growth, 1947-1987*. Washington, DC: U.S. Congress, Joint Economic Commission.

Cronin, L. (1990). "A Strategy for Tourism and Sustainable Developments." *World Leisure and Recreation* 32(3): 12-18.

Cutter, S. (1995). "Race, Class, and Environmental Justice." *Progress in Human Geography* 19(1): 111-22.

Daniels, G. and S. R. Friedman. (1999). "Spatial Inequality and the Distribution of Industrial Toxic Release: Evidence from the 1990 TRI." *Social Science Quarterly* 80(2): 244-62.

Danziger, S. and P. Gottschalk. (1995). *America Unequal*. Cambridge, MA: Harvard University Press.

Darity, W., J. Dietrich, and D. K. Guilkey. (1997). "Racial and Ethnic Inequality in the United States: A Secular Perspective." *The American Economic Review* 87: 301-305.

de Kadt, E. (1979). *Tourism: Passport to Development?* Oxford: Oxford University Press.

Dogan, H. Z. (1989). "Forms of Adjustment: Sociocultural Impacts of Tourism." *Annals of Tourism Research* 16: 216-236.

Dorfman, N. S. and A. Snow. (1975). "Who Will Pay for the Pollution Control? The Distribution by Income of the Burden of the National Environmental Protection Program." *National Tax Journal* 28, March : 101-15.

Downey, L. (1998). "Environmental Injustice: Is Race or Income a Better Predictor?" *Social Science Quarterly* 79(4): 766-78.

Draper, D. (1997). "Touristic Development and Water Sustainability in Banff and Canmore, Alberta, Canada." *Journal of Sustainable Tourism* 5(3): 183-212.

Easterly, W. (2001). "The Middle Class Consensus and Economic Development." *Journal of Economic Growth* 6: 317-35.

Economic Research Service (ERS). (2004).*2004 County Typology* United States Department of Agriculture. Available from http://www.ers.usda.gov/Briefing/Rurality/Typology/Methods/.

Edington, W. and M. Redman (1991). Economic and Tourism. *Annals of Tourism Research* 18: 41-56.

English, D. B. K., D. W. Marcouiller, and H. K. Cordell (2000). "Tourism Dependence in Rural America: Estimates and Effects." *Society and Natural Resources* 13: 185-202.

Farrell, B. H. and R. W. McLellan. (1987). "Tourism and Physical Environment Research." *Annals of Tourism Research* 14(1): 1-16.

Farrell, B. H., and D. Runyan. (1991). "Ecology and Tourism." *Annals of Tourism Research* 18: 26-40.

Fletcher, J. E. (1989). "Input-Output Analysis and Tourism Impact Studies." *Annals of Tourism Research* 16: 514-29.

Floyd, M. and C. Johnson (2002). "Coming to Terms with Environmental Justice in Outdoor Recreation: A Conceptual Discussion with Research Implications." *Leisure Sciences* 24, 59-77.

Forbes, K. (2000). "A Reassessment of the Relationship between Inequality and Growth." *The American Economic Review* 90: 869-87.

Foreman, C. H. (1998). *The Promise and Peril of Environmental Justice*. Washington, DC: Brookings Institution Press.

Fossett, M. A. (1988). "Ecological Analyses of Racial Economic Differentials: A Cautionary Note." *Sociological Method and Research* 16: 454-491.

Fricker, R. D. and N. W. Hengartner. (2001) "Environmental Equity and the Distribution of Toxic Release Inventory and Other Environmentally Undesirable Sites in Metropolitan NYC." *Environmental and Ecological Statistics* 8: 33-52.

Gajraj, A. M. (1981). "Threats to the Terrestrial Resources of the Caribbean." *Ambio* 10(6): 307-11.

Garrod, B. (2003). "Local Participation in the Planning and Management of Ecotourism: A Revised Model Approach." *Journal of Ecotourism* 2(1): 43-53.

German Federal Agency for Nature Conservation (GFANC) (1997). *Biodiversity and Tourism: Conflicts on the World's Seacoasts and Strategies for Their Solution*. London: Springer, 1997.

Getz, D. and T. Jamal. (1994). "The Environment-Community Symbiosis: A Case for Collaborative Tourism Planning." *Journal of Sustainable Tourism* 2(3): 152-73.

Gianessi, L. P., H. M. Peskin, and E. Wolff. (1977)."The Distributional Implications of National Air Pollution Damage Estimates." In *The Distribution of Economic*

Well-Being, edited by F. Thomas Juster. New York: National Bureau of Economic Research.

Gianessi, L. P., H. M. Peskin, and E. Wolff. (1979). "The Distributional Effect of Uniform Air Pollution Policy in the U.S." *Quarterly Journal of Economics* 93: 281-301.

Gianessi, L. and H. M. Peskin (1980). "The Distribution of the Costs of Federal Water Pollution Control Policy" *Land Economics* 56(1): 73-84.

Goldman, B. A. (1993). "Not Just Prosperity: Achieving Sustainability with Environmental Justice." 49. Washington, DC: Natioanl Wildlife Federation, Corporate Consumer Council.

Gordon, I. and B. Goodall. (1992). "Resort Cycles and Development Processes." *Built Environment* 18(1): 41-56.

Gottschalk, P. (1997). "Inequality Income Growth, and Mobility: The Basic Facts." *Journal of Economic Perspectives* 11: 21-40.

Gould, J. (1986). *Quality of Life in American Neighborhoods*. Boulder, CO: Westview Press.

Gössling, S. (2001). "The Consequences of Tourism for Sustainable Water Use on a Tropical Island: Zanzibar, Tanzania." *Journal of Environmental Management* 61: 179-91.

Green, H. and C. Hunter. (1992). "The Environmental Impact Assessment of Tourism Development." In *Perspectives on Tourism Policy*, edited by P. Johnson and B. Thomas. London: Mansell.

Greenberg, M. R. (1993). "Proving Environmental Inequity in the Siting of Locally Unwanted Land Uses." *Risk: Issues in Health and Safety* 4(3): 235-52.

Greene, W. H. (2000). *Econometric Analysis*. 4 ed. Upper Saddle River, NJ: Prentice-Hall, Inc.

Grubb, W. N. and R. H. Wilson. (1989). “Sources of Increasing Inequality in Wages and Salaries, 1960-1980.” *Monthly Labor Review* 112: 3-13.

Gunn, C. A. and T. Var. (2002). *Tourism Planning: Basics, Concepts, Cases*. New York: Routledge.

Hall, C., and A. Lew, eds. (1998). *Sustainable Tourism: A Geographical Perspective*. Harlow, England: Addison Wesley Longman.

Harrison, B. and B. Bluestone. (1988). *The Great U-Turn*. New York: Basic Books.

Harrison, D. (1975). *Who Pays for Clean Air: The Cost and Benefit Distribution of Automobile Emission Standards*. Cambridge, MA: Ballinger Publishers.

Harrison, D. and D. L. Rubenfield. (1978). "The Distribution of Benefits from Improvements in Urban Air Quality." *Journal of Environmental Economics and Management* 5: 313-32.

Harvey, D. (1996). *Justice, Nature and the Geography of Difference*. Oxford: Blackwell Publishers.

Heng, T. M. and L. Low (1990). "Economic Impact of Tourism in Singapore." *Annals of Tourism Research* 17: 246-69.

Hill, L. E. and J. E. Jonish. (1993). "An Inquiry into the Relationship between Economic Freedom and Economic Justice." *International Journal of Social Economics* 20(8): 49-55.

Hird, J. A. (1993). "Environmental Policy and Equity: The Case of Superfund." *Journal of Policy Analysis and Management* 12(2): 323-43.

Holden, A. (2000). *Environment and Tourism*. London: Routledge.

Holifield, R. (2001). "Defining Environmental Justice and Environmental Racism." *Urban Geography* 22(1): 78-90.

Hudman, L. E. (1978). "Tourist Impacts: The Need for Regional Planning." *Annals of Tourism Research* 5: 112-25.

Hunter, C. (1995). "On the Need to Re-Conceptualise Sustainable Tourism Development." *Journal of Sustainable Tourism* 3(3): 155-65.

Hunter, C. and H. Green. (1995). *Tourism and the Environment: A Sustainable Relationship?* London: Routledge.

Huse, M., T. Gustavsen, and S. Almedal (1998) "Tourism Impact Comparisons among Norwegian Towns." *Annals of Tourism Research* 25 (3): 721-38.

Inskeep, E. (1991). *Tourism Planning: An Integrated and Sustainable Tourism Development Approach*. New York: Van Nostrand Reinhold.

International Labor Office. (2001). *Human Resources Development, Employment and Globalization in the Hotel, Catering, and Tourism Sector*. Geneva.

Jacobs, D. (1985). "Unequal Organizations or Unequal Attainment? An Empirical Comparison of Sectoral and Individualistic Explanations for Aggregate Inequality." *American Sociological Review* 50: 166-80.

Jenner, P. and C. Smith. (1992). *The Tourism Industry and the Environment*. London: The Economist Intelligence Unit.

Johnson and Beale (2002). "Nonmetro Recreation Counties: Their Identification and Rapid Growth." *Rural America* 17:12-19.

Keefe, J. (1995). "Water Fights." *Tourism in Focus* 17: 8-9.

Khisty, C. J. (1996). Operationalizing Concepts of Equity for Public Project Investments, *Transportation Research Board* 1599, TRB, National Research Council, Washington D.C.

Kirkby, S. J. (1996). "Recreation and the Quality of Spanish Coastal Waters." In *Tourism in Spain: Critical Issues*, edited by M. Barke, J. Towner and M.T. Newton, Wallingford: CAB International, pp. 190-211.

Korca, P. (1996). "Resident Attitudes Toward Tourism Impacts." *Annals of Tourism Research* 23: 695-697.

Kousis, M. (2000). "Tourism and the Environment: A Social Movements Perspective." *Annals of Tourism Research* 27(2): 468-89.

Krieger (1970). *The Poverty of Policy for the Environment: A Working Paper*, Monticello III, Council of Planning Librarians.

Kreig, E. J. (1998). "The Two Faces of Toxic Waste Trends in the Spread of Environmental Hazards." *Sociological Forum* 13(1): 3-23.

Kuznets, S. (1955). "Economic Growth and Income Inequality." *American Economic Review* 45: 1-28.

Lankford, S. V. and D. R. Howard. (1994). Developing a Tourism Impact Attitude Scale. *Annals of Tourism Research* 21: 121-139.

Lawrence, R. Z. (1984). "Sectoral Shifts and the Size of the Middle Class." *Brookings Review* 3.

Leatherman, J. C. and D. W. Marcouiller. (1996). "Income Distribution Characteristics of Rural Economic Sectors: Implications for Local Development Policy." *Growth and Change* 27: 434-59.

Leatherman, J. C. and D. W. Marcouiller. (1999). "Moving Beyond the Modeling of Economic Growth: A Study of How Income Is Distributed to Rural Households." *Economic Development Quarterly* 13(1): 38-45.

Lecaillon, J. , F. Paukert, C. Morrisson, and D. Germidis. (1984). *Income Distribution and Economic Development*. Geneva: International Labor Office.

Levernier, W., M. D. Patridge, and D. S. Rickman. (1998). "Differences in Metropolitan and Nonmetropolitan U.S. Family Income Inequality." *Journal of Urban Economics* 44: 272-90.

Levy, F. and R. J. Murnane (1992). "U.S. Earnings Levels and Earnings Inequality." *Journal of Economic Literature* 30: 1333-81.

Lindberg, K. (1991). *Policies for Maximising Nature Tourism's Ecological and Economic Benefits*. Washington, DC: World Resources Institute.

Lindberg, K. and R. L. Johnson. (1997). "The Economic Values of Tourism's Social Impacts." *Annals of Tourism Research* 24 (1): 90-116.

Liu, F. (2001). *Environmental Justice Analysis: Theories, Methods, and Practice*. New York: Lewis Publishers.

Lobao, L. M., J. Rulli, and L. A. Brown. (1999). "Macro-level Theory and Local-level Inequality: Industrial Structure, Institutional Arrangements, and the Political Economy of Redistribution, 1970 to 1990." *Annals of the Association of American Geographers* 85: 571-601.

Lorence, J., and J. Nelson. (1993). "Industrial Restructuring and Metropolitan Earnings Inequality, 1970-1980." *Research in Social Stratification and Mobility* 12: 145-84.

Macunovich, D. J. (2000). "Why the Baby-Bust Cohorts Haven't Boomed Yet: A Re-Examination of Cohort Effects on Wage Inequality in the United States." In *Back to Shared Prosperity: The Growing Inequality of Wealth and Income in America*, edited by R. Marshall. Armonk, NY: Sharpe, pp. 157-170.

Malecki, E. (1997). *Technology and Economic Development*. 2nd ed. Harlow, England: Longman.

Marcouiller, D. W., K. K. Kim, and S. C. Deller. (2004). "Natural Amenities, Tourism and Income Distribution." *Annals of Tourism Research* 31(4): 1031-50.

Mason, P. (2003). *Tourism Impacts, Planning and Management*. Burlington, MA: Butterworth-Heinemann.

McCool, S. and G. Stankey (2001). Managing Access to Wildlands for Recreation in the USA: Background and Issues Relevant to Sustaining Tourism. *Journal of Sustainable Tourism* 9(5), 389-399.

McLaughlin, D. K. (2002a)."Changing Income Inequality in Nonmetropolitan Counties." *Rural Sociology* 67, no. 4: 512-33.

McLaughlin, D. K. (2002b). "Income Inequality in America." *Rural America* 17(2): 14-20.

McLaughlin, D.K., Handcock, and Kodamanchaly (2001). *Changing Household Income Inequality Across U. S. Counties*, 1980 to 1990. Working paper 01-12, Population Research Institute, The Pennsylvania University.

Meethan, K. (2001). "Tourism Development and the Political Economy." In *Tourism in Global Society*, 214. New York: Palgrave.

Merrett, C. D. (2004). "Social Justice: What Is It? Why Teach It?" *Journal of Geography*, 103: 93-101.

Mieczkowski, Z. (1995). *Environmental Issues of Tourism and Recreation*, Lanham, MD. University Press of America, Inc.

Mohai, P. and B. Bryant. (1992). "Environmental Racism: Reviewing the Evidence." In *Race and the Incidence of Environmental Hazards*, edited by Bunyan Bryant and Paul Mohai. Boulder, CO: Westview Press, pp. 163-76.

Monbiot, G. (1995). " Brazil: Land Ownership and the Flight to Amazonia." In *The Struggle for Land and the Fate of the Forests*, edited by M. Colchester and L. Lohmann. Penang, Malaysia: World Rainforest Movement - The Ecologist - Zed Books, pp. 139-178.

Morris, M. and B. Western (1999). "Inequality in Earnings at the Close of the Twentieth Century." *Annual Review of Sociology 25*: 623-657.

Mowforth, M. and I. Munt. (1998). *Tourism and Sustainability: New Tourism in the Third World*. London: Routledge.

Murphy, K. and F. Welch. (1993). "Industrial Change and the Rising Importance of Skill." In *Uneven Tides: Rising Inequality in America*, edited by S. Danziger and P. Gottschalk, New York: Russell Sage Foundation, pp. 101-32

Nelson, J. I. and J. Lorence. (1988). "Metropolitan Earnings Inequality and Service Sector Employment." *Social Forces* 67(2): 492-511.

Nelson, J. G., R.W. Butler, and G. Wall, eds. (1993). *Tourism and Sustainable Development: Monitoring, Planning, Managing.* Waterloo, Ontario: University of Waterloo.

Nepal, S. K. (1997). *Tourism Induced Environmental Changes in the Everest Region: Some Recent Evidence*. Bern, Switzerland: University of Bern, Center for Development and Environment.

Nepal, S. K. (2000). "Tourism in Protected Areas: The Nepalese Himalaya." *Annals of Tourism Research* 27(3): 661-81.

Newton, D. E. (1996). *Environmental Justice: A Reference Handbook*, Santa Barbara, CA. ABC-CLIO, Inc.

Nicholson-Lord, D. (1993). "Mass Tourism Is Blamed for Paradise Lost in Goa." *The Independent*, January 27, 10-11.

Nielsen, F. and A. S. Alderson (1995). "Income Inequality, Development, and Dualsim: Results from An Unbalanced Cross-National Panel." *American Sociological Review* 60: 674-701.

Nielsen, F. and A. S. Alderson (1997). "The Kuznets Curve and the Great U-Turn: Income Inequality in U.S. Counties, 1970 to 1990." *American Sociological Review* 62: 12-33.

Nielsen, F., and A. S. Alderson. (2001). "Trends in Income Inequality in the United States." In *Sourcebook of Labor Markets: Evolving Structures and Processes*, edited by I. Berg and A. L. Kalleberg. New York: Kluwer Academic/Plenum Publishers.

Oakes, J. M., D. L. Anderton, and A. B. Anderson. (1996). "A Longitudinal Analysis of Environmental Equity in Communities with Hazardous Waste Facilities." *Social Science Research* 25 (1996): 125-48.

OECD. (1980). *The Impact of Tourism on the Environment.* Paris: Organization for Economic Cooperation and Development, 1980.

Oppermann, M. (1992). "International Tourism and Regional Development in Malaysia." *Tijdschruft voor Economische en Sociale Geografie* 83(3): 226-33.

Osterman, P. (1999). *Securing Prosperity: The American Labor Market: How It Has Changed and What to Do About It*. Princeton: Princeton University Press.

Page, S. and D. Getz. (1997). "The Business of Rural Tourism." In *The Business of Rural Tourism*, edited by S. Page and D. Getz. London: International Thomson Business Press, pp. 3-37.

Panizza, U. (2002). "Income Inequality and Economic Growth: Evidence from American Data." *Journal of Economic Growth* 7: 25-41.

Pareto, V. (1897). *Cours D'economie Politique*. Geneve: Librairie Droz.

Pearce, D. W. (1988). "Economics, Equity, and Sustainable Development." *Futures*: 598-605.

Pearce. D. (1989). *Tourist Development*. 2nd ed. New York: Longman.

Pearce, D. (1992). *Tourist Organizations.* Essex, England: Longman Scientific & Technical.

Perlin, S. A. et al. (1995). "Distribution of Industrial Air Emissions by Income and Race in the United States: An Approach Using the Toxic Release Inventory." *Environmental Science and Technology* 29(1): 69-80.

Perotti, R. (1996). "Growth, Income Distribution, and Democracy: What the Data Say." *Journal of Economic Growth* 1, 149-187.

Persson, T. and G. Tabellini. (1994). "Is Inequality Harmful for Growth?" *The American Economic Review* 84: 600-21.

Pigram, J. J. (1980). "Environmental Implications of Tourism Development." *Annals of Tourism Research* 7(4): 554-82.

Pigram, J. J. and S. Wahab. (1997). "The Challenge of Sustainable Tourism Growth." In *Tourism, Development and Growth: The Challenge of Sustainability*, edited by S. Wahab and J. J. Pigram. New York: Routledge, pp. 3-16.

Porter, R. and M. A. Tarrant. (2001). "A Case Study of Environmental Justice and Federal Tourism Sites in Southern Appalachia: A GIS Application." *Journal of Travel Research* 40(1): 27-40.

Rawls, J. (1971). *A Theory of Justice*. Boston, MA: Harvard University Press.

Reeder, R. J. and D. M. Brown (2005). *Recreation, Tourism, and Rural Well-Being*. Economic Research Report 7, Washington, DC: United States Department of Agriculture.

Richez, G. (1996). “Sustaining Local Cultural Identity: Social Unrest and Tourism in Corsica.” In *Sustainable Tourism : European Experiences*, G.K Priestley, J.A. Edwards and H. Coccosis, eds., Willingford UK: CAB International.

Robinson, J. (1991). *Toil and Toxics*. Berkeley, CA: University of California Press.

Romeril, M. (1985). "Tourism and the Environment." *International Journal of Environmental Studies* 25(4): 215-18.

Romeril, M. (1989). "Tourism and the Environment: Accord or Discord." *Tourism Management* 10(3): 204-08.

Ryscavage, P. (1999). *Income Inequality in America: An Analysis of Trends.* Armonk, NY: M.E. Sharpe.

Ryscavage, P., G. Green, and E. Welniak (1992). "The Impact of Demographic, Social, and Economic Change on the Distribution of Income." In *Studies in the Distribution of Income*. Current Population Reports P60-183. Washington, D.C.: U.S. Bureau of the Census.

Ryscavage, P. and P. Henle. (1990). "Earnings Inequality Accelerates in the 1980s." *Monthly Labor Review*, December: 3-16.

Salem, N. (1995). "Water Rights." *Tourism in Focus* 17: 4-5.

Sassen, S. (1990). "Economic Restructuring and the American City." A*nnual Review of Sociology* 16: 465-90.

Scheyvens, R. (1999). "Ecotourism and the Empowerment of Local Communities." *Tourism Management* 20: 245-49.

Sen, A. (2000). "Social Justice and the Distribution of Income." In *Handbook of Income Distribution*, edited by A. B. Atkinson and F. Bourgignon. Amsterdam, The Netherlands: Elsevier, pp. 59-85.

Sharpley, R. (2000). "Tourism and Sustainable Development: Exploring the Theoretical Divide." *Journal of Sustainable Tourism* 8 (2000): 1-19.

Sharpley, R., and J. Sharpley. (1997). *Rural Tourism: An Introduction*. London: International Thomson Business Press.

Shrader-Frechette, K. (2002). *Environmental Justice.* Oxford, NY: Oxford University Press.

Siegel, J. S. (2002). *Applied Demography: Applications to Business, Government, Law, and Public Policy*: Academic Press.

Sinclair, M. T. and C. M. S. Sutcliffe. (1989). "The Economic Effects on Destination Areas of Foreign Involvement in the Tourism Industry: A Spanish Application", in B. Goodall and G. Ashworth (eds) *Marketing in the Tourism Industry: The Promotion of Destination Regions*, New York: Croom Helm.

Sinclair, M. T. and M. Stabler. (2003). *The Economics of Tourism*. New York: Routledge

Smith, M. (1989). *Behind the Glitter: The Impact of Tourism on Rural Women in the Southeast Lexington*. Lexington, KY: Southeast Women's Employment Coalition.

Smith, C. and P. Jenner. (1984). "Tourism and the Environment." *Travel and Tourism Analyst* 5: 68-86.

Stein, S. M., and T. L. Harper. (1996). "Planning Theory for Environmentally Sustainable Planning." *Geography Research Forum* 16: 80-101.

Stewart, Sue I., and Daniel J. Stynes (1994). "Toward a Dynamic Model of Complex Tourism Choices: The Seasonal Home Location Decision." *Journal of Travel and Tourism Marketing* 3, no. 3: 69-88.

Stonich, S. C. (1998). "Political Ecology of Tourism." *Annals of Tourism Research* 25(1): 25-54.

Stretesky, P and M. J. Hogan. (1998). "Environmental Justice: An Analysis of Superfund Sites in Florida." *Social Problems* 45(2): 268-87.

Swarbrooke (1999). *Sustainable Tourism Management.* New York: CABI Publishing.

Tarrant, M. A. and H. K. Cordell (1999). "Environmental Justice and the Spatial Distribution of Outdoor Recreation Sites: An Application of Geographic Information System." *Journal of Leisure Research* 31: 18-34.

Teitelbaum, M. (2000). "Social and Political Impacts of Recent Trends in U.S. Immigration." In *Back to Shared Prosperity: The Growing Inequality of Wealth and Income in America*, edited by R. Marshall. Armonk, NY: M.E. Sharpe, pp. 171-179.

Thorbecke, E. and C. Charumilind. (2002). "Economic Inequality and Its Socioeconomic Impact." *World Development* 30: 1477-1495.

Timothy, D. J. (1998). "Cooperative Tourism Planning in a Developing Destination." *Journal of Sustainable Tourism* 6(1): 52-68.

Tisdell, C. (1987). "Tourism, the Environment and Profit." *Economic Analysis and Policy* 17(1): 13-30.

Tomaskovic-Devey, D. and V. J. Roscigno. (1996). "Racial Economic Subordination and White Gain on the U.S. South." *American Sociological Review* 61(4): 565-89.

Tyler, C. (1989). "A Phenomenal Explosion." *Geographical Magazine* 61(8): 18-21.

Ukayli, M. and T. Husain. (1988). "Comparative Evaluation of Surface Water Availability, Wastewater Reuse and Desalination in Saudi Arabia." *Water International* 13, 218-225.

United Church of Christ. (1987). *Toxic Waste and Race in the United States*. New York: United Church of Christ.

Urry, J. (1992). "The Tourist Gaze and the Environment." *Theory, Culture and Society* 9: 1-26.

U.S. Bureau of Economic Analysis (2004). *Regional Economic Information System*

U.S. Census Bureau (1992). *Census 1990 Summary File 3*, Washington, DC: US Census Bureau

U.S. Census Bureau (2002). *Census 2000 Summary File 3*, Washington, DC: US Census Bureau

U.S. EPA. (1992). "Environmental Equity: Reducing Risk for All Communities." Washington, DC: Environmental Protection Agency, Office of Policy, Planning and Evaluation.

U.S. GAO. (1983). "Siting of Hazardous Waste Landfills and Their Correlation with the Racial and Socio-Economic Status of Surrounding Communities." Washington, DC: General Accounting Office.

Weaver, D. (2004). “Tourism and the Elusive Paradigm of Sustainable Development.” In *A Companion to Tourism*, A. Lew, M. Hall and M. Williams, eds., Oxford, UK: Blackwell Publishing.

Welniak, E. (1988). *Calculating Indexes of Income Concentration (GINI’s) from Grouped Data: An Empirical Study*, Washington, DC: Internal Memorandum, Income Statistics Branch, U.S. Bureau of the Census.

Wemett, J. N. and J. A. Henderson. (1998). "Parks for the People: Whittier College's Environmental Justice Project." *Geo Information System* 8(3): 26-32.

Wenz, P. S. (1988). *Environmental Justice*. Albany, NY: State University of New York Press.

White, H. (1992). "Hazardous Waste Incineration and Minority Communities." In *Race and the Incidence of Environmental Hazards*, edited by Bunyan Bryant and Paul Mohai. Boulder, CO: Westview Press, pp. 126-139.

Williams, A., and G. Shaw (1988). "Tourism: Candy Floss Industry or Job Generator?" *Town Planning Review* 59: 81-103.

Williams, A. and G. Shaw, (eds) (1991). *Tourism and Economic Development: Western European Experiences*. London: Belhaven Press.

Williams, A. and G. Shaw. (1998). "Tourism and Uneven Economic Development." In *Tourism and Economic Development: European Experiences*, edited by A. Williams and G. Shaw. Chichester, NY: John Wiley and Sons.

Wilson, A. (1997). *Ukranian Nationalism in the 1990s: A Minority Faith*. Cambridge: Cambridge University Press.

World Commission on Environment and Development (WCED) (1987). *Our Common Future*. New York: Oxford University Press.

Young, H. P. (1994). *Equity in Theory and Practice*. Princeton, NJ: Princeton University Press.

Zimmerman, R. (1993) "Social Equity and Environmental Risk." *Risk Analysis* 13 (6): 649-66.

APPENDIX A

1. Tourism and Recreation Dependent Communities

AL	Baldwin County
AK	Bristol Bay
AK	Borough Denali
AK	Borough Dillingham Census Area
AK	Haines Borough
AK	Lake and Peninsula Borough
AK	Prince of Wales-Outer Ketchikan Census Area
AK	Skagway-Hoonah-Angoon Census Area
AK	Southeast Fairbanks Census Area
AK	Valdez-Cordova Census Area
AK	Yakutat City and Borough
AK	Yukon-Koyukuk Census Area
AZ	Apache County
AZ	Gila County
AZ	La Paz County
AZ	Mohave County
AZ	Navajo County
AR	Carroll County
AR	Montgomery County
AR	Van Buren County
CA	Alpine County
CA	Calaveras County
CA	Inyo County
CA	Lake County
CA	Mariposa County
CA	Mendocino County
CA	Mono County
CA	Nevada County
CA	Plumas County
CA	Sierra County
CA	Trinity County
CA	Tuolumne County
CO	Archuleta County
CO	Chaffee County
CO	Costilla County
CO	Custer County
CO	Dolores County
CO	Eagle County
CO	Garfield County
CO	Grand County
CO	Gunnison County
CO	Hinsdale County
CO	Huerfano County
CO	Jackson County
CO	Lake County
CO	La Plata County
CO	Mineral County
CO	Montezuma County
CO	Ouray County
CO	Pitkin County
CO	Routt County
CO	San Juan County
CO	San Miguel County
CO	Summit County
DE	Sussex County
FL	Flagler County
FL	Franklin County
FL	Glades County
FL	Monroe County
FL	Walton County
GA	Quitman County
GA	Rabun County
GA	Towns County
GA	White County
HI	Hawaii County
HI	Kauai County
HI	Maui County
ID	Adams County
ID	Bear Lake County
ID	Blaine County
ID	Bonner County
ID	Camas County
ID	Clark County
ID	Custer County
ID	Fremont County

ID	Teton County
ID	Valley County
IL	Jo Daviess County
IL	Massac County
IA	Dickinson County
IA	Tama County
KY	Lyon County
LA	Allen Parish
LA	Avoyelles Parish
ME	Franklin County
ME	Hancock County
ME	Knox County
ME	Lincoln County
ME	Oxford County
ME	Piscataquis County
MD	Garrett County
MD	Talbot County
MD	Worcester County
MA	Dukes County
MA	Nantucket County
MI	Alcona County
MI	Alger County
MI	Antrim County
MI	Arenac County
MI	Benzie County
MI	Charlevoix County
MI	Cheboygan County
MI	Chippewa County
MI	Clare County
MI	Crawford County
MI	Emmet County
MI	Gladwin County
MI	Gogebic County
MI	Grand Traverse County
MI	Iosco County
MI	Iron County
MI	Isabella County
MI	Kalkaska County
MI	Keweenaw County
MI	Lake County
MI	Leelanau County
MI	Luce County
MI	Mackinac County
MI	Manistee County
MI	Mason County
MI	Mecosta County
MI	Missaukee County
MI	Montmorency County
MI	Oceana County
MI	Ogemaw County
MI	Ontonagon County
MI	Osceola County
MI	Oscoda County
MI	Otsego County
MI	Presque Isle County
MI	Roscommon County
MI	Schoolcraft County
MN	Aitkin County
MN	Becker County
MN	Cass County
MN	Cook County
MN	Crow Wing County
MN	Douglas County
MN	Hubbard County
MN	Koochiching County
MN	Lake County
MN	Lake of the Woods County
MN	Mahnomen County
MN	Mille Lacs County
MN	Otter Tail County
MN	Pine County
MS	Warren County
MO	Benton County
MO	Camden County
MO	Hickory County
MO	Miller County
MO	Morgan County
MO	Stone County
MO	Taney County
MT	Deer Lodge County
MT	Flathead County
MT	Gallatin County
MT	Garfield County
MT	Glacier County
MT	Granite County
MT	Madison County
MT	Meagher County
MT	Mineral County
MT	Park County
MT	Sweet Grass County
NE	Gosper County
NE	Keith County
NE	Wheeler County

NV	Churchill County
NV	Douglas County
NV	Elko County
NV	White Pine County
NH	Belknap County
NH	Carroll County
NH	Coos County
NH	Grafton County
NM	Catron County
NM	Colfax County
NM	Lincoln County
NM	Sierra County
NM	Taos County
NY	Delaware County
NY	Essex County
NY	Greene County
NY	Hamilton County
NY	Sullivan County
NC	Avery County
NC	Carteret County
NC	Dare County
NC	Graham County
NC	Hyde County
NC	Jackson County
NC	Macon County
NC	Moore County
NC	Pamlico County
NC	Swain County
NC	Transylvania County
NC	Watauga County
ND	Billings County
ND	Mountrail County
ND	Sioux County
OK	Delaware County
OK	McIntosh County
OK	Marshall County
OR	Clatsop County
OR	Curry County
OR	Hood River County
OR	Lincoln County
OR	Tillamook County
OR	Wasco County
PA	Cameron County
PA	Forest County
PA	Monroe County
PA	Potter County
PA	Sullivan County
PA	Wayne County
SC	Beaufort County
SC	Georgetown County
SD	Buffalo County
SD	Charles Mix County
SD	Custer County
SD	Jackson County
SD	Lawrence County
SD	Lyman County
SD	Moody County
SD	Sully County
TN	Sevier County
TX	Brewster County
TX	Burnet County
TX	Coke County
TX	Hood County
TX	Jeff Davis County
TX	Kendall County
TX	Kenedy County
TX	Kerr County
TX	Kimble County
TX	Kinney County
TX	Llano County
TX	McMullen County
TX	Real County
TX	Sabine County
TX	Terrell County
UT	Beaver County
UT	Daggett County
UT	Duchesne County
UT	Garfield County
UT	Grand County
UT	Iron County
UT	Kane County
UT	Rich County
UT	San Juan County
UT	Wasatch County
UT	Wayne County
VT	Bennington County
VT	Essex County
VT	Lamoille County
VT	Orleans County
VT	Rutland County
VT	Windham County
VT	Windsor County
VA	Accomack County

VA Bath County
VA Highland County
VA Lancaster County
VA Middlesex County
VA Rappahannock County
WA Jefferson County
WA Mason County
WA Okanogan County
WA Pacific County
WA San Juan County
WV Greenbrier County
WV Pocahontas County
WV Tucker County
WI Adams County
WI Bayfield County
WI Burnett County
WI Door County
WI Florence County
WI Forest County
WI Green Lake County
WI Iron County
WI Juneau County
WI Marinette County
WI Marquette County
WI Menominee County
WI Oneida County
WI Price County
WI Sauk County
WI Sawyer County
WI Vilas County
WI Walworth County
WI Washburn County
WI Waushara County
WY Carbon County
WY Hot Springs County
WY Johnson County
WY Park County
WY Sheridan County
WY Sublette County
WY Teton County

2. Manufacturing Dependent Communities

AL Barbour County
AL Chambers County
AL Choctaw County
AL Clarke County
AL Clay County
AL Cleburne County
AL Coffee County
AL Coosa County
AL Dallas County
AL DeKalb County
AL Escambia County
AL Fayette County
AL Franklin County
AL Jackson County
AL Lamar County
AL Marengo County
AL Marion County
AL Marshall County
AL Monroe County
AL Perry County
AL Randolph County
AL Talladega County
AL Tallapoosa County
AL Washington County
AL Wilcox County
AL Winston County
AK Aleutians East Borough
AK Aleutians West Census Area
AK Lake and Peninsula Borough
AK Yakutat City and Borough
AR Arkansas County
AR Ashley County
AR Baxter County
AR Bradley County
AR Calhoun County
AR Carroll County
AR Clark County
AR Clay County
AR Cleburne County
AR Columbia County
AR Dallas County
AR Desha County
AR Drew County
AR Greene County
AR Hempstead County
AR Hot Spring County
AR Independence County
AR Johnson County

AR	Little River County
AR	Logan County
AR	Marion County
AR	Mississippi County
AR	Ouachita County
AR	Randolph County
AR	Union County
AR	Yell County
CA	Sierra County
CT	Litchfield County
CT	Windham County
FL	Hamilton County
FL	Taylor County
GA	Bacon County
GA	Ben Hill County
GA	Berrien County
GA	Bleckley County
GA	Chattooga County
GA	Clinch County
GA	Coffee County
GA	Cook County
GA	Decatur County
GA	Dooly County
GA	Early County
GA	Elbert County
GA	Emanuel County
GA	Evans County
GA	Gilmer County
GA	Gordon County
GA	Greene County
GA	Habersham County
GA	Hart County
GA	Jeff Davis County
GA	Jefferson County
GA	Jenkins County
GA	Laurens County
GA	Lincoln County
GA	Morgan County
GA	Peach County
GA	Polk County
GA	Putnam County
GA	Rabun County
GA	Schley County
GA	Screven County
GA	Stephens County
GA	Stewart County
GA	Sumter County
GA	Telfair County
GA	Troup County
GA	Upson County
GA	Warren County
GA	Wayne County
GA	Wilkes County
GA	Wilkinson County
ID	Benewah County
ID	Caribou County
IL	Adams County
IL	Cass County
IL	Clark County
IL	Clay County
IL	Crawford County
IL	Douglas County
IL	Edwards County
IL	Effingham County
IL	Hancock County
IL	Jo Daviess County
IL	Lee County
IL	Livingston County
IL	Marion County
IL	Morgan County
IL	Moultrie County
IL	Ogle County
IL	Perry County
IL	Putnam County
IL	Stephenson County
IL	Warren County
IL	Washington County
IL	Wayne County
IL	Whiteside County
IN	Adams County
IN	Blackford County
IN	Cass County
IN	Clinton County
IN	Decatur County
IN	DeKalb County
IN	Dubois County
IN	Fayette County
IN	Fountain County
IN	Fulton County
IN	Grant County
IN	Henry County
IN	Huntington County
IN	Jackson County

IN	Jay County
IN	Jefferson County
IN	Jennings County
IN	Kosciusko County
IN	LaGrange County
IN	Lawrence County
IN	Marshall County
IN	Miami County
IN	Montgomery County
IN	Noble County
IN	Orange County
IN	Perry County
IN	Pulaski County
IN	Randolph County
IN	Ripley County
IN	Rush County
IN	Scott County
IN	Spencer County
IN	Starke County
IN	Steuben County
IN	Switzerland County
IN	Wabash County
IN	Wayne County
IN	White County
IA	Appanoose County
IA	Buena Vista County
IA	Chickasaw County
IA	Clarke County
IA	Clinton County
IA	Crawford County
IA	Des Moines County
IA	Dickinson County
IA	Fremont County
IA	Hamilton County
IA	Hancock County
IA	Henry County
IA	Howard County
IA	Humboldt County
IA	Ida County
IA	Iowa County
IA	Jasper County
IA	Lee County
IA	Louisa County
IA	Marion County
IA	Marshall County
IA	Monroe County
IA	Muscatine County
IA	Plymouth County
IA	Sioux County
IA	Union County
IA	Van Buren County
IA	Winnebago County
IA	Wright County
KS	Allen County
KS	Atchison County
KS	Cherokee County
KS	Cowley County
KS	Finney County
KS	Ford County
KS	Labette County
KS	Lyon County
KS	McPherson County
KS	Montgomery County
KS	Neosho County
KS	Rush County
KS	Wilson County
KY	Allen County
KY	Anderson County
KY	Ballard County
KY	Barren County
KY	Boyle County
KY	Butler County
KY	Carroll County
KY	Clinton County
KY	Crittenden County
KY	Fulton County
KY	Graves County
KY	Grayson County
KY	Harrison County
KY	Hart County
KY	Jackson County
KY	Logan County
KY	Madison County
KY	Marion County
KY	Marshall County
KY	Mason County
KY	Mercer County
KY	Metcalfe County
KY	Monroe County
KY	Montgomery County
KY	Nicholas County
KY	Ohio County
KY	Powell County

KY	Simpson County
KY	Washington County
KY	Wayne County
LA	Assumption Parish
LA	Beauregard Parish
LA	Bienville Parish
LA	Jackson Parish
LA	Sabine Parish
LA	St. James Parish
LA	Webster Parish
LA	Winn Parish
ME	Franklin County
ME	Oxford County
ME	Piscataquis County
ME	Somerset County
MD	Dorchester County
MI	Alger County
MI	Allegan County
MI	Alpena County
MI	Antrim County
MI	Baraga County
MI	Branch County
MI	Charlevoix County
MI	Delta County
MI	Dickinson County
MI	Gladwin County
MI	Hillsdale County
MI	Huron County
MI	Lenawee County
MI	Manistee County
MI	Mason County
MI	Menominee County
MI	Midland County
MI	Montcalm County
MI	Ontonagon County
MI	Osceola County
MI	Oscoda County
MI	St. Joseph County
MI	Sanilac County
MI	Wexford County
MN	Brown County
MN	Faribault County
MN	Freeborn County
MN	Goodhue County
MN	Koochiching County
MN	Lake of the Woods County
MN	Le Sueur County
MN	Lyon County
MN	McLeod County
MN	Mower County
MN	Nicollet County
MN	Rice County
MN	Roseau County
MN	Steele County
MN	Todd County
MN	Waseca County
MN	Watonwan County
MN	Winona County
MS	Alcorn County
MS	Amite County
MS	Benton County
MS	Calhoun County
MS	Chickasaw County
MS	Choctaw County
MS	Clarke County
MS	Clay County
MS	Grenada County
MS	Itawamba County
MS	Jasper County
MS	Jones County
MS	Lawrence County
MS	Lee County
MS	Monroe County
MS	Noxubee County
MS	Panola County
MS	Pontotoc County
MS	Prentiss County
MS	Tippah County
MS	Tishomingo County
MS	Union County
MS	Webster County
MS	Winston County
MS	Yalobusha County
MS	Yazoo County
MO	Audrain County
MO	Barry County
MO	Barton County
MO	Crawford County
MO	Douglas County
MO	Gasconade County
MO	Grundy County
MO	Laclede County
MO	Linn County

MO	Marion County
MO	Monroe County
MO	New Madrid County
MO	Perry County
MO	Pettis County
MO	Ralls County
MO	Ste. Genevieve County
MO	Saline County
MO	Shannon County
MO	Shelby County
NE	Dawson County
NE	Hall County
NE	Platte County
NE	Saline County
NH	Coos County
NH	Sullivan County
NY	Chautauqua County
NY	Chenango County
NY	Delaware County
NY	Lewis County
NY	Montgomery County
NY	Seneca County
NY	Steuben County
NC	Ashe County
NC	Beaufort County
NC	Bertie County
NC	Bladen County
NC	Cherokee County
NC	Cleveland County
NC	Columbus County
NC	Davidson County
NC	Duplin County
NC	Iredell County
NC	Lee County
NC	Lincoln County
NC	McDowell County
NC	Martin County
NC	Montgomery County
NC	Richmond County
NC	Robeson County
NC	Rowan County
NC	Rutherford County
NC	Scotland County
NC	Stanly County
NC	Surry County
NC	Transylvania County
NC	Vance County
NC	Wilkes County
NC	Wilson County
NC	Yancey County
OH	Ashland County
OH	Ashtabula County
OH	Auglaize County
OH	Champaign County
OH	Columbiana County
OH	Coshocton County
OH	Crawford County
OH	Darke County
OH	Defiance County
OH	Fayette County
OH	Hancock County
OH	Hardin County
OH	Henry County
OH	Highland County
OH	Hocking County
OH	Holmes County
OH	Huron County
OH	Jackson County
OH	Knox County
OH	Logan County
OH	Marion County
OH	Mercer County
OH	Monroe County
OH	Paulding County
OH	Perry County
OH	Pike County
OH	Putnam County
OH	Ross County
OH	Sandusky County
OH	Seneca County
OH	Shelby County
OH	Tuscarawas County
OH	Van Wert County
OH	Vinton County
OH	Wayne County
OH	Williams County
OH	Wyandot County
OK	Adair County
OK	Johnston County
OK	Kay County
OK	Love County
OK	McCurtain County
OK	Marshall County

OK	Mayes County
OK	Noble County
OR	Crook County
OR	Douglas County
OR	Jefferson County
OR	Linn County
PA	Adams County
PA	Bedford County
PA	Bradford County
PA	Cameron County
PA	Clinton County
PA	Columbia County
PA	Crawford County
PA	Elk County
PA	Franklin County
PA	Fulton County
PA	Jefferson County
PA	Juniata County
PA	McKean County
PA	Mifflin County
PA	Northumberland County
PA	Schuylkill County
PA	Snyder County
PA	Tioga County
PA	Venango County
PA	Warren County
SC	Abbeville County
SC	Allendale County
SC	Bamberg County
SC	Barnwell County
SC	Cherokee County
SC	Chester County
SC	Chesterfield County
SC	Dillon County
SC	Greenwood County
SC	Hampton County
SC	Lancaster County
SC	Marion County
SC	Marlboro County
SC	Newberry County
SC	Oconee County
SC	Orangeburg County
SC	Union County
SC	Williamsburg County
SD	Codington County
TN	Bedford County
TN	Carroll County
TN	Claiborne County
TN	Clay County
TN	Cocke County
TN	Crockett County
TN	Decatur County
TN	DeKalb County
TN	Dyer County
TN	Franklin County
TN	Gibson County
TN	Giles County
TN	Greene County
TN	Hardeman County
TN	Hardin County
TN	Haywood County
TN	Henderson County
TN	Henry County
TN	Humphreys County
TN	Jackson County
TN	Johnson County
TN	Lauderdale County
TN	Lawrence County
TN	Lewis County
TN	Lincoln County
TN	McMinn County
TN	McNairy County
TN	Marshall County
TN	Maury County
TN	Meigs County
TN	Monroe County
TN	Morgan County
TN	Obion County
TN	Overton County
TN	Perry County
TN	Pickett County
TN	Putnam County
TN	Rhea County
TN	Scott County
TN	Van Buren County
TN	Warren County
TN	Wayne County
TN	White County
TX	Angelina County
TX	Brown County
TX	Cass County
TX	Grimes County
TX	Hardeman County

TX	Harrison County
TX	Hutchinson County
TX	Jackson County
TX	Jasper County
TX	Lamar County
TX	Lavaca County
TX	Milam County
TX	Moore County
TX	Morris County
TX	Newton County
TX	Red River County
TX	Runnels County
TX	Sabine County
TX	Titus County
UT	Box Elder County
VT	Bennington County
VT	Essex County
VA	Alleghany County
VA	Augusta County
VA	Bland County
VA	Carroll County
VA	Charlotte County
VA	Essex County
VA	Grayson County
VA	Greensville County
VA	Halifax County
VA	Henry County
VA	Highland County
VA	Mecklenburg County
VA	Northumberland County
VA	Page County
VA	Patrick County
VA	Rockbridge County
VA	Shenandoah County
VA	Smyth County
VA	Buena Vista city
VA	Clifton Forge city
VA	Covington city
VA	Emporia city
VA	Galax city
VA	Lexington city
VA	Martinsville city
VA	Staunton city
VA	Waynesboro city
WA	Klickitat County
WA	Pend Oreille County
WA	Stevens County
WA	Wahkiakum County
WV	Hardy County
WV	Jackson County
WV	Ritchie County
WV	Taylor County
WV	Tyler County
WI	Barron County
WI	Burnett County
WI	Crawford County
WI	Dodge County
WI	Jefferson County
WI	Juneau County
WI	Lincoln County
WI	Manitowoc County
WI	Marinette County
WI	Marquette County
WI	Polk County
WI	Price County
WI	Richland County
WI	Rusk County
WI	Taylor County
WI	Trempealeau County
WI	Walworth County
WI	Waupaca County
WI	Wood County

3. Farming Dependent Communities

AL	Bullock County
AL	Crenshaw County
AL	Geneva County
AR	Chicot County
AR	Cleveland County
AR	Franklin County
AR	Howard County
AR	Lafayette County
AR	Lee County
AR	Lincoln County
AR	Madison County
AR	Nevada County
AR	Perry County
AR	Pike County
AR	Polk County
AR	Prairie County
AR	Scott County
AR	Sevier County

AR	Woodruff County
CA	Colusa County
CA	Glenn County
CA	Imperial County
CA	Modoc County
CA	Tulare County
CO	Baca County
CO	Bent County
CO	Cheyenne County
CO	Crowley County
CO	Kiowa County
CO	Kit Carson County
CO	Phillips County
CO	Prowers County
CO	Rio Grande County
CO	Saguache County
CO	Sedgwick County
CO	Washington County
CO	Yuma County
FL	DeSoto County
FL	Gilchrist County
FL	Hardee County
FL	Hendry County
FL	Lafayette County
FL	Okeechobee County
GA	Atkinson County
GA	Baker County
GA	Banks County
GA	Brooks County
GA	Calhoun County
GA	Clay County
GA	Echols County
GA	Franklin County
GA	Jackson County
GA	Macon County
GA	Madison County
GA	Miller County
GA	Mitchell County
GA	Oglethorpe County
GA	Seminole County
GA	Taliaferro County
GA	Tattnall County
GA	Taylor County
GA	Turner County
GA	Webster County
GA	Wheeler County
GA	Wilcox County
GA	Worth County
ID	Butte County
IL	Calhoun County
IA	Audubon County
IA	Fayette County
IA	Grundy County
IA	Lyon County
IA	Mitchell County
IA	Osceola County
IA	Palo Alto County
IA	Pocahontas County
IA	Ringgold County
IA	Sac County
IA	Taylor County
IA	Worth County
KS	Chase County
KS	Cheyenne County
KS	Clark County
KS	Comanche County
KS	Decatur County
KS	Edwards County
KS	Gove County
KS	Graham County
KS	Gray County
KS	Greeley County
KS	Hamilton County
KS	Haskell County
KS	Hodgeman County
KS	Jewell County
KS	Kearny County
KS	Kiowa County
KS	Lane County
KS	Lincoln County
KS	Meade County
KS	Ness County
KS	Rawlins County
KS	Republic County
KS	Scott County
KS	Sheridan County
KS	Sherman County
KS	Smith County
KS	Stafford County
KS	Stanton County
KS	Stevens County
KS	Thomas County
KS	Trego County

KS	Wallace County
KS	Washington County
KS	Wichita County
KY	Bourbon County
KY	Carlisle County
KY	Hickman County
KY	McLean County
KY	Todd County
KY	Webster County
KY	Woodford County
LA	Catahoula Parish
LA	East Carroll Parish
LA	St. Helena Parish
LA	Tensas Parish
MN	Kittson County
MN	Lac qui Parle County
MN	Lincoln County
MN	Marshall County
MN	Murray County
MN	Norman County
MN	Red Lake County
MN	Renville County
MN	Rock County
MN	Traverse County
MS	Humphreys County
MS	Issaquena County
MS	Leake County
MS	Newton County
MS	Scott County
MS	Sharkey County
MS	Simpson County
MS	Smith County
MS	Walthall County
MO	Holt County
MO	Mercer County
MO	Putnam County
MO	Scotland County
MO	Sullivan County
MO	Worth County
MT	Blaine County
MT	Carter County
MT	Chouteau County
MT	Daniels County
MT	Fallon County
MT	Golden Valley County
MT	Judith Basin County
MT	Liberty County
MT	Musselshell County
MT	Phillips County
MT	Pondera County
MT	Teton County
MT	Valley County
MT	Wheatland County
NE	Blaine County
NE	Boyd County
NE	Brown County
NE	Burt County
NE	Cherry County
NE	Clay County
NE	Colfax County
NE	Cuming County
NE	Custer County
NE	Deuel County
NE	Dixon County
NE	Fillmore County
NE	Franklin County
NE	Frontier County
NE	Furnas County
NE	Garden County
NE	Garfield County
NE	Grant County
NE	Greeley County
NE	Hamilton County
NE	Harlan County
NE	Hayes County
NE	Hitchcock County
NE	Holt County
NE	Hooker County
NE	Kearney County
NE	Keya Paha County
NE	Knox County
NE	Logan County
NE	Loup County
NE	McPherson County
NE	Merrick County
NE	Morrill County
NE	Nuckolls County
NE	Pawnee County
NE	Perkins County
NE	Phelps County
NE	Pierce County
NE	Polk County
NE	Richardson County

NE	Rock County
NE	Saunders County
NE	Sheridan County
NE	Sherman County
NE	Sioux County
NE	Stanton County
NE	Thayer County
NE	Thomas County
NE	Valley County
NE	Wayne County
NE	Webster County
NV	Eureka County
NM	Chaves County
NM	De Baca County
NM	Harding County
NM	Roosevelt County
NM	Union County
NC	Alleghany County
NC	Greene County
NC	Jones County
NC	Perquimans County
NC	Sampson County
ND	Benson County
ND	Bowman County
ND	Burke County
ND	Cavalier County
ND	Dickey County
ND	Divide County
ND	Dunn County
ND	Eddy County
ND	Emmons County
ND	Foster County
ND	Golden Valley County
ND	Griggs County
ND	Hettinger County
ND	Kidder County
ND	LaMoure County
ND	Logan County
ND	McHenry County
ND	McIntosh County
ND	McKenzie County
ND	Nelson County
ND	Oliver County
ND	Pembina County
ND	Pierce County
ND	Ransom County
ND	Renville County
ND	Richland County
ND	Sargent County
ND	Sheridan County
ND	Slope County
ND	Steele County
ND	Traill County
ND	Walsh County
ND	Wells County
OK	Alfalfa County
OK	Beaver County
OK	Blaine County
OK	Cimarron County
OK	Cotton County
OK	Dewey County
OK	Ellis County
OK	Grant County
OK	Greer County
OK	Harmon County
OK	Harper County
OK	Kiowa County
OK	Roger Mills County
OK	Texas County
OK	Tillman County
OR	Harney County
OR	Morrow County
OR	Sherman County
OR	Wheeler County
SD	Aurora County
SD	Bennett County
SD	Bon Homme County
SD	Brule County
SD	Campbell County
SD	Clark County
SD	Corson County
SD	Day County
SD	Deuel County
SD	Douglas County
SD	Edmunds County
SD	Faulk County
SD	Grant County
SD	Gregory County
SD	Haakon County
SD	Hamlin County
SD	Hanson County
SD	Hutchinson County
SD	Hyde County

SD Jerauld County
SD Jones County
SD Kingsbury County
SD Lincoln County
SD McCook County
SD McPherson County
SD Marshall County
SD Mellette County
SD Miner County
SD Perkins County
SD Potter County
SD Roberts County
SD Sanborn County
SD Spink County
SD Tripp County
SD Turner County
SD Ziebach County
TN Bledsoe County
TX Bailey County
TX Borden County
TX Briscoe County
TX Camp County
TX Castro County
TX Cochran County
TX Collingsworth County
TX Comanche County
TX Concho County
TX Crosby County
TX Dallam County
TX Dickens County
TX Donley County
TX Edwards County
TX Erath County
TX Floyd County
TX Foard County
TX Franklin County
TX Frio County
TX Gaines County
TX Glasscock County
TX Gonzales County
TX Hale County
TX Hall County
TX Hansford County
TX Hartley County
TX Hemphill County
TX Hudspeth County
TX Kent County
TX King County
TX Knox County
TX Lamb County
TX Lipscomb County
TX Lynn County
TX Madison County
TX Martin County
TX Mills County
TX Motley County
TX Ochiltree County
TX Oldham County
TX Parmer County
TX Roberts County
TX Shelby County
TX Sherman County
TX Sterling County
TX Swisher County
TX Terry County
TX Throckmorton County
TX Wheeler County
TX Zavala County
UT Millard County
UT Piute County
WA Adams County
WA Franklin County
WA Garfield County
WA Grant County
WI Clark County
WI Lafayette County
WY Goshen County
WY Niobrara County

4. Tourism and Recreation Dependent Communities by Recreation Type

<Coastal ocean resorts>

CA Mendocino County
DE Sussex County
FL Franklin County
FL Monroe County
FL Walton County
HI Hawaii County
HI Kauai County
HI Maui County
ME Hancock County

ME Knox County
ME Lincoln County
MD Talbot County
MD Worcester County
MA Dukes County
MA Nantucket County
NC Carteret County
NC Dare County
NC Hyde County
NC Pamlico County
OR Clatsop County
OR Curry County
OR Lincoln County
OR Tillamook County
SC Beaufort County
SC Georgetown County
TX Kenedy County
VA Lancaster County
VA Middlesex County
WA Jefferson County
WA Mason County
WA Pacific County
WA San Juan County

<Reservoir lakes >

AR Carroll County
AR Montgomery County
AR Van Buren County
GA Quitman County
KY Lyon County
MO Benton County
MO Camden County
MO Hickory County
MO Miller County
MO Morgan County
MO Stone County
MT Garfield County
NE Gosper County
NE Keith County
NE Wheeler County
NM Sierra County
NC Graham County
OK Delaware County
OK McIntosh County
OK Marshall County
SD Sully County
TX Burnet County
TX Coke County
TX Llano County
TX Sabine County
UT Daggett County

<Northwoods lakes/ second home>

MI Alcona County
MI Alger County
MI Antrim County
MI Arenac County
MI Benzie County
MI Charlevoix County
MI Cheboygan County
MI Chippewa County
MI Clare County
MI Crawford County
MI Emmet County
MI Gladwin County
MI Gogebic County
MI Grand Traverse County
MI Iosco County
MI Iron County
MI Kalkaska County
MI Keweenaw County
MI Lake County
MI Leelanau County
MI Luce County
MI Mackinac County
MI Manistee County
MI Mason County
MI Mecosta County
MI Missaukee County
MI Montmorency County
MI Oceana County
MI Ogemaw County
MI Ontonagon County
MI Osceola County
MI Oscoda County
MI Otsego County
MI Presque Isle County
MI Roscommon County
MI Schoolcraft County
MN Aitkin County
MN Becker County

MN	Cass County
MN	Cook County
MN	Crow Wing County
MN	Douglas County
MN	Hubbard County
MN	Koochiching County
MN	Lake County
MN	Lake of the Woods County
MN	Mille Lacs County
MN	Otter Tail County
MN	Pine County
WI	Adams County
WI	Bayfield County
WI	Burnett County
WI	Door County
WI	Florence County
WI	Forest County
WI	Green Lake County
WI	Iron County
WI	Juneau County
WI	Marinette County
WI	Marquette County
WI	Oneida County
WI	Price County
WI	Sauk County
WI	Sawyer County
WI	Vilas County
WI	Walworth County
WI	Washburn County
WI	Waushara County

<Northeast mountains/lakes/second home>

ME	Franklin County
ME	Oxford County
ME	Piscataquis County
NH	Belknap County
NH	Carroll County
NH	Coos County
NH	Grafton County
NY	Delaware County
NY	Greene County
NY	Hamilton County
NY	Sullivan County
PA	Cameron County
PA	Forest County
PA	Monroe County
PA	Potter County
PA	Sullivan County
PA	Wayne County
VT	Bennington County
VT	Essex County
VT	Orleans County

<National Parks Counties>

AK	Bristol Bay Borough
AK	Denali Borough
AK	Lake and Peninsula Borough
CA	Inyo County
CA	Mariposa County
CO	Montezuma County
MT	Glacier County
MT	Park County
NV	White Pine County
ND	Billings County
SD	Jackson County
TX	Brewster County
UT	Garfield County
UT	Kane County
UT	San Juan County
UT	Wayne County
WY	Park County
WY	Teton County

<West mountains (exclude ski)>

AZ	Gila County
AZ	Navajo County
CA	Lake County
CA	Plumas County
CA	Sierra County
CA	Trinity County
CO	Archuleta County
CO	Costilla County
CO	Custer County
CO	Dolores County
CO	Garfield County
CO	Hinsdale County
CO	Huerfano County
CO	Jackson County
CO	Lake County

CO Mineral County
CO San Juan County
ID Adams County
ID Bear Lake County
ID Clark County
ID Custer County
ID Fremont County
ID Teton County
ID Valley County
MT Deer Lodge County
MT Granite County
MT Meagher County
MT Mineral County
MT Sweet Grass County
NM Catron County
NM Lincoln County
SD Custer County
TX Jeff Davis County
UT Duchesne County
UT Grand County
UT Rich County
UT Wasatch County
WY Carbon County
WY Hot Springs County
WY Sheridan County
WY Sublette County

<Ski resorts counties>

CA Alpine County
CA Nevada County
CO Eagle County
CO Grand County
CO Gunnison County
CO Pitkin County
CO Routt County
CO San Miguel County
CO Summit County
ID Blaine County
ID Camas County
NM Colfax County
UT Beaver County
VT Lamoille County
WV Pocahontas County
WV Tucker County

<Casino counties>

IA Tama County
LA Allen Parish
LA Avoyelles Parish
MI Isabella County
MN Mahnomen County
MS Warren County
NV Churchill County
NV Douglas County
NV Elko County
ND Mountrail County
ND Sioux County
SD Buffalo County
SD Charles Mix County
SD Lawrence County
SD Lyman County
SD Moody County
WI Menominee County

<Other mountains (with ski)>

AZ Apache County
CA Calaveras County
CA Mono County
CA Tuolumne County
CO Chaffee County
CO La Plata County
ID Bonner County
MT Flathead County
MT Gallatin County
NM Taos County
NY Essex County
UT Iron County
VT Rutland County
VT Windham County
VT Windsor County
WY Johnson County

<South Appalachian mountain resorts>

GA Rabun County
GA Towns County
GA White County
MD Garrett County
NC Avery County

NC	Jackson County
NC	Macon County
NC	Swain County
NC	Transylvania County
NC	Watauga County
VA	Bath County
VA	Highland County
WV	Greenbrier County

<Other regions (including historic towns)>

AK	Dillingham Census Area
AK	Haines Borough
AK	Prince of Wales-Outer Ketchikan Census Area
AK	Skagway-Hoonah-Angoon Census Area
AK	Southeast Fairbanks Census Area
AK	Valdez-Cordova Census Area
AK	Yakutat City and Borough
AK	Yukon-Koyukuk Census Area
AZ	La Paz County
FL	Glades County
IL	Jo Daviess County
IA	Dickinson County
MO	Taney County
MT	Madison County
NC	Moore County
OR	Hood River County
OR	Wasco County
TX	Kendall County
TX	Kerr County
TX	Kimble County
TX	Kinney County
TX	McMullen County
TX	Real County
TX	Terrell County
VA	Rappahannock County

APPENDIX B

Census 1990 Summary File 3 (1990 Census of Population and Housing)

Median household income
- Median household income in1989 (P80A)

Manufacturing employment
- Manufacturing: nondurable (100-229) and durable goods (230-399) (P77)
- 100*((p77i4+p77i5)/sum (of p77i1-p77i17))

Female labor force
- 100*((p66i15+p66i19+p66i22+p66i26)/(malelf+femalelf))
- malelf=sum(p66i1,p66i2,p66i5,p66i6,p66i8,p66i9,p66i12,p66i13)
- femalelf=sum(p66i15,p66i16,p66i19,p66i20,p66i22,p66i23,p66i26,p66i27)

Tourism and recreation employment
- Entertainment and recreation services: 800-811 (P77)
- 100*(p77i13/sum (of p77i1-p77i17))

Tourism and recreation earnings
- 100* ((Earnings in tourism industry / ((Earnings in non-farming - Earnings in tourism industry)+ earnings in farming))
- Tourism industry: Arts, entertainment, recreation, accommodation, and food service

Race dualism
- Aggregate household income in 1989(1) by race of householders (P84)
- The percentage of black households: 100*(blkhhlds/(whthhlds+blkhhlds+amihhlds+asihhlds+othhhlds))
- whthhlds=sum(of p82i1-p82i9); blkhhlds=sum(of p82i10-p82i18); amihhlds=sum(of p82i19-p82i27); asihhlds=sum(of p82i28-p82i36); othhhlds=sum(of p82i37-p82i45)
- The black households' percentage share of total income: 100*(p84i2/sum (of p84i1-p84i5))

Sector dualism
- Percentage of agriculture employment: 100*(p77i1/sum (of p77i1-p77i17));
- Percentage of earnings in farming: (earnings in farming / (earnings in farming + earnings in non-farming))*100.
- abs (Percentage of agriculture employment - Percentage of earnings in farming)

South
- U. S. Census Bureau classification

Census 2000 Summary File 3 (2000 Census of Population and Housing)

Median household income
- Median household income in1999 (P53)

Manufacturing employment
- 100*((p049007+p049034)/ (p049002+p049029))

Female labor force
- 100*(p043010/ (p043003+p043010))

Tourism and recreation employment
- 100*((p049024+p049051)/ (p049002+p049029))

Tourism and recreation earnings
- 100* ((Earnings in tourism industry / ((Earnings in non-farming - Earnings in tourism industry)+ earnings in farming))
- Tourism industry: Arts, entertainment, recreation, accommodation, and food service

Race dualism
- The percentage of black households: 100*(p146b001/ p146a001+p146b001+p146c001+p146d001+p146e001+p146f001+p146g001))
- The black households' percentage share of total income: 100*(p153b001/ (sum (of p153a001--p153g001))

Sector dualism
- Percentage of agriculture employment: 100*((p049004+p049031)/(p049002+p049029))
- Percentage of earnings in farming: (earnings in farming / (earnings in farming + earnings in non-farming))*100.
- abs (Percentage of agriculture employment - Percentage of earnings in farming)

South
- U. S. Census Bureau classification

VITA

Name: Sang Kwon Lee

Address: Department of Recreation, Park & Tourism Sciences
Texas A&M University
2261 TAMU
College Station, TX 77843-2261

Email Address: sklee@tamu.edu / smartsklee@gmail.com

Education: B.A., Economics, Pusan National University, 1990
M.A., Economics, Pusan National University, 1992
Ph.D., Recreation, Park and Tourism Sciences, Texas A&M University, 2005