

AN ABSTRACT OF THE DISSERTATION OF

Kreg A. Lindberg for the degree of Doctor of Philosophy in Forest Resources presented on August 14, 1995. Title: Assessment of Tourism's Social Impacts in Oregon Coast Communities Using Contingent Valuation, Value-Attitude, and Expectancy-Value Models.

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Abstract approved:

  
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Tourism development has expanded in Oregon coast communities and in rural communities elsewhere in the nation. This expansion has brought economic gains, but has also brought social costs. The identification and management of tourism's actual and perceived social impacts has received significant attention. This dissertation presents two approaches that extend social impact analysis. First, the contingent valuation (CV) method is used to measure selected tourism-related social impacts in an economic metric. Such measurement facilitates benefit-cost analysis of mitigation projects and contributes to integrated analysis of tourism's diverse impacts. Adjusted mean willingness-to-pay (WTP) for the noise, congestion, and housing commodity models is, respectively, \$130, \$186, and \$161 per household per year. Adjusted mean WTP for the policy models is \$95, \$110, and \$103. The magnitude of these amounts signifies that tourism's economic benefits have come at a substantial social cost.

Second, a general conceptual model of resident attitudes toward tourism is presented. Two sets of specific models derived from this general model are evaluated

using structural equation modeling. The value-attitude models indicate that, for the present data set, the strength of resident values regarding economic gain better predict attitudes than do values regarding disruption within the community. The expectancy-value models indicate that perceived economic and congestion impacts have greater effect on attitudes than do perceived crime and aesthetic impacts. In addition, the data support the hypothesis that demographic variables affect attitudes indirectly through values, but not directly.

Lastly, methodological issues within the CV field are addressed. A relatively thorough No vote follow-up system is illustrated. Scope effects are evaluated and are not found in the present data set. Varying significance levels for the tests used in this evaluation indicate that conclusions regarding scope sensitivity may be dependent on the test used. WTP estimates are not found to be stable across formats, and the data suggest that the mail format may provide the time needed for respondents to fully evaluate their budget constraints.

The present contingent valuation and resident attitude models are the first of their kind within the tourism field. Recommendations for future research on these, and related, topics are presented.

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**Assessment of Tourism's Social Impacts in Oregon Coast Communities Using  
Contingent Valuation, Value-Attitude, and Expectancy-Value Models**

by

**Kreg A. Lindberg**

**A DISSERTATION**

submitted to

**Oregon State University**

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the requirements for the  
degree of

**Doctor of Philosophy**

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Second, I thank Becky Johnson, Lori Cramer, Jim Good, George Stankey, Charles Starnes, and Charles Vars for their encouragement, suggestions, and patience while serving as graduate committee members. As advisor, graduate committee chair, and confidante, Becky has played a particularly influential role throughout my doctoral program. George has been an important mentor, especially at critical junctures. I am also grateful to Bob Berrens, who has been a valuable source of information and guidance with respect to the contingent valuation component of this research.

Third, I thank my family and friends, who have provided the personal and professional support necessary to complete the program. Above all, I owe a debt of gratitude to my mother and father; they have, each in their own way, made this dream possible.

## **CONTRIBUTION OF AUTHORS**

Dr. Rebecca Johnson was involved as an advisor throughout the research process, from concept refinement to survey design to review of the manuscripts. Dr. Robert Berrens served as a general resource on contingent valuation topics, provided advice during survey design and data analysis, and thoroughly reviewed the contingent valuation manuscripts (Chapters 2 and 3).

## TABLE OF CONTENTS

	<u>Page</u>
1. INTRODUCTION .....	1
1.1. Economic Trends in Coastal Oregon Communities .....	1
1.2. Recognition and Measurement of Tourism's Social Impacts .....	3
1.3. Growth in Applications of the Contingent Valuation Method .....	4
1.4. Dissertation Purpose and Structure .....	6
2. ESTIMATING THE ECONOMIC VALUES OF TOURISM'S SOCIAL IMPACTS .....	8
2.1. Introduction .....	9
2.2. Methods .....	17
2.3. Results .....	26
2.4. Discussion and Conclusion .....	32
3. CONTINGENT VALUATION OF RURAL TOURISM DEVELOPMENT, WITH TESTS OF SCOPE AND FORMAT STABILITY .....	42
3.1. Introduction .....	43
3.2. Background on Study Site and Survey Administration .....	52
3.3. Results .....	56
3.4. Discussion and Conclusions .....	73

## TABLE OF CONTENTS (Continued)

	<u>Page</u>
4. RESIDENT ATTITUDE ANALYSIS: A NEW MODEL AND TECHNIQUE .....	77
4.1. Introduction .....	78
4.2. The General and Specific Models .....	80
4.3. Background on Study Sites and Survey Administration .....	89
4.4. Methodology and Results .....	93
4.5. Discussion and Conclusion .....	105
5. SUMMARY .....	113
BIBLIOGRAPHY .....	117
APPENDIX: DESCRIPTIVE STATISTICS FOR SURVEY ITEMS .....	128



## LIST OF FIGURES

<u>Figure</u>	<u>Page</u>
1.1. Changes in Payroll for the Coastal Fishing, Wood Products, and Tourism Industries, 1983-1993 .....	2
2.1. Traditional and Economic Evaluation of Tourism's Social Impacts .....	11
2.2. Link Between Tourism, Traffic, and Noise/crime .....	19
2.3. Predicted WTP - Noise .....	31
3.1. Link Between Tourism, Traffic, and Noise/crime .....	54
3.2. Predicted WTP - Noise .....	63
4.1. The Relationship Between Values and Attitude Toward Tourism .....	81
4.2. Value-Attitude Model (VA-1) .....	96
4.3. Value-Attitude Model (VA-2) .....	99
4.4. Expectancy-Value Model (EV-1) .....	102
4.5. Expectancy-Value Model (EV-2) .....	104
4.6. Expectancy-Value Model (EV-3) .....	105

## LIST OF TABLES

<u>Table</u>	<u>Page</u>
2.1. Desires for Future Changes in Types of Tourism .....	16
2.2. Logit Models for the CV Scenarios .....	28
2.3. Description of Included Variables .....	29
2.4. Relationship Between Income and Predicted WTP for Noise Commodity Model .....	37
3.1. Treatment of No Votes, Housing Commodity Model .....	58
3.2. Logit Models for the CV Scenarios .....	61
3.3. Description of Variables Included in Tables 3.2. and 3.7. ....	62
3.4. Consistency of Votes (Assuming Vote Not Based on Good Presented in Scenario) .....	66
3.5. P-values for Various Scope Tests (25% Versus 50% Reduction in Congestion) .....	68
3.6. Vote Changes by Size of Bid Relative to Income (Congestion Scenario) .	72
3.7. Format Stability of Congestion Policy Models .....	74
4.1. Desires for Future Changes in Types of Tourism .....	92
4.2. Description of Observed Variables for EV and VA Models .....	97

## **PREFACE**

This dissertation is in manuscript format rather than the more traditional standard format. In accordance with Oregon State University Graduate School guidelines for the manuscript format, individual manuscripts are presented here verbatim. Material that is essential for readers of an individual manuscript, but redundant for readers of the whole dissertation, is retained. As a result, certain passages, figures, and tables are repetitive.

# **Assessment of Tourism's Social Impacts in Oregon Coast Communities Using Contingent Valuation, Value-Attitude, and Expectancy-Value Models**

## **1. INTRODUCTION**

This dissertation is motivated by the confluence of three trends. First, tourism has played an increasingly important role in rural communities on the Oregon coast and elsewhere in the state and nation. The absolute and relative growth of tourism is likely to continue into the foreseeable future. Second, there has been an increasing awareness that tourism generates negative social impacts, and that these impacts need to be identified and mitigated where appropriate if tourism is to maintain support within host communities. Third, contingent valuation has been refined and largely accepted as a method for measuring the economic value of non-market goods. These trends are described briefly in the following sections (additional detail is provided in relevant chapters).

### **1.1. Economic Trends in Coastal Oregon Communities**

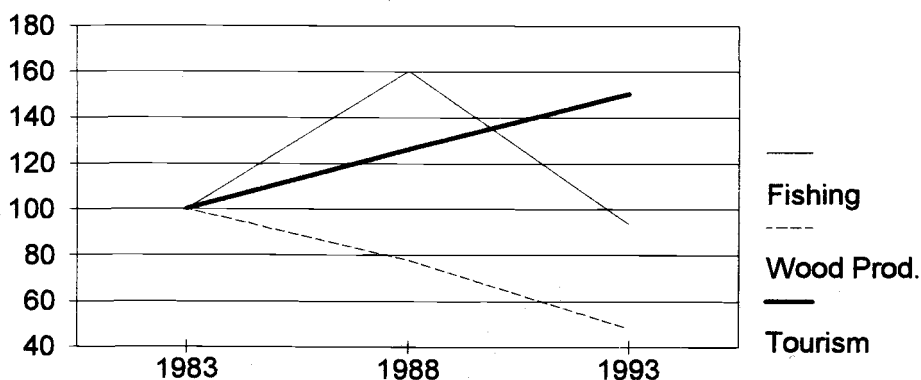
As in many other rural areas of the country, communities on the Oregon coast are undergoing demographic and economic transition (Davis and Radtke 1994). Young adults have been leaving in pursuit of educational and employment opportunities. At the same time, there has been an in-migration of older adults. One result of this aging of the coast population is a high percentage of personal income being generated by transfer payments and dividends, interest, and rent. The former contribute 24% of coastal personal income; the latter contribute 21% (Davis and Radtke 1994).

The wood products industry (including paper) contributes 16% of coastal personal income and is the largest single source of earned income. Tourism contributes 8%,

fishing 5%, and agriculture 4%. Responses to surveys of residents in the eight coast communities serving as case studies for this dissertation research illustrate the variability of tourism's importance at the local level; of all employed respondents, the percent working in the tourism industry ranged from 4% in Coos Bay to 60% in Lincoln Beach.

Of particular relevance here are the trends in sectors over time. Using payroll as a measure of industry size, Figure 1.1 shows that wood products underwent substantial decline during the ten-year period from 1983 to 1993. Overall, fishing also declined during this period. Conversely, tourism increased by roughly 50%. Although the wood products and fishing industries historically have fluctuated in response to changes in demand, regional supply constraints likely will prevent them from expanding in the near

Figure 1.1. Changes in Payroll for the Coastal Fishing, Wood Products, and Tourism Industries, 1983-1993



Notes: Fishing is based on SIC 09, forestry is based on SIC 24, and tourism is based on SIC 58 and 70 (SIC 08 was not included in forestry because 3 counties had insufficient firms to report data in at least one year). All payroll numbers are inflation-adjusted and show changes since 1983, a base year set at 100. Data are from the five wholly-coastal counties. Source: Oregon Employment Department (1983, 1988, 1993).

future. On the other hand, barring constraints resulting from resident dissatisfaction with management of tourism's impacts, it is likely that tourism will continue to expand<sup>1</sup>; it is a key industry in the regional strategies for four of the five wholly-coastal counties (Oregon Economic Development Department 1995).

## **1.2. Recognition and Measurement of Tourism's Social Impacts**

The second trend is the increase in recognition of tourism's social impacts, as well as the resulting improvements in measurement of these impacts and resident attitudes toward tourism. The concept of social impact encompasses a broad range of cultural, social, and physical changes associated with tourism development (c.f., Pearce 1989).<sup>2</sup> The present focus primarily is on changes in traffic congestion, noise and minor crime violations, and demand for low-income housing. Ap (1992b) provides an historical description of concern about, and measurement of, social impacts. In brief, these impacts were recognized as early as the 1960s (e.g., Forster 1964), but it was not until the mid to late 1970s that the issue generated a sizeable literature (e.g., Smith 1977; de Kadt 1979). It was in the late 1970s that empirical evaluations of perceived impacts and resident attitudes began appearing (e.g., Pizam 1978; Rothman 1978). Since that time, dozens of

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<sup>1</sup>Water supply has begun to constrain some residential development on the coast, but apparently it has not yet substantially affected tourism development.

<sup>2</sup>Impacts are generally grouped into three categories: economic, social, and environmental. Many physical impacts, such as pollution from visitor automobiles, are considered environmental. Other physical impacts, such as increased numbers of automobiles (i.e., traffic congestion), often are considered social. Category allocation often is inconsistent across studies; for this dissertation, the social category is used for changes in congestion, crime, and demand for low-income housing.

studies have appeared in the academic literature, with many more studies appearing in reports and other “grey” literature.

Concern about social impacts remains strong at both the community and academic levels. Coastal newspapers periodically report on tourism-related traffic congestion and crime, as well as what should be done to mitigate these impacts (e.g., Degerstrom 1995; Lanham 1994). In addition, social impact remains one of the most salient research topics within the tourism field (Hawkins 1993; Smith 1994). Current research priorities include (1) improving the conceptual, psychometric, and statistical sophistication of impact measurement and (2) developing indicators of impacts and attitudes that can be utilized in tourism monitoring and managerial processes.

### **1.3. Growth in Applications of the Contingent Valuation Method**

The third trend is the increasing use and acceptance of contingent valuation as a method for valuing non-market goods. Most goods and services are traded in relatively well-developed markets. The behavior of consumers in these markets (the amount of each good they consume at different prices) provides the information needed by economists to determine the willingness of consumers to pay for each good. This willingness-to-pay (WTP) is a measure of the economic value of the good (Peterson, Driver, and Brown 1990). However, many goods and services are not traded in markets; they are non-market goods. For example, many campsites on public land are free. Although consumers' WTP for these goods is generally positive, it can not be determined by behavioral reactions to changes in the price of the good since the price is set to zero.

Economists have developed techniques for measuring WTP for non-market goods. One of these techniques is the contingent valuation (CV) method, which presents

a hypothetical market to consumers. The behavioral intention reported in response to the hypothetical market is used in lieu of actual behavior as a basis for estimating WTP.

Though Ciriacy-Wantrup (1947) suggested using surveys to elicit values for non-market goods, Davis (1964) provided the first empirical application. However, it was not until the 1970s that CV began its rapid growth. Randall (1993:27) notes that

the CVM [CV Method] research program developed quite rapidly through the 1970s and 1980s. More and more scholars became involved: theory, methods, and techniques proliferated, and a fragile consensus began to emerge concerning what worked and what did not; refereed articles appeared in mainstream as well as specialized economics journals; and the CVM discourse community established patterns of communication with researchers in incentive theory, econometrics, psychology, and survey research.

As an applied and conceptual research field, CV continues to grow into the 1990s.

For example, a January 1995 bibliography (Carson et al. 1995) lists 2,131 CV-related books, journal articles, and reports; a similar bibliography from March 1994 (Carson et al. 1994) lists only 1,672. In ten months, the number of entries expanded by 459, a 27% increase. Executive Order 12291 of 1981, which required benefit-cost analysis of major U.S. federal agency actions, has contributed to the growth in CV applications (Smith 1993). Given the prospect that Congress may require all federal regulations to pass benefit-cost tests, CV applications likely will continue to increase into the future.

Berrens (1993:14-15) lists the following seven trends in the CV literature: a progression toward placing CV in a full utility-theoretic context, increasing econometric sophistication, increasing interdisciplinary collaboration, growing interest in transferring CV benefit estimates outside their original valuation contexts, growing debate over the appropriateness of CV for measuring non-use values, increasing number of evaluations of



CV's accuracy and performance, and expanding attention to the role and importance of protest responses.

#### **1.4. Dissertation Purpose and Structure**

The confluence of the first two trends necessitates identification and increased understanding of tourism's social impacts in coast communities in order to facilitate management of these impacts and maintenance of long-term community support. As discussed in Chapter 4, numerous studies have been undertaken to identify perceived impacts of concern to residents, as well as the factors that contribute to these resident perceptions and to attitudes toward tourism. However, most of these studies have been *ad hoc* in nature. Often, demographic measures, such as length of residence in the community, are used as explanatory variables. However, their power of explanation may lie in their role as indicators or surrogates for other variables, such as the level of importance a resident places on maintaining traditional community relationships. Therefore, one purpose of this research is to explore the more fundamental factors affecting attitudes. How do the values residents hold affect attitudes? Is tourism perceived to be consistent or inconsistent with these values, and can these perceptions explain attitudes? This exploration, presented in Chapter 4,<sup>3</sup> is intended to improve understanding of attitude formation and change, as well as identify management priorities for maintaining generally positive attitudes.

The confluence of all three trends provides another opportunity to explore tourism's impacts in a novel manner. Despite much progress in social impact

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<sup>3</sup>The chapters are ordered by date of completion, while this introductory section is ordered by flow of trends.

measurement within the tourism field, widely-accepted quantitative measures remain elusive. More importantly, measures that allow integration of economic and social impacts have not existed. Therefore, a second purpose of this research is to measure social impacts in an economic metric using the contingent valuation method (Chapter 2). This measurement can facilitate identification of the most desirable tourism development path with respect to maximizing economic value.

Although contingent valuation has been frequently evaluated and refined as a methodology, several methodological issues remain. The final purpose of this dissertation is to address, in Chapter 3, some of these issues.

Chapter 5 provides a summary of results and conclusions. Lastly, the Appendix contains question wording and descriptive statistics from the surveys used to collect the data that are the basis for this dissertation research.

**CHAPTER 2****ESTIMATING THE ECONOMIC VALUES OF  
TOURISM'S SOCIAL IMPACTS**

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## 2.1. Introduction

Significant contributions have been made recently to the understanding of tourism's actual and perceived social impacts and the factors that affect resident attitudes toward tourism. The improved understanding of these impacts facilitates their incorporation into the policy making process. Nonetheless, the methodologies used in this research do not measure social impacts in a metric consistent with those used to measure economic impacts (e.g., number of jobs or economic value). As a result, economic benefits and costs tend to dominate decisions concerning tourism planning and development (Choy 1991:326).

Tourism's non-economic impacts can be either positive or negative (c.f., Bull 1991:163 for a typology). However, on the whole they tend to be negative so their exclusion leads to overestimation of the net social benefits of tourism development. Because different tourism development paths generate different impacts, exclusion may also lead to selection of a path that is less socially desirable than alternative paths. Assuming that increasing social welfare is the goal of economic development programs, non-economic impacts should be valued and incorporated into the policy making process.

This article introduces the contingent valuation method as a technique for measuring the economic value of selected actual social impacts associated with tourism. The focus is on deriving two sets of economic value estimates. The first set comprises value estimates for the benefits of mitigation programs. These benefits can then be compared to program costs, thereby enabling policy makers to determine the absolute and relative desirability of these programs. The second set comprises value estimates for the

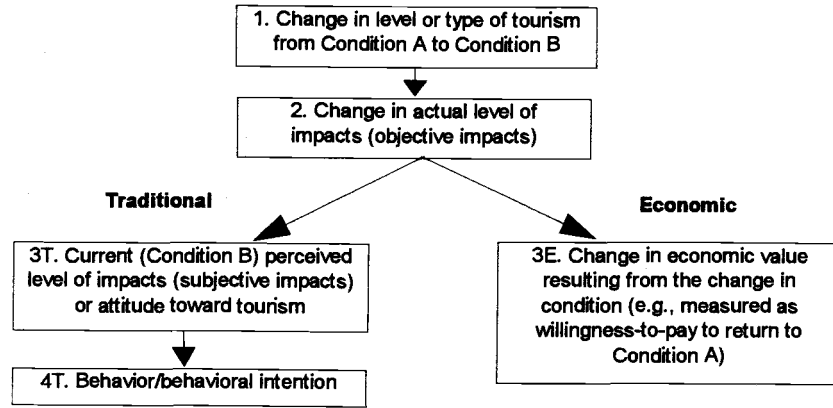
impacts themselves, independent of mitigation programs. Policy makers can incorporate these values into analyses of tourism's overall desirability.

### **2.1.1. Traditional Evaluation of Social Impacts**

During the past three decades, analysts have identified many impacts associated with tourism development, with economic impacts being perceived generally as positive and with social and environmental impacts being perceived generally as negative (Liu, Sheldon and Var 1987:18). Significant research (e.g., Ap 1992a; Belisle and Hoy 1980; Bystrzanowski 1989; Getz 1994; Lankford and Howard 1994; Liu and Var 1986; Liu, Sheldon, and Var 1987; Madrigal 1993; Milman and Pizam 1988; Pearce, Moscardo, and Ross 1991; Perdue, Long, and Allen 1990; Pizam 1978) has been undertaken to evaluate social impacts (defined broadly for purposes of this dissertation to include socio-cultural and socio-physical impacts). These studies generally focus on one or more of the relationships shown in Figure 2.1. For example, Crofts and Holland (1993) evaluated the association between level of tourism activity and a set of "quality of life" variables, including income and crime rates (relationship between steps 1 and 2).

Most research in this field has focused on how tourism development generates perceived impacts (relationship between steps 1 and 3T), including changes in perceived availability of recreational and entertainment opportunities; quality of police and fire protection; rate of crime; level of congestion (e.g., on roads and in downtown areas); and preservation of, and pride in, local culture. Several factors have been postulated, and/or empirically shown, to affect the relationship between step 1 and step 3T (for reviews see Getz 1994; King, Pizam and Milman 1993; Lankford and Howard 1994; Pearce 1989). These factors include degree of benefit from, and control of, tourism development; rate,

Figure 2.1. Traditional and Economic Evaluation of Tourism's Social Impacts



level, and type of tourism development (which affects level and nature of contact between tourists and residents); differences (e.g., economic, linguistic, and cultural) between tourists and residents; social and economic structure of resident community; and resident demographic characteristics, including length of residence.

Of particular relevance for this article is the development of attitude scores derived from factor analysis of scale responses (e.g., Lankford and Howard 1994). Attitude score may become the metric of choice for measurement of attitudes. However, despite significant advances in theory and methods, measurement of tourism's social impacts utilizing traditional evaluation remains constrained by the lack of a metric that is, as yet, broadly accepted or common to other impacts. A promising complement to traditional evaluation is the measurement of impacts using the metric of economic value.

### 2.1.2. Economic Evaluation Using Contingent Valuation

As illustrated in Figure 2.1., the focus of economic evaluation is the change in economic value resulting from the change in condition. If the move from Condition A to Condition B involves an increase in the number of tourists, the resulting change in actual social impacts will, overall, likely affect social welfare negatively. Therefore, the change in economic value for social impacts associated with this change in condition likely will be negative (the associated change in economic impacts likely will be positive). One measure of this change in value is willingness-to-pay to return to Condition A.

Because the attitude toward, or perceived impact of, tourism is not of interest *per se*, the economic metric and methods are fundamentally different from those used in traditional evaluation. The benefit of using the economic value metric is that, given the assumptions and limitations inherent in economic methodology, this metric is broadly accepted and can be used to integrate economic, social, and environmental impacts.

Most goods and services are traded in relatively well developed markets. The behavior of consumers in these markets (the amount of each good they consume at different prices) provides the information needed by economists to determine the willingness of consumers to pay for each good. This willingness-to-pay (WTP) is a measure of the economic value of the good (Peterson, Driver, and Brown 1990). However, many goods and services are not traded in markets; they are non-market goods. For example, many campsites on public land are free. Although consumers' WTP for these goods is generally positive, it can not be determined by behavioral reactions to changes in the price of the good since the price is set to zero.

Economists have developed techniques for measuring WTP for non-market goods. One of these techniques is the contingent valuation (CV) method, which presents a hypothetical market to consumers. The behavioral intention reported in response to the hypothetical market is used in lieu of actual behavior as a basis for estimating WTP. Some economists and psychologists question whether CV generates valid WTP estimates (e.g., Harris, Driver and McLaughlin 1989; Hausman 1993). Nonetheless, CV has gained wide acceptance as at least a "starting point" method for estimating WTP for non-market goods, provided rigorous survey research methods are followed and certain CV-specific methodological standards are met (Arrow, *et al.* 1993; Mitchell and Carson 1989). Moreover, many of the criticisms focus on respondent difficulty in valuing abstract and unfamiliar goods like preservation of biodiversity. The analysis presented here includes valuation of programs that historically have been provided by government agencies: reduction in traffic congestion through road construction, reduction in noise and crime through increased police patrol, and provision of low-income housing through development incentives. These programs are relatively concrete and familiar, and thus easier to value using CV.

CV has been utilized primarily to value recreation amenities, scenic quality, species and ecosystem preservation, and reductions in health risk (Freeman 1993). In the tourism field, Bull (1991:153) describes CV (direct questioning) as a method for estimating visitor WTP for attractions, and Bostedt and Mattsson (1995) describe an application to visitor WTP for forest characteristics in Sweden. This technique also has been applied to provision of goods and services at the community level, including reliable water supply (e.g., Howe and Smith 1994). However, a review of an exhaustive



CV bibliography with 1,670 entries (Carson, *et al.* 1994) produced very few studies, most unpublished, of CV valuation of traffic congestion, noise and crime, or low-income housing (e.g., Ahearn 1984; Research Chile 1991; Weinberger, Thomassen and Willecke 1991). More common are analyses of resident preferences for public funding of such programs (e.g., Ferris 1985; Schokkaert 1987).

Navarro and Carson (1991) stress the need for valuing local amenities and public goods, like reduced crime, and propose the use of CV as an analytical technique. Indeed, the technique is very flexible and can be applied to any good for which a suitable hypothetical market can be developed. What defines a suitable market? This and other CV issues are presented in the Methods section.

### **2.1.3. Tourism on the Oregon Coast**

The economies of Oregon coast communities historically have depended on natural resource industries like wood products, fishing, and agriculture. Although these industries remain important, the wood products and fishing sectors in particular have undergone recent declines due to harvest restrictions. Conversely, tourism and retiree immigration have played increasingly important roles in local economies. Transfer payments and dividends, interest, and rent are easily the largest contributors to personal income on the Oregon coast, representing 24% and 21%, respectively, of personal income (Davis and Radtke 1994). Their importance, which is greater for the coast than for the state or nation, reflects the large number of retirees living in the region.

The wood products industry (including paper) contributes 16% of coastal personal income, while tourism contributes 8%, fishing 5%, and agriculture 4% (Davis and Radtke 1994). Responses to surveys of residents in eight coast communities illustrate the

variability of tourism's importance at the local level; of all employed respondents, the percent working in the tourism industry ranged from 4% in Coos Bay to 60% in Lincoln Beach (the surveys are described in more detail in the Methods section).

Residents were asked in an open-ended format to list the most important perceived benefits and problems associated with tourism. Not surprisingly, the most important benefits are economic in nature, including the generation of jobs and local business opportunities. Some residents also noted that tourism development increases the number and types of facilities available to residents and that tourists bring new ideas into the community.

The problems are similar to those found in many tourism-dependent communities, yet are also partly due to the nature of local geography and type of tourism development. Highway traffic is by far the most commonly perceived problem, noted by 47% of the respondents. Most of the coast region is a relatively narrow strip of land between the Pacific Ocean to the west and the Coast Range mountains to the east. U.S. Highway 101 is the only main road that runs north-south, the primary route followed by tourists. In most areas Highway 101 comprises only one lane in either direction, and traffic is significantly slowed during tourists seasons by the high volume and presence of slow-moving recreational vehicles (RVs). This traffic can significantly increase travel time for residents.

Crime, reported as a problem by 14% of respondents, consists primarily of minor violations such as disorderly conduct by visitors. These minor violations are particularly disruptive to residents because they often occur at rented "vacation" homes located in residential areas. Additional reported problems include crowding in stores, bayfronts,

and other areas, as well as competition for parking spaces. As with traffic, the linear nature of most coast communities exacerbates the problems of crowding and lack of parking; there simply is no place to put all the people and cars.

Despite the tourism-related problems, the majority of residents believe that tourism has been positive for them individually and for their community. When asked their level of agreement with the statement "Overall, for me personally, the benefits of tourism outweigh the costs of tourism," 22% strongly agreed, 29% somewhat agreed, 23% were neutral, 11% disagreed, and 11% strongly disagreed. Agreement was greater in response to a similar statement focused on community, rather than personal, benefits. These beliefs contribute to desires for future increases in tourism development (Table 2.1). Increases are favored over decreases for all types of tourism, though short-term vacation rentals (less than one week) and day visitors are desired less than other types. Responses to other survey items suggest that this ranking is a result of the relatively low level of economic benefits and relatively high level of disruption associated with these two types of tourism.

Table 2.1. Desires for Future Changes in Types of Tourism

Type of Tourism	Desired Change in Next Five Years (percentage of respondents desiring each change)			
	Decrease	Stay about the same	Increase	Don't Care
Hotels/motels	3	55	38	5
Long-term vacation rentals	7	45	39	9
Short-term vacation rentals	17	43	33	7
Destination resorts	6	36	41	17
Day visitors	15	42	38	6

## 2.2. Methods

The contingent valuation questions comprised one component of a larger survey of Oregon coast resident attitudes toward tourism and economic development generally. The survey was administered to 945 residents in eight geographically and economically diverse communities during November and early December, 1993. In each community, a random sample of households was contacted by telephone using the random digit dialing technique. One member from each household was chosen at random, based on date of birth, to complete the telephone survey, which lasted an average of 15 minutes. All of the residents who completed the telephone survey were then asked to complete a mail survey. Half of those accepting the mail survey were sent a version focused on tourism while the other half were sent a version focused on more general issues. The principles of Dillman's (1978) "total design method" were followed in survey preparation, pretest, and administration.

A large number (873) of contacted households refused to participate in the telephone survey before hearing any details concerning the survey. High refusal rates are common in telephone surveys, due in part to the proliferation of telephone solicitation by businesses. Additional factors contributed to the high refusal rate for this survey. Many of the residential telephones in Oregon coast communities are located in second homes and vacation rentals. Potential respondents contacted in such locations did not consider themselves to be coast residents and therefore declined to participate in the survey. Moreover, the survey was conducted soon after an election, during which many residents were surveyed by public opinion pollsters. It is likely that many residents were at a point of "survey fatigue" that reduced willingness to participate in this survey.

High response rates were achieved once residents were engaged in the survey. Only 17 (1.8% of the 945 completes) terminated the telephone survey midway. Of those completing the telephone survey, 793 (84%) accepted the follow-up mail survey. Of these, 571 (72%) completed and returned the mail survey.

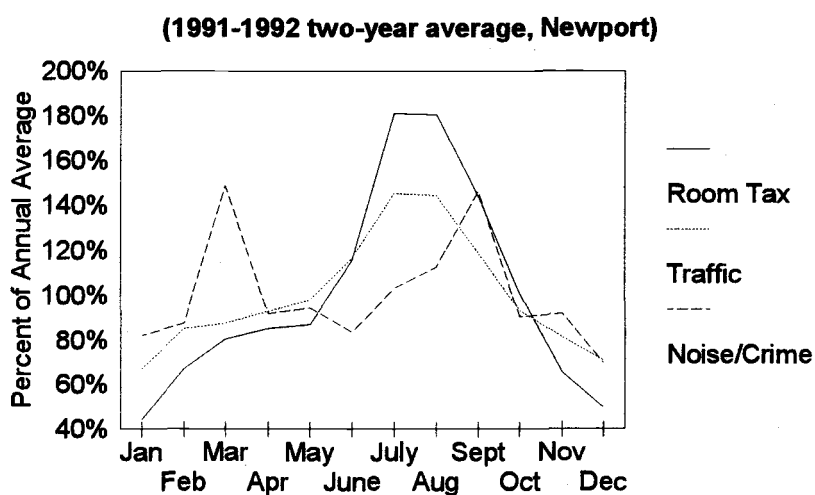
The potential for unit and item nonresponse bias has recently received significant attention in the CV literature (Dalecki, Whitehead, and Blomquist 1993; Mattsson and Li 1994; Mitchell and Carson 1989; Whitehead 1994). Nonresponse in CV surveys is often due to lack of interest in the subject matter. The responses to other survey questions and the low rate of midway terminations during the telephone survey, in which the CV scenarios were presented, suggest that this type of nonresponse bias was unlikely in this survey. However, the large number of telephone refusals and the modest number of refusals to accept or return the mail survey may lead to sample nonresponse or sample selection bias insofar as these refusals are associated with demographic or attitudinal variables that affect WTP, such as household income or attitude toward civic involvement. Identification of, and adjustment for, potential bias is discussed in the Results section.

Based on responses to the survey pretest, as well as discussion with community leaders, contingent valuation scenarios were created for programs that would (1) reduce traffic congestion on Highway 101 by 25% or 50% during busy periods (each respondent was presented either the 25% or the 50% reduction scenario), (2) reduce noise and minor crime by 30% during summer and holiday periods, and (3) provide low-income housing for all qualifying families in the community. These programs were designed to address, and value, problems that are associated with tourism to varying degrees.

The causal relationships between tourism development and actual impacts, such as a change in crime rates, remain subject to debate (e.g., Bystrzanowski 1989; Crotts and Holland 1993; Kelly 1993; Milman and Pizam 1988; Pearce 1989; Perdue, Long, and Allen 1987; Sheldon and Var 1984). Quantification of these relationships is necessary to convert WTP for the CV scenarios used in this study, which reflect changes in actual levels of impacts, into WTP estimates for tourism development (i.e., to identify the relationship between steps 1 and 3E in Figure 2.1). Such quantification is not the focus of the present article, which focuses on WTP for the scenarios.

Nonetheless, an indication of these relationships is presented here. Figure 2.2 illustrates the correlation between tourism on the one hand and traffic and noise/crime on the other. Based on the 24 monthly data points from 1991 to 1992, the Pearson product

Figure 2.2. Link Between Tourism, Traffic, and Noise/crime



Source: Room tax from City of Newport (receipts). Traffic from Oregon Department of Transportation (recorder north of Newport). Minor crime from Oregon Criminal Justice Services Division (vandalism, disorderly conduct, burglary, and liquor violations in Newport).

moment correlation coefficient between room tax and traffic is  $r=.976$ ; between room tax and noise/crime it is  $r=.373$ . The measures used are imperfect; however, the relationships shown in Figure 2.2, combined with corroborative evidence, indicate that tourism significantly contributes to traffic congestion and noise and minor crime in Newport. The relationships vary across communities, but generally show similar patterns. Finally, although tourism is by no means the sole cause of the lack of low-income housing, it appears to contribute by increasing housing costs and by attracting migrant workers who remain un- or under-employed and who are often eventually added to the list of those in need of low-income housing (Murphy (1985:99) describes a similar situation during the development of Disney World in Florida).

The following is a sample of the introduction to the CV section and the scenario used for congestion (see Appendix for the other scenarios).

In this next section, I would like to ask you about programs that would deal with issues that are problems in some coastal communities. These programs cost money. One way of paying for them is for your community to set up an independent fund paid for by all local households. Fund revenues would be used only for the program described--they will not go to the government.

These programs are hypothetical. However, your responses may be used to guide future policies so please answer the questions as carefully as possible.

The Oregon Department of Transportation (ODOT) is currently developing options for reducing traffic congestion along Highway 101 by, for example, adding turning or passing lanes. Some of the cost of these options may have to be paid by local communities.

We estimate that one option would reduce traffic congestion on Highway 101 by 25% during busy periods. This would mean there would be as little traffic congestion on 101 during August as there currently is during May.

If you had a chance to vote on a ballot measure that would reduce congestion on Highway 101 by this amount, but would require your household to pay \$ [X] each year, would you vote for or against it? As with all ballot measures, at least half of the voters would have to support the measure for it to pass.

- For the measure
- Against the measure
- Don't know

The reference months (August and May) were adjusted for each community to reflect differences in traffic patterns. The amount [X], which is known as the bid, was randomly varied across respondents to obtain responses to a range of program prices (based on pretest responses, a range of \$5 to \$1,000 per year was used for this survey).

The quality of results from CV surveys naturally depends on the quality of the survey itself. Certain principles should guide construction of CV surveys (Arrow *et al.* 1993; Mitchell and Carson 1989). These principles, and their application to this survey, are described below.

*The scenario should be understandable, plausible, and meaningful.* The presentation of questions in a form that is readily understandable to respondents is important for all types of survey research. However, respondents in CV surveys are faced with a task that is more difficult than in most surveys; they must not only identify their attitude toward an object, but must also make a decision concerning their preferences between the object and the stated amount of money. Moreover, the respondent is asked to make this decision with little previous experience because CV surveys are administered to value goods that are not generally bought and sold. To help ensure valid responses, researchers must present a "market" that is as familiar and plausible as possible. Familiarity reduces the cognitive burden while plausibility



increases respondent motivation to undertake the task of evaluating preferences to arrive at a valid response.

In this case, highway improvements were presented as a method for reducing congestion. The Oregon Department of Transportation was, in fact, developing options during the period of the survey administration. Because this process involved community meetings and received coverage in the local press, the CV scenario based on this process likely was understandable and plausible. In addition, a reminder that responses could affect policy was included to increase motivation.

*The good being valued should be well-defined.* The respondent must know exactly what she is being asked to "purchase" for the given price. Thus, it is important to specify as precisely as possible what the respondent will receive in exchange for the payment. In this case, the respondent will receive a 25% reduction in traffic congestion during busy periods. Reference months are provided to help the respondent identify the benefit provided by the program.

*An appropriate elicitation method should be used.* There are various methods for eliciting the respondent's willingness to pay for the good. The congestion scenario presented above uses the dichotomous choice (DC) method, which asks respondents simply to determine whether their WTP for the good is greater or less than a specific amount (the bid). This amount is varied across respondents and the resulting votes are regressed on the bid and other variables to estimate maximum WTP (see below in Results section). Other methods are also available, including the open-ended method in which respondents are asked to directly state their maximum WTP for the good.

The DC method is generally preferred for several reasons (Arrow *et al.* 1993). First, it is familiar insofar as it mirrors the manner in which consumers typically purchase goods. Second, it reduces the cognitive burden of respondents. They do not need to precisely identify their maximum WTP, but simply whether it is greater than the bid. For example, a consumer in a store must simply decide whether her WTP is greater than the price of the good; the same is true for the CV scenario. Third, the DC method reduces opportunities for strategic responses. That is, the respondent can not state WTP of very small or large numbers, as is possible with the open-ended method, in an effort to affect the provision of the good being valued.

Despite these strengths, the DC method suffers from some weaknesses. First, the DC method is susceptible to "yea-saying," a form of social desirability bias that may lead some respondents to vote for programs even when their WTP is less than the bid (Berrens 1993; Kanninen 1995). Second, it is statistically less efficient than the open-ended method because less information concerning maximum WTP is provided. Therefore, more observations are needed to achieve a given level of efficiency. Researchers can increase efficiency by carefully selecting the distribution of bids (the bid structure) (Cooper and Loomis 1992; Kanninen 1995).

*Rigorous survey research methods should be used.* The quality of results from CV surveys depends not only on the quality of the CV scenarios but also on the quality of the overall survey process. For this reason, rigorous survey design, sampling, and survey administration methods should be followed. In order to provide conservative WTP estimates, Arrow *et al.* (1993) recommend choosing conservative alternatives during

survey design. In addition, efforts should be made to reduce nonresponse and, during analysis, to adjust for any nonresponse bias.

Two transformations of vote responses were made before estimating WTP models. First, yes votes were constrained on the basis of income. The bids presented to respondents are random and reflect a wide range. As a result, some low income households are presented with large bids. In a small number of such cases, respondents vote yes even though it is unlikely that they would actually be able to pay such prices. Previous researchers have arbitrarily converted such yes votes to no votes or to missing values (Duffield and Neher 1991; Mitchell and Carson 1989:268). This process increases the proportion of no votes, thereby generating a conservative estimate of WTP. For this analysis, yes votes were constrained by converting all yes responses to no when the bid was greater than approximately 1% of reported household income (the precise percentage varied slightly because income categories were used in the survey). For example, any yes votes on bids of \$100 or more by members of households with income of less than \$10,000 per year would be converted to no. Of the 1,160 total yes votes on bids for the three different programs, 46 (4%) were converted to no votes.

Second, no votes were evaluated and excluded where appropriate. The goal of CV research generally has been to value a good, such as preservation of biodiversity, independent of the manner in which it is provided and paid for (the payment vehicle). Therefore, CV researchers typically follow up a no vote with questions designed to ascertain the reason for that vote. If the vote reflects that the good is not worth the bid amount to the respondent, the vote is treated as a valid no and retained in the sample. If the vote reflects a protest against the payment vehicle or other scenario component, the

vote is treated as a protest and excluded from the sample. Yes votes can be treated in a similar manner. However, scenario components tend to generate negative, rather than positive, externalities, so the focus has been on no votes.

The objective of the research reported here is twofold: to evaluate the desirability of specific mitigation programs and to estimate the economic values of reductions in actual social impacts associated with tourism development. Therefore, two models were developed for each scenario. The first is the "policy" model, which reflects valuation of the mitigation program (i.e., the reduction in congestion *and* the method for achieving the reduction). Because each program necessarily includes provisions for payment and implementation, the valuation of each program should include valuation of these components. Therefore, the policy model retains all no votes, including those reflecting protest against the payment vehicle or other scenario component.

Because respondents are valuing the scenario components, these components should be as specific and realistic as possible. However, some level of generality is necessary because actual mitigation programs will vary across communities. For example, the scenario presented a generic payment vehicle, payment by each household into an independent fund. Because the actual payment vehicle utilized for the program likely will negatively affect WTP, the gain in generality from using a generic payment vehicle is achieved at the possible expense of upward bias in value estimates.

The second model is for the "commodity," which reflects the value of the reduction in congestion independent of the method for achieving it. This model utilizes the traditional method of excluding protest no votes. However, the follow-up system used in this survey was more complete than is typically the case. For example, an initial

response that the no vote was due to opposition to taxes was followed by a question probing whether the opposition was due to an inability to pay more taxes, opposition in principle, attitudes toward government waste, or other reason. Responses to such additional questions were used to determine whether no votes should be excluded, retained, or, in a small number of cases, converted to yes votes (Lindberg, Johnson, and Berrens [1995] provide additional information regarding this system and other methodological issues relevant to this study). All follow-up questions were open-ended.

Despite this thoroughness, the evaluation of no votes remains imperfect. Some respondents vote no for a combination of reasons. In some cases, these multiple reasons were identified during the survey and no votes were allocated in a conservative manner (i.e., a manner favoring allocation as valid no votes). However, it is simply not possible to fully explore the reasons for no votes in the course of a telephone survey. Therefore, some imprecision remains in estimates of economic value for the commodity models.

### 2.3. Results

For dichotomous choice CV models, discrete choice analytical methods such as logit and probit are used to estimate the probability of a yes vote as a function of the bid and independent variables, like income, that are expected to influence willingness-to-pay. Initial logit and probit models were estimated for this analysis. The logit model generated a better fit for the data so it was used for the remaining analysis. The form of the logit model is:

$$\ln(P/(1-P)) = Z = \text{const} + \alpha\text{Bid} + X\beta + \epsilon$$

Where  $\ln$  is the natural logarithm,  $P$  is the probability of a yes vote,  $Z$  is an index,  $\text{const}$  is a constant,  $\alpha$  is the coefficient on the bid,  $X$  is a matrix of observations on a vector of

independent variables,  $\beta$  is a vector of coefficients on these independent variables, and  $\epsilon$  is the error term. The logit model assumes that the logistic curve is the cumulative probability function for  $Z$ ; the probit model assumes the normal curve. The equation for predicted WTP can then be derived by dividing through by the negative of  $\alpha$ :

$$\text{WTP} = (\text{const} + X\beta)/-\alpha$$

For models using the natural log of the bid, the WTP equation is modified as follows:

$$\ln(\text{WTP}) = (\text{const} + X\beta)/-\alpha$$

The linear model is used in this analysis because it generated a better fit than the log model. A derivation of the equation for WTP and the associated confidence intervals is presented in Cameron (1988; 1991). A more heuristic derivation is provided in Whitehead (1990).

An initial model for each scenario commodity and policy was estimated. Certain categorical variables, like education, can be incorporated either as interval variables or as sets of dummy variables. Both options, including log and exponential transformations of the interval variables, were tested and the option generating the higher adjusted pseudo  $R^2$  was used for further model refinement. Variables that were not significant at the  $p=.10$  level or better were dropped. The sets of dummy variables were retained only when they passed likelihood ratio tests at the  $p=.05$  level or better. Individual dummy variables within a set were retained even if they were not significant. Additional analysis showed that dropping insignificant individual dummy variables did not noticeably affect WTP estimates.

Results for the final logit models are shown in Table 2.2. Variables that were insignificant in, and thus omitted from, all models include employment status (whether

Table 2.2. Logit Models for the CV Scenarios

Variable	Noise		Congestion		Housing	
	Commod.	Policy	Commod.	Policy	Commod.	Policy
Constant	-2.87***	-3.33***	-1.44	-1.65*	-2.58***	-4.43***
BID (each x10 <sup>-2</sup> )	-.95***	-1.03***	-.67***	-.77***	-.92***	-1.03***
HHINC	.54***	.40***	.27***	.18***		.32***
INCINT	-.69***	-.53**				-.41*
PROPVAL	-.092*		-.20**		.18**	
DPROPVAL	.97*		1.77***	.84*		
RENTOWN			1.33**		-1.00**	
IMPORTANT	.48***	.43***	.69***	.54***	.94***	1.07***
WTOURISM					.35**	
YEARSRES					.019**	.015**
Dummies for highest level of education						
Completed high school					.48	.53
Completed vocational					2.01***	1.06*
Some college					.64	.46
Completed college					.69	.42
Completed graduate sch.					.82	.52
Dummies for age						
30-39			-.92*	-.86*	-1.04**	-.61
40-49			-.96*	-1.15**	.32	.72
50-59			-1.00*	-1.03**	-.37	-.27
60+			-.83	-.74	-.91*	-.63
Dummies for desired growth						
Stay as now			-1.25**	-.96*		
Grow a little			-1.15**	-.82		
Grow a lot			-1.50**	-.99*		
Dummies for communities						
Seaside				.42		
Cannon Beach				-.023		
Newport				.67		
Coos Bay				.17		
Bandon				-.36		
Dummies for order of CV scenarios						
Order 1			.63**	.48*		
Order 2			.45	.42		
G1		.18**				.20**
G8	.44***	.40***	.26**	.34***	.27**	.23*
CHILO			.24	.30		
<hr/>						
Maddala R <sup>2</sup> :	.29	.27	.26	.26	.28	.29
McFadden R <sup>2</sup> :	.25	.23	.23	.22	.25	.25
Adjusted for df:	.23	.22	.19	.18	.22	.22
Percent correct predict.:	72	72	73	73	76	72
<hr/>						
Mean willingness-to-pay:	144	105	194	109	173	116
95% CI for mean WTP:	118-171	85-126	152-236	82-136	141-205	94-138
Median WTP:	148	108	188	109	172	123
Population (adjusted)						
mean WTP:	130	95	186	110	161	103
Number of observations:	443	481	412	497	430	477

\*Significant at the p=.10 level or better, \*\* significant at the p=.05 level or better, \*\*\* significant at the p=.01 level or better.

employed and whether in tourism/retail sector), gender, and certain attitudinal measures (these were similar to the G1 and G8 variables that show significance). Table 2.3 describes each of the included variables. Goodness-of-fit measures for these models are above average for CV analysis. The pseudo  $R^2$  measures for logit analyses are different, and typically lower, than the  $R^2$  measure used in ordinary least squares (Hensher and Johnson 1981).

Table 2.3. Description of Included Variables

BID	The bid amount presented to respondent.
HHINC	8-category variable for total annual household income before taxes.
INCINT	Variable allowing piece-wise regression on income, with break at annual household income >\$40,000.
PROPVAL	8-category variable for assessed value of home. Set to zero for non-homeowners.
DPROPVAL	Dummy variable for respondents with assessed home value of \$200,000 or more.
RENTOWN	Dummy variable for home ownership. Renters=0, owners=1.
IMPORTANT	Response to question about importance of scenario-related issues: congestion, low-income housing, noise/minor crime. Not important=1, somewhat important=2, very important=3.
WTOURISM	Desire for future change in tourism industry. Decrease=-1, stay the same=0, increase=1.
YEARSRES	Length of residence in community, in years.
G1	Response to statement "Local government works hard to address the concerns of local residents" using five point Likert scale. Strongly disagree=1, strongly agree=5.
G8	Response to statement "Local government should take an active role in controlling negative aspects of tourism and other development." Same scale as G1.
CHILO	Respondents were presented one of two congestion scenarios: 25% reduction or 50% reduction in traffic on Highway 101 during busy periods. This variable is a dummy that takes on the value of 0 for the 25% reduction and 1 for the 50% reduction.
Base categories for each set of dummies:	
Education	Some high school.
Age	18-29 years.
Growth	Decrease in number of people living in community in the next five years.
Communities	Combined set of the small, adjacent communities of Gleneden Beach, Depoe Bay, and Lincoln Beach.
Order	The presentation order for the scenarios was varied. For the base, congestion was presented first. For Order 1, congestion was presented last. For Order 2, congestion was presented second.



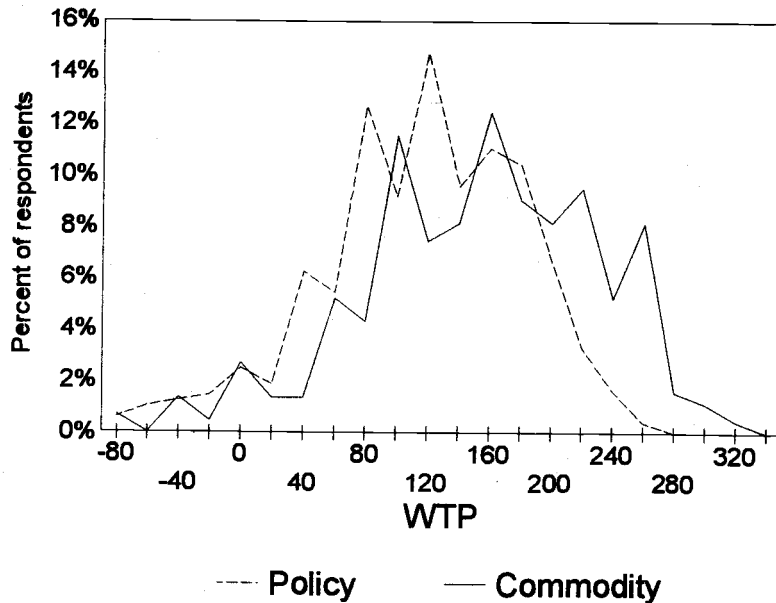
The logit model is converted to a WTP equation, here using the model for the noise commodity as an example:

$$\text{WTP}(\$) = -302.88 + 57.16*\text{HHINC} - 72.38*\text{INCINT} - 9.70*\text{PROPVAL} + 102.46*\text{DPROPVAL} + 50.77*\text{IMPORTANT} + 46.06*\text{G8}$$

The WTP equation is then used to calculate predicted values for WTP. The distributions of predicted WTP for the noise commodity and policy are shown in Figure 2.3. The difference in predicted WTP between these two models reflects the negative externalities incorporated into the policy values. Other researchers (e.g., Hanemann 1994:24; Carson 1991:137) have recognized the importance of these externalities as determinants of WTP. For example, Hampicke, *et al.* (1991) found that mean WTP for an environmental preservation program was 19 DM (\$13) per month when respondents were told the program would be implemented by a private foundation. Mean WTP decreased by 37% to 12 DM (\$8) per month when respondents were told the program would be implemented by the government. The sensitivity of WTP to program components can also be used to complement existing knowledge concerning the desirability of alternative programs designed to achieve a specific objective, such as reduction in congestion; CV surveys reflecting alternative programs can be conducted to identify the program that generates the greatest net economic value.

Some of the predicted values are negative in both models. This is a statistical artifact that can be avoided by specifying the bid variable in log, rather than linear, form. However, there are also conceptual reasons for negative WTP values, particularly in policy models. For example, a respondent may believe the program would involve an increase in tax payments to the government. Some respondents may place a negative

Figure 2.3. Predicted WTP - Noise



value on this externality that is greater than the positive value placed on the reduction in congestion; the net WTP will then be negative.

As noted above, refusals to initiate or complete the survey may lead to biased population estimates of WTP. This problem may be exacerbated by item nonresponse. A blank or "don't know" response for an independent variable was treated as a missing value, and the observation was omitted from the analysis. However, the majority of omitted observations were a result of "don't know" responses to the CV scenario itself or, in the case of the commodity models, omission of protest no votes. Because there was

relatively little item nonresponse for the independent variables, imputation procedures were not used. Rather, weights were used to correct for both unit and item nonresponse.

The distributions of the HHINC, INCINT, education, and age variables for the samples of observations included in the models were compared to the distributions for the population comprised of these communities. The population distributions were based on 1990 U.S. census data for the three counties in which the subject communities are located. Although inter-county differences were minimal, a weighted average was computed based on survey sample size from each county. There were modest, but noticeable, differences between the population distributions and the sample distributions, with the samples being on average somewhat older, better educated, and wealthier than the population. Therefore, population means for these variables (or related dummy variables) were substituted into the WTP equations to generate an adjusted mean WTP for each model. The adjusted means are shown below median WTP in Table 2.2.

#### **2.4. Discussion and Conclusion**

The results shown in Table 2.2 and the resulting WTP equations are consistent with a conceptual model of factors affecting WTP. First, the more important the problem is in the view of the respondent, and thus the greater the benefit from mitigation, the higher the WTP. Positive and significant coefficients for the IMPORTANT variables in all models support this relationship.

Second, the more *able* the respondent is to pay, the greater the *willingness* to pay. Positive and significant coefficients for HHINC support this relationship. However, the negative INCINT coefficient in some models suggests that WTP may level off and

actually drop at higher income levels. The coefficients for the property value variables are more difficult to interpret. On the one hand, property value measures ability to pay, thereby explaining positive signs. On the other hand, it is possible that respondents assume the fee will be paid through property taxes despite the explicit omission of taxes as a payment vehicle in the scenario wording. This belief will likely reduce WTP insofar as property owners feel they will bear a disproportionate burden for financing the program. This result illustrates the difficulty of discriminating between valuation of the commodity and valuation of the policy. Ideally, respondents objecting to the financing burden will be identified and excluded from the commodity model. In practice, full discrimination is not possible.

Third, WTP is lower for respondents who object to the program for one or more related reasons, including a belief that government should not be involved in the program, that the program will not achieve its goals, or that the program will generate negative externalities. The consistently positive and significant coefficients for G8 and, to a lesser degree, G1 show that WTP increases with the beliefs that government should take an active role and that it is responsive to citizen concerns.

The negative coefficients on the dummy variables for desired growth in the congestion models may reflect a concern by respondents that the congestion program will reduce traffic flow through, or stops in, their community. These measures will reduce business opportunities and thereby negatively impact future growth.

The coefficient on RENTOWN is significant in only two models, and has a different sign for each. For the housing commodity model, the sign may reflect a belief by home owners that development of low-income housing will negatively affect their

property value or the quality of their neighborhood. It may also reflect that renters might be more likely to benefit from the program.

Of course, other factors also affect WTP. One of these factors is the pride in, and willingness to sacrifice for, the community. Coefficients on several variables, including **IMPORTANT** and the growth dummies, likely reflect the expected benefit of the programs to others in the community. Similarly, the positive and significant signs on **YEARSRES** may be due to an increase in willingness to sacrifice for the community as length of residence increases. In addition, half of the sample completed general mail surveys that contained attitudinal questions regarding what makes the communities special. Models based on this subsample show positive and significant correlation between WTP and the stated importance of being able to count on neighbors to help out.

Some coefficients are more difficult to interpret. Education is only modestly significant and only for the housing models. The generally negative signs for age coefficients suggest that younger respondents (those in the base category of 18-29) have higher WTP than older respondents. The community dummy variables were significant in only one model, and then only as a set rather than individually. This result suggests that the role of local factors in generating support for programs is largely picked up in other variables, such as **IMPORTANT**. The dummy variables for order were only significant in the congestion models. The coefficients suggest that WTP increases as the scenario is presented later in the group. Finally, the coefficients on **CHILO** had the proper sign but were insignificant, suggesting that respondents either did not discriminate well between the two different levels of the good provided or did not highly value the incremental benefit provided by the 50% reduction program.

Although there are no previous analyses that are directly comparable, and can thus be used to evaluate the (convergent) validity of these results, the few similar analyses have produced generally similar results. For example, Ahearn (1984:84) estimated a mean annual household WTP of \$51 for a 33% reduction in the risk of burglary in Oregon communities. Adjusted for inflation, this equals \$74 in 1993 dollars. Navarro and Carson (1991:145) used an election returns method to infer that the average San Diego household is willing to pay \$138 per year to increase jail and court capacity in an effort to reduce crime. Weinberger, Thomassen and Willecke (1991) estimated mean household WTP of 30 DM per month (\$241 per year) for a noise reduction in German communities.

Hedonic price models have also been estimated for reductions in traffic congestion or noise. Based on such a model, Navarro and Carson (1991:142) estimate that San Diego households place a value of approximately \$580 to \$1,160 per year on a reduction of 5 to 10 minutes in one-way commute times. These latter results are higher than the WTP for congestion mitigation found here; however, the goods being valued are sufficiently different to preclude strong conclusions.

Like attitudinal surveys, CV surveys can be used to identify resident concerns about tourism or economic development generally. The significance of the coefficient on IMPORTANT shows that there is a strong correlation between concerns and CV-based estimates of WTP. Unlike attitudinal surveys, CV surveys can also be used in a benefit-cost analysis framework to evaluate the absolute and relative desirability of mitigation programs. For example, mean WTP can be multiplied by the number of households in the community to estimate the benefits of each mitigation program. These benefits can

then be compared to estimates of program costs to determine which programs generate positive net present value (NPV).

Any mitigation program will generate externalities. Therefore, mean WTP for the policy models, which reflect valuation in the presence of these externalities, should be used for benefit-cost analysis of the mitigation programs. The confidence intervals around mean WTP illustrate that uncertainty exists in estimating WTP (or any other dependent variable in a regression model). As a result, the desirability of the programs involves some uncertainty unless the programs generate (1) positive NPV even when using the lower bound or (2) negative NPV even when using the upper bound.

Considerations beyond net present value are likely to arise when evaluating the desirability of these programs. First, implementation of programs may require approval of bond measures. Because a majority of voters is necessary for approval, the median WTP, rather than the mean, should be used to evaluate the likelihood of approval. The median and mean are quite similar in these models, but this will not always be the case.

Second, assuming that residents will be asked to pay for the programs, which need not be the case, an important issue is *how* they should pay. Those projects undertaken at the community level likely will be financed by property taxes. Because both property taxes and WTP tend to be correlated with income, property taxes likely will be more efficient than a flat tax in terms of converting WTP to program finance. Table 2.4 shows how population (adjusted) WTP for the noise commodity model varies across income categories. WTP declines at the higher income levels because INCINT was significant and negative in this model. Despite this decline at high income levels, there is a positive correlation between income and WTP for the majority of the population.

Table 2.4. Relationship Between Income and Predicted WTP for Noise Commodity Model

Total Annual Household Income Before Taxes (\$)	Predicted WTP (\$)	Percent of Population
Less than 10,000	36	19%
10,000-19,999	93	24%
20,000-29,999	151	19%
30,000-39,999	208	14%
40,000-49,999	192	11%
50,000-74,999	177	10%
75,000-99,999	162	2%
100,000 or more	147	2%

Estimates of WTP are useful not only in evaluating the desirability of mitigation programs but also in evaluating the desirability of tourism development itself. Policy decisions concerning whether to pursue tourism development and, if so, of what type and level, have been made on the basis of comparing expected economic, social, environmental, and other impacts. These decisions have been complicated by the use of different metrics for different impacts. The CV technique enables analysts to measure some of the social and environmental impacts in an economic metric. For example, CV can be used to estimate WTP to mitigate tourism-related trampling of near-shore tidal areas or negative impacts on resident viewsheds. It should be stressed that not all impacts can be measured in economic terms. Nonetheless, by measuring some of these impacts in economic terms the analyst can provide important information to decision makers (Freeman 1993).



As an example, consider a benefit-cost analysis of current tourism development in one of the coast communities. Several tourism-related positive and negative impacts are identified, for which economic value estimates are needed. One of the negative impacts is increased traffic congestion. CV is employed to measure the economic value, in this case negative, of this impact. Several issues arise in such an analysis:

1) what is the appropriate measure of economic value? The theoretically appropriate measure is willingness-to-accept (WTA) for the decrement caused by transition from Condition A (e.g., no tourism) to Condition B (e.g., current tourism). However, the scenario necessary for obtaining WTA estimates would increase the cognitive burden for respondents substantially beyond the level necessary for the WTP surveys used here. Because WTP also generates conservative (i.e., lower bound) estimates of value, it is considered a desirable alternative to WTA (Arrow *et al.* 1993). The WTP estimate for the congestion commodity model (\$186), rather than the policy model (\$110), is appropriate because the desired estimate is the value of the change in the commodity.

2) the economic value estimates derived in this article are not for tourism *per se*, but for actual impacts that are only partly a result of tourism. Thus, the proportion of traffic congestion that is attributable to tourism must be identified. This proportion can then be used to estimate the value of traffic congestion caused by tourism development; for example, it can be used to convert WTP for a 25% or 50% reduction in traffic congestion to WTP for a condition of no tourism-induced traffic congestion.

3) the values of tourism's varied impacts need to be combined to estimate tourism's overall value. Previous CV research has shown that the total value of a good

tends to be less than the sum of the values of its components (Carson 1991). For example, the total value of preserving a species may be less than the sum of the on-site (e.g., wildlife viewing) and off-site (e.g., existence and bequest) values associated with that species. This is known as the problem of subadditivity. In the present case, if WTP were estimated for all tourism impacts individually, the sum of these estimates would likely overestimate the actual value for tourism as a whole.

However, the tendency toward overestimation will be offset to some degree by the practical impossibility of estimating WTP for all impacts. These other impacts can be significant. For example, McConnell (1977) estimated annual WTP of \$20 (\$48 in 1993 dollars) for reduced beach congestion. If the WTP of Oregon coast residents is at all similar, beach congestion represents a significant addition to the cost of tourism development; indeed, five percent of surveyed residents report that they have stopped going to beaches because of the number of tourists there. Unfortunately, the net effect of subadditivity and the omission of some values is indeterminate. Ideally, the WTP for tourism's combined social impacts would be valued in a single scenario, but the scenario for such a valuation likely would be unrealistic and too complex (Gregory, Lichtenstein, and Slovic 1993).

4) valuation of the different types and levels of tourism development would help communities determine their most desirable development path. Estimation of these values requires identifying a valuation function for the impacts. That is, WTP must be estimated for the different levels of actual impacts associated with different types and levels of development. Although the vast majority of studies have found a relationship between level of impact and WTP, CV critics maintain that WTP is not sufficiently

responsive to level of impact (Carson and Mitchell 1993). The insignificance of the coefficient on CHILO in the present study may signify that value does not differ between these two particular levels of congestion. However, it may also reflect an inability of the survey to pick up a difference that does exist.

Further refinement and application of CV to measure the economic value of tourism's social impacts will lead to more accurate benefit-cost analyses than have been possible to date. Because benefit-cost analyses are costly in both time and money, the development path prescribed by such analyses should be compared to those prescribed by alternative planning approaches, such as the LAC process (Stankey *et al.* 1985), that incorporate social values, as well as to results of *laissez-faire* approaches. Analysis of differences in outcomes resulting from each approach can be used to identify the most cost-effective approach for a given situation.

In conclusion, this article presents a technique for measuring the economic value of actual social impacts associated with tourism. Although CV results should be critically evaluated and complemented with results from other techniques where possible, the CV technique has been endorsed by economists as a valid method for estimating value (complementary methods include traditional evaluation and non-CV economic evaluation, using techniques such as discrete choice analysis [e.g., Adamowicz, Louviere, and Williams 1994]).

In the tourism field, CV analysis can provide value estimates that are useful both for practical decisions regarding the desirability of specific mitigation programs and for conceptual integration of tourism's varied impacts. This integration can guide fundamental development decisions regarding what type and level of tourism to target.

In addition, it can guide more specific decisions, such as selection of desired market segments. This selection historically has been based primarily on relative benefits, such as expenditure levels, across segments. Integration of varied impacts, and thus integration of benefits *and* costs, enables selection of market segments based on net benefits (i.e., benefits less costs). Insofar as tourism's sustainability is a function of net benefits, CV and related methods contribute to achieving sustainability by facilitating integration, and thus evaluation, of both positive and negative impacts.

**CHAPTER 3****CONTINGENT VALUATION OF RURAL TOURISM DEVELOPMENT,  
WITH TESTS OF SCOPE AND FORMAT STABILITY**

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### 3.1. Introduction

Oregon coast communities, and many others in rural America, are undergoing economic transition as employment in traditional natural resource industries declines while tourism and amenity-based development increases. Because tourism is consumed at the place of production, it tends to generate more social impacts than do other industries. Although these impacts have been recognized and evaluated (e.g., Lankford and Howard 1994), they have not been measured using an economic metric. Economists have valued the environmental impacts of development using an economic metric (Freeman 1993), and there is a parallel need to value the social impacts (Portney 1994). Data from such valuations can significantly reduce uncertainty in decision-making processes. However, the literature does not contain examples of valuation of social impacts associated with specific industries. This article presents results from a contingent valuation assessment of selected social impacts, including increased traffic congestion and minor crime, associated with tourism development on the Oregon coast.

The contingent valuation (CV) method uses surveys to elicit individual willingness-to-pay (WTP) or willingness-to-accept (WTA) for changes in non-market goods. The last decade has witnessed an explosion of CV applications motivated, in part, by the need to estimate WTP for environmental amenities to use in natural resource damage assessment. A "blue ribbon panel" has endorsed CV as a valid method for measuring WTP (Arrow et al. 1993), but some economists criticize the method (e.g., Hausman 1993). This article addresses some of the criticisms.

### 3.1.1. The Economic Theory Underlying Contingent Valuation

One representation of the consumer's constrained utility maximization problem is the expenditure function

$$e(\mathbf{p}, \mathbf{q}, U) = Y,$$

where  $\mathbf{p}$  is a vector of prices,  $\mathbf{q}$  is a vector of fixed public goods,  $U$  is a level of utility, and  $Y$  is the minimum income needed to maintain utility level  $U$ .<sup>4</sup> Given initial levels of  $\mathbf{p}_0$ ,  $\mathbf{q}_0$ ,  $U_0$ , and  $Y_0$  and subsequent levels  $\mathbf{q}_1$  and  $Y_1$ , the Hicksian compensating surplus (CS) can be represented by

$$CS = [e(\mathbf{p}_0, \mathbf{q}_0, U_0) = Y_0] - [e(\mathbf{p}_0, \mathbf{q}_1, U_0) = Y_1]$$

$$CS = Y_0 - Y_1.$$

The difference  $Y_0 - Y_1$  or, less commonly, the parallel Hicksian equivalent surplus difference, is the focus of CV. In the course of a CV survey, respondents are asked to determine the change in income that, when combined with a specified change in the level of a public good, leaves their utility unchanged. When CS is positive, the move from  $\mathbf{q}_0$  to  $\mathbf{q}_1$  represents an increment in the public good, and CS can be interpreted as the maximum WTP for the increment. When CS is negative, the move from  $\mathbf{q}_0$  to  $\mathbf{q}_1$  represents a decrement in the public good, and CS can be interpreted as the minimum WTA for the decrement.<sup>5</sup>

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<sup>4</sup>This presentation follows Mitchell and Carson (1989).

<sup>5</sup>The theoretically appropriate measure for the commodity models described below is WTA for a decrement. However, WTP is used in the analysis because scenarios based on WTP are more plausible and because WTP provides a conservative surplus estimate (Arrow et al. 1993).

In dichotomous choice CV, maximum WTP (hereinafter referred to simply as WTP) is not obtained directly from respondents. Rather, it is inferred through a discrete indicator variable  $I$  (Cameron 1988; 1991). Given a bid  $t_i$  presented to respondent  $i$

$$I_i = 1 \text{ if } WTP_i \geq t_i \text{ and } I_i = 0 \text{ otherwise.}$$

That is, the respondent will "purchase" the good presented in the CV scenario if her WTP is equal to or greater than the price (bid) presented for the good.

The probability of a Yes response ( $I_i = 1$ ) is modeled using logit or related (e.g., probit) approaches. In the logit approach, the probability of a Yes response,  $P_i$ , is given by

$$P_i = (1 + e^{-Z})^{-1}$$

where  $Z = (t_i\alpha + \mathbf{x}'_i\gamma + u_i)$ ,  $t_i$  is the bid,  $\mathbf{x}_i$  is a vector of observations on independent variables for respondent  $i$ , and  $u_i$  is the error term. The equation for predicted WTP is then derived by dividing  $\mathbf{x}'_i\gamma$  by the negative of  $\alpha$ :

$$\begin{aligned} WTP_i &= \mathbf{x}'_i\gamma / -\alpha \\ &= \mathbf{x}'_i\beta. \end{aligned}$$

Cameron (1991) also provides a procedure for obtaining confidence intervals around WTP estimates.

### 3.1.2. Commodity Versus Policy Models

Critics of contingent valuation (e.g., Diamond and Hausman 1993; Green, Kahneman, and Kunreuther 1994; Milgrom 1993) assert that CV is not a valid method for measuring economic value because, *inter alia*, responses to CV scenarios are not always based solely on the benefit of consuming the good that is ostensibly being valued.

Rather, No votes often are affected by the features of the scenario in which the good is



presented, and Yes votes often are affected by considerations beyond the personal benefits of consuming the good.<sup>6</sup>

Scenarios generally include the following features that might affect the probability of voting No:

- *Payment vehicle*: how payment will be made (e.g., an increase in taxes or in utility bills),
- *Payment distribution*: who must pay for implementation (e.g., all households in the community or only those using specific services),
- *Implementing agency*: who will provide the good (e.g., government, utility, or environmental organization),
- *Implementation method*: how the good will be provided (e.g., construction of passing lanes to reduce traffic congestion), and
- *Implementation rule*: the conditions under which the good will be provided (e.g., only with a majority of Yes votes in a referendum model).

If respondents object to one of the features in the CV scenario, they may vote No even if their WTP for the good being valued is greater than the bid.

Likewise, recent research (e.g., Kahneman and Knetsch 1992; Loomis, Lockwood, and DeLacy 1992; Schkade and Payne 1994; Stevens, More and Glass 1994) suggests that, in addition to the desire to consume the good itself, motivations for Yes votes include:

- The desire to contribute a "fair share,"
- The desire to contribute to a "good cause," and
- The concern about a broader issue, of which the good is representative (e.g., WTP to preserve the bald eagle may reflect a concern about environmental quality in general).

Critics maintain that WTP should be based solely on the good itself (the outcome). Because research indicates that WTP estimates can be affected by scenario

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<sup>6</sup>This discussion is based on the dichotomous choice elicitation format, but the issues are the same for other formats. The probability of a No vote is simply the converse of the probability of a Yes vote; a distinction is made here because these issues typically are treated separately.

features and "irrelevant" motivations, critics reject CV as a valid method for estimating economic value. Supporters of CV counter that "the standard view in economics [is] that decisions about what people value should be left up to them" (Hanemann 1994:33).

Theoretical justification for the role of scenario features as determinants of CV WTP estimates is well established (e.g., Hoehn and Randall 1987). Carson (1991:137) notes that the concept that "a public good does not have a value independent of its method of financing" goes back at least to Wicksell (1967). In essence, the view of Hanemann and others is that the CV decision making process is difficult, complex, and context-dependent, but so, too, are many other consumer decisions that are not rejected by economists. Therefore, these qualities of CV should not be used to reject the method.

This debate is important because WTP estimates may be influenced significantly by researcher assumptions concerning legitimate components of economic value insofar as these assumptions drive survey design and data analysis decisions. For example, Green, Kahneman, and Kunreuther (1994) found that a reminder of who would be asked to pay and how much money would be available for the program reduced mean WTP by 42% to 70%. Likewise, by decomposing WTP, Stevens, More, and Glass (1994) calculated that only \$18 of the mean WTP of \$38 should be considered existence value for the good in question (bald eagle restoration). The remaining WTP represented respondent valuation of general environmental quality and of fair share contribution.

To some extent, critics and supporters are discussing apples and oranges; the appropriate model of respondent behavior depends on the focus of the valuation exercise. For example, decision makers may want to know whether WTP for a program to reduce traffic congestion is greater than the cost of the program. The most analogous market in

this case is a bond measure. Yes votes for such measures are assumed to represent WTP greater than expected cost, regardless of whether that WTP is affected by program features or motivations other than personal benefits stemming from reduced congestion. In this case, CV responses should be taken at face value as a basis for estimating WTP (the issue is *whether* respondents would or would not pay). This case is the basis for the "policy" models described below. Individuals are valuing the proposed policy change in its entirety.

Alternatively, decision makers may desire an estimate of the (negative) value of increased traffic congestion that would arise from future increases in tourism-related traffic. This estimate could be compared with economic value estimates for economic and environmental impacts to determine whether, and how, to pursue tourism development. In this case, common in CV applications, the desired value estimate is for the decrement in quality *independent* of scenario features; the scenario is simply a necessary device for deriving the estimates. The issue becomes *why* respondents would or would not pay, and analysts typically use follow-ups to No votes to determine whether the vote resulted from objection to a scenario feature. These protest No votes are generally excluded when calculating WTP, which increases estimated WTP. This case is the basis for the "commodity" models described below.

Likewise, some studies have also included follow-ups to Yes votes to determine whether the vote resulted from valuation of the good itself or from other considerations, such as contributing to a good cause. This step decreases estimated WTP.

Follow-ups have been recommended as standard practice in CV studies (e.g., Arrow et al. 1993). However, there is a need to further refine these approaches in order

to more accurately isolate WTP for the good itself. Respondent votes generally are based on multiple considerations, and there is no current standard for allocating votes that reflect both "valid" and "invalid" considerations. Moreover, the simple follow-ups used in most studies may generate misleading information. In this article, two WTP estimates are derived for each scenario. The policy model incorporates respondent valuation of scenario features while the commodity model excludes such valuation. This exclusion is based on a more thorough system of No vote follow-ups than is typically utilized.

### 3.1.3. Scope

Another criticism in the CV literature is that responses are not adequately sensitive to changes in the scope of the good<sup>7</sup> (Boyle et al. 1994; Desvousges et al. 1993; Kahneman 1986). For example, Boyle et al. found no significant difference in WTP to prevent three different levels of waterfowl deaths: 2,000, 20,000, and 200,000 (which represented from much less than 1% to about 2% of the specific waterfowl population described). Boyle et al. present five possible explanations for this finding, including that marginal utility for preventing bird deaths is zero because preferences are flat over the range of bird deaths considered; marginal utility is greater than zero, but is too small to detect over the range of bird deaths prevented; and that marginal utility is positive and is not trivial, but CV is not able to measure the difference in values. Although the authors note that "[a]ll of the propositions are intuitively plausible" (1994:80), critics tend to

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<sup>7</sup>As used here, scope sensitivity is equivalent to Carson and Mitchell's (1995) recently-introduced term "component sensitivity." The specific focus of the present analysis is quantitative nesting, as opposed to categorical nesting.

focus on the third proposition and conclude that CV is unable to generate valid estimates of WTP.

However, the studies used by CV critics in support of their argument have themselves been strongly criticized (c.f., Carson and Mitchell 1993; Hanemann 1994; Smith 1992). Moreover, the vast majority of CV studies have generated significant differences in WTP across good levels (Hanemann 1994). It would, therefore, be premature to reject CV on the basis of failure to pick up scope-related effects. This article contributes to the literature with an evaluation of WTP for different levels of congestion mitigation and an evaluation of the potential sensitivity of conclusions to the type of scope test utilized.

#### **3.1.4. Format Stability**

The final issue considered here is whether WTP estimates are stable across CV survey formats (in-person, telephone, or mail). The strengths and weaknesses of alternative survey formats have been evaluated by various reviewers (e.g., Arrow et al. 1993; Mitchell and Carson 1989), who generally discourage use of mail surveys due to the potential for unacceptable nonresponse bias. However, there has been surprisingly little empirical evaluation of the stability of WTP estimates across formats.

Schulze et al. (1983) found estimates of mean WTP from mail surveys to be twice as high as those from personal interviews. However, the difference is not statistically significant due to the small sample size and large standard deviations. Moreover, the mail survey WTP estimate may be biased upward as a result of low response rates; motivation to complete and return the survey likely is related to WTP, so that respondent WTP is greater than nonrespondent WTP (Mitchell and Carson 1989).

Similarly, in a study of WTP for improvement in wildlife and fisheries resources, Loomis and King (1994) found that WTP from mail surveys was generally greater than WTP from hybrid mail-telephone surveys. This pattern persisted despite correction for demographic sample biases and for variables reflecting attitudes and behavior toward the good being valued. Loomis and King suggest that the pattern may result from unmeasured differences in important attitudes, such as those relating to government programs and taxes.

In a study of boater WTP for wetlands, Mannesto and Loomis (1991) found that mean WTP from mail surveys was less than that from in-person surveys. Due to the much lower response rate for the mail survey (24%) than for the in-person survey (97%), the difference in mean WTP likely was conservative. However, given the realized sample, the significance of the difference in means depended entirely on whether the in-person surveys were conducted by experienced or less experienced interviewers. Mean WTP from "less experienced" in-person surveys was almost the same as that from mail surveys; both were significantly different from mean WTP from "experienced" in-person surveys. Mannesto and Loomis conclude that this difference may result from an interviewer bias associated with the more enthusiastic experienced interviewer. In addition, Mannesto and Loomis postulate that respondents are more likely to vote No during mail surveys than during in-person surveys because of the greater time available to evaluate one's budget constraint. Results from Whittington et al. (1992) support this relationship between time and stated WTP.

In simplified terms, respondent behavior can be characterized as falling into one of three categories. First, regardless of the amount of available time, the respondent fully

evaluates her preferences and budget constraint before voting. Second, regardless of the amount of available time, the respondent does not fully evaluate her preferences and budget constraint, but rather reverts to an alternate basis for responding to the scenario. One of these bases is to provide an answer that is perceived as desired by the interviewer and/or the sponsoring agency. The likelihood of reverting to an alternate basis may be affected by interviewer behavior. Third, when provided sufficient time, the respondent fully evaluates her preferences and budget constraint, but she reverts to an alternate basis when provided insufficient time.

Insofar as the first case generates true WTP, mail surveys can generate more accurate WTP estimates than non-mail surveys when either the second or third cases occur. In the second case, interviewer bias is avoided because mail surveys do not involve interviewers. In the third case, mail surveys provide the time needed to fully evaluate preferences and the budget constraint. This article presents analysis of format stability with particular attention to evaluation of the budget constraint.

### **3.2. Background on Study Site and Survey Administration**

The economies of Oregon coast communities historically have depended on natural resource industries like wood products, fishing, and agriculture. While these industries remain important, the wood products and fishing sectors in particular have undergone recent declines due to harvest restrictions. Conversely, tourism and retiree immigration have played increasingly important roles in local economies. Transfer payments and dividends, interest, and rent are the largest sources of personal income (Davis and Radtke 1994). Their importance, which is greater for the coast than for the state or nation, reflects the large number of retirees living in the region.

Although tourism generates jobs and personal income, it also can generate negative social and socio-physical impacts, including traffic congestion; noise and minor crime (e.g., disorderly conduct); and crowding in stores, bayfronts, and other areas. Based on responses to the survey pretest, as well as discussion with community leaders, contingent valuation scenarios were created for programs that would (1) reduce traffic congestion on Highway 101 by 25% or 50% during busy periods (each respondent was presented either the 25% or the 50% reduction scenario), (2) reduce noise and minor crime by 30% during summer and holiday periods, or (3) provide low-income housing for all qualifying families in the community.<sup>8</sup> These programs were designed to address problems that are associated with tourism to varying degrees.

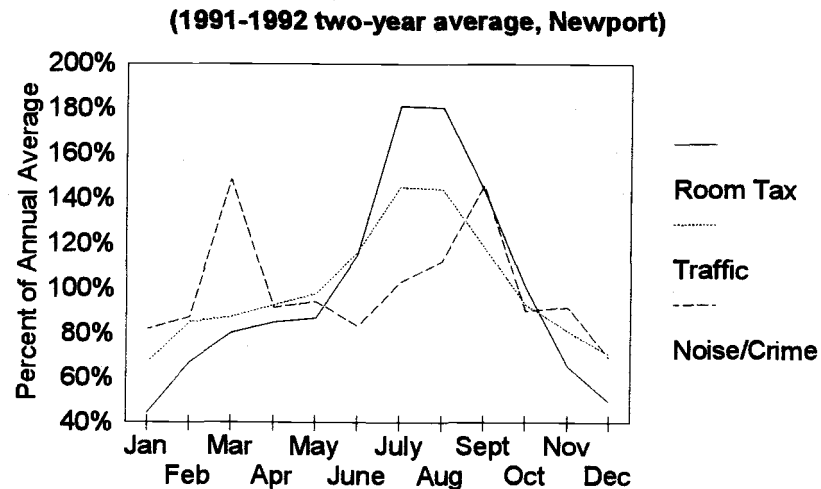
The causal relationships between tourism development and impacts, such as a change in crime rates, remain subject to debate (Crotts and Holland 1993). Nonetheless, an indication of these relationships is presented here. Figure 3.1 illustrates the correlation between tourism on the one hand and traffic and noise/crime on the other. Based on the 24 monthly data points from 1991 to 1992, the Pearson product moment correlation coefficient between room tax and traffic is  $r=.976$ ; between room tax and noise/crime it is  $r=.373$ . The measures used are imperfect; nonetheless, the relationships shown in Figure 3.1, combined with corroborative evidence, indicate that tourism significantly contributes to traffic congestion and noise and minor crime in Newport. The relationships vary across communities, but generally show similar patterns. Finally, although tourism is by no means the sole cause of the lack of low-income housing, it appears to contribute by increasing housing costs and by attracting migrant workers who

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<sup>8</sup>The text of the CV scenarios and other survey questions is in the Appendix.



Figure 3.1. Link Between Tourism, Traffic, and Noise/crime



Source: Room tax from City of Newport (receipts). Traffic from Oregon Department of Transportation (recorder north of Newport). Minor crime from Oregon Criminal Justice Services Division (vandalism, disorderly conduct, burglary, and liquor violations in Newport).

remain un- or under-employed (Murphy (1985) describes a similar situation during the development of Disney World in Florida).

The principles of careful and conservative CV survey design and administration were followed (e.g., Arrow et al. 1993; Mitchell and Carson 1989). The dichotomous choice referendum method was used to elicit WTP. Each survey contained all three scenarios, whose order was randomized across respondents. In each scenario respondents were presented with a bid that was randomly selected from a group of 16 values in the range of \$5 to \$1,000 per household per year.

The CV questions comprised one component of a larger survey of resident attitudes toward tourism and economic development generally. The survey was

administered to 945 residents in eight geographically and economically diverse communities during November and early December, 1993. In each community, a random sample of households was contacted by telephone using the random digit dialing technique. One member from each household was chosen at random, based on date of birth, to complete the telephone survey, which lasted an average of 15 minutes.

Residents who completed the telephone survey were asked to complete a mail survey. Half of those accepting the mail survey were sent a tourism version while the other half were sent a version focused on more general issues. The principles of Dillman's (1978) "total design method" were followed in survey preparation, pretest, and administration.

A large number (873) of contacted households refused to participate in the telephone survey before hearing any details. High refusal rates are common in telephone surveys, and specific factors increased the refusal rate for this survey. For example, many of the residential telephones in the communities are located in second homes and vacation rentals. Potential respondents contacted in such locations did not consider themselves to be residents and therefore declined to participate in the survey. High response rates were achieved once residents were engaged in the survey. Only 17 (1.8% of the 945 completes) terminated the telephone survey midway. Of those completing the telephone survey, 793 (84%) accepted the follow-up mail survey. Of these, 571 (72%) completed and returned the mail survey.

The potential for unit and item nonresponse bias has recently received significant attention in the CV literature (e.g., Dalecki, Whitehead, and Blomquist 1993; Mitchell and Carson 1989). Nonresponse in CV surveys is often due to lack of interest in the subject matter. The responses to other survey questions and the low rate of midway

terminates during the telephone survey, in which the CV scenarios were presented, suggest that this cause of nonresponse bias was unlikely. However, the large number of telephone refusals and the modest number of refusals to accept or return the mail survey may lead to sample nonresponse or sample selection bias insofar as these refusals are associated with demographic or attitudinal variables that affect WTP. Identification of, and adjustment for, potential bias is discussed in the next section.

### **3.3. Results**

#### **3.3.1. Policy and Commodity Models**

Two models were developed for each scenario. The first is the policy model, which reflects valuation of the mitigation program (i.e., the reduction in congestion *and* the method for achieving it). Each program necessarily includes provisions for payment and implementation, so the valuation of each program includes valuation of these components. Therefore, all No votes are retained in the policy model. Because respondents are valuing the scenario components, these components should be specific and realistic. However, some level of generality is necessary because actual mitigation programs will vary across communities. For example, the scenario presents a generic payment vehicle, payment by each household into an independent fund. Because the actual payment vehicle (e.g., a property tax) utilized for the program may negatively affect WTP, the gain in generality from using a generic payment vehicle is achieved at

the possible expense of upward bias in value estimates. This bias may be moderated insofar as some respondents may have assumed a specific payment vehicle.<sup>9</sup>

The second model is for the commodity, which reflects the value of the good (e.g., a reduction in congestion) independent of the method for achieving it. This model utilizes the traditional method of excluding protest No votes. However, the follow-up system used in this study was more thorough than is typically the case. For example, 431 respondents voted No for the housing scenario (Table 3.1). These respondents were asked a first follow-up question: "And why would you vote against the measure?" Fourteen responses to this question were classified by interviewers as reflecting opposition to government programs.<sup>10</sup> Each of the fourteen respondents was then asked a second follow-up question: "If this program was managed by a group not associated with the government, would you vote for the program?" For the six respondents saying No, the original No votes were retained. For the six respondents saying Yes, the original No votes were converted to Yes votes. For the two respondents saying "don't know," the original No votes were excluded from the sample. CV surveys typically involve only one follow-up question. As shown at the bottom of Table 3.1, the information gained from the second follow-up question led to substantially fewer exclusions and more

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<sup>9</sup>Responses to follow-up questions indicate some respondents assumed a property tax.

<sup>10</sup>When uncertain about classification, interviewers transcribed responses verbatim. These responses were later classified by a member of the research team. In the housing scenario, two such responses were classified as "opposition to government." This is the cause of the discrepancy between the figure of 14 cited in the text and the figure of 16 in Table 3.1.

Table 3.1. Treatment of No Votes, Housing Commodity Model

Reason for No Vote (first follow-up)	Number Retained as No	Number Converted to Yes	Number Excluded <sup>1</sup>
Housing is not a problem	70	0	0
A problem, but not worth cost	24	0	0
Can't afford it	141	0	0
Opposed to taxes/new taxes	21	0	33
Opposed to government	6	6	4
Should not have to pay/ not my responsibility	15	2	15
Would not work/would cause more problems than solve	13	6	54
Other	0	0	15
Don't know	0	0	6
Total	290	14	127
Total with typical treatment (only one follow-up)	235	0	196

<sup>1</sup>The large number of excluded no votes resulted from the tendency of interviewers to classify the first follow-up responses into the "other" category. The verbatim responses were recorded and later used to re-classify most of the observations into one of the preceding categories. However, the second follow-up question was not asked in such cases; without additional information, no votes were excluded.

classifications as No and Yes votes. This process reduced the loss of data from exclusion and provided more accurate estimation of WTP for the commodity.

Prior to model estimation, Yes votes were constrained on the basis of income.

The bids presented to respondents were random and reflected a wide range. As a result,

some low income households were presented with large bids. In a small number of such cases, respondents voted Yes even though it was unlikely that they would actually be able to pay such prices. Previous researchers have converted such Yes votes to No votes or to missing values (e.g., Duffield and Neher 1991; Mitchell and Carson 1989). This process increases the proportion of No votes, thereby generating a conservative estimate of WTP. For this analysis, Yes votes were constrained by converting all Yes responses to No when the bid was greater than approximately 1% of reported household income (the precise percentage varied slightly because income categories were used in the survey). Of the 1,160 total Yes votes on bids for the three different programs, 46 (4%) were converted to No votes. Analysis of unconstrained WTP models indicates that the income constraint reduced estimated mean WTP by approximately 20%.<sup>11</sup>

Several sets of models were evaluated, with the alternative generating the better fit to the data (using the criteria of adjusted pseudo  $R^2$ ) used for further model development. On this criterion, the logit formulation was chosen over the probit formulation and linear specification was chosen over logarithmic specification. Several categorical variables, such as education, can be modeled either as interval variables or as sets of dummy variables. Models were evaluated with each alternative, including logarithmic and exponential transformations of the interval form. Lastly, variables that

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<sup>11</sup>The small percentage of votes converted had a relatively large impact on mean WTP because these votes were in response to large bids. The results described below in the Format Stability section support the use of this income constraint; 32% of respondents whose congestion scenario bid was greater than 1% of reported annual household income changed their Yes vote to No when provided the opportunity to do so in the follow-up mail survey. The conversion of all Yes votes in this category is consistent with the recommendation of Arrow et al. (1993) to be conservative in CV design and analysis.

were insignificant at the .10 level were dropped from the model. The two exceptions to this rule are the CHILO variable (described below) and individual dummy variables contained within a set that showed significance using a likelihood ratio test. Additional analysis showed that dropping insignificant individual dummy variables did not noticeably affect WTP estimates.

Results for the final logit models are shown in Table 3.2. Variables that were insignificant in, and thus omitted from, all models include employment status (whether employed and whether in tourism or retail sector), gender, and certain attitudinal measures (these were similar to the G1 and G8 variables that show significance). Table 3.3 describes each of the included variables. Goodness-of-fit measures for these models are above average for CV analysis.

The logit models were converted to WTP equations, here using the model for the noise commodity as an example:

$$\text{WTP}(\$) = -302.88 + 57.16*\text{HHINC} - 72.38*\text{INCINT} - 9.70*\text{PROPVAL} + \\ 102.46*\text{DPROPVAL} + 50.77*\text{IMPORTANT} + 46.06*\text{G8}$$

The WTP equation was then used to calculate predicted WTP values. The distributions of sample predicted WTP for the noise commodity and policy models are shown in Figure 3.2. The difference in predicted WTP reflects the valuation of scenario features that was incorporated into the policy values. Some predicted values are negative in both models. This is a statistical artifact that can be avoided by specifying the bid variable in logarithmic, rather than linear, form. However, there are also conceptual reasons for negative WTP values, particularly in policy models. For example, a respondent may believe the program would involve an increase in tax payments to the government. She

Table 3.2. Logit Models for the CV Scenarios

Variable	Noise		Congestion		Housing	
	Commod.	Policy	Commod.	Policy	Commod.	Policy
Constant	-2.87***	-3.33***	-1.44	-1.65*	-2.58***	-4.43***
BID (each x10 <sup>2</sup> )	-.95***	-1.03***	-.67***	-.77***	-.92***	-1.03***
HHINC	.54***	.40***	.27***	.18***		.32***
INCINT	-.69***	-.53**				-.41*
PROPVAL	-.092*		-.20**		.18**	
DPROPVAL	.97*		1.77***	.84*		
RENTOWN			1.33**		-1.00**	
IMPORTANT	.48***	.43***	.69***	.54***	.94***	1.07***
WTOURISM					.35**	
YEARSRES					.019**	.015**
Dummies for highest level of education						
Completed high school					.48	.53
Completed vocational					2.01***	1.06*
Some college					.64	.46
Completed college					.69	.42
Completed graduate sch.					.82	.52
Dummies for age						
30-39			-.92*	-.86*	-1.04**	-.61
40-49			-.96*	-1.15**	.32	.72
50-59			-1.00*	-1.03**	-.37	-.27
60+			-.83	-.74	-.91*	-.63
Dummies for desired growth						
Stay as now			-1.25**	-.96*		
Grow a little			-1.15**	-.82		
Grow a lot			-1.50**	-.99*		
Dummies for communities						
Seaside				.42		
Cannon Beach				-.023		
Newport				.67		
Coos Bay				.17		
Bandon				-.36		
Dummies for order of CV scenarios						
Order 1			.63**	.48*		
Order 2			.45	.42		
G1		.18**				.20**
G8	.44***	.40***	.26**	.34***	.27**	.23*
CHILO			.24	.30		
<hr/>						
Maddala R <sup>2</sup> :	.29	.27	.26	.26	.28	.29
McFadden R <sup>2</sup> :	.25	.23	.23	.22	.25	.25
Adjusted for df:	.23	.22	.19	.18	.22	.22
Percent correct predict.:	72	72	73	73	76	72
<hr/>						
Mean willingness-to-pay:	144	105	194	109	173	116
95% CI for mean WTP:	118-171	85-126	152-236	82-136	141-205	94-138
Median WTP:	148	108	188	109	172	123
Population (adjusted)						
mean WTP:	130	95	186	110	161	103
Number of observations:	443	481	412	497	430	477

\*Significant at the p=.10 level or better, \*\* significant at the p=.05 level or better, \*\*\* significant at the p=.01 level or better.



Table 3.3. Description of Variables Included in Tables 3.2 and 3.7

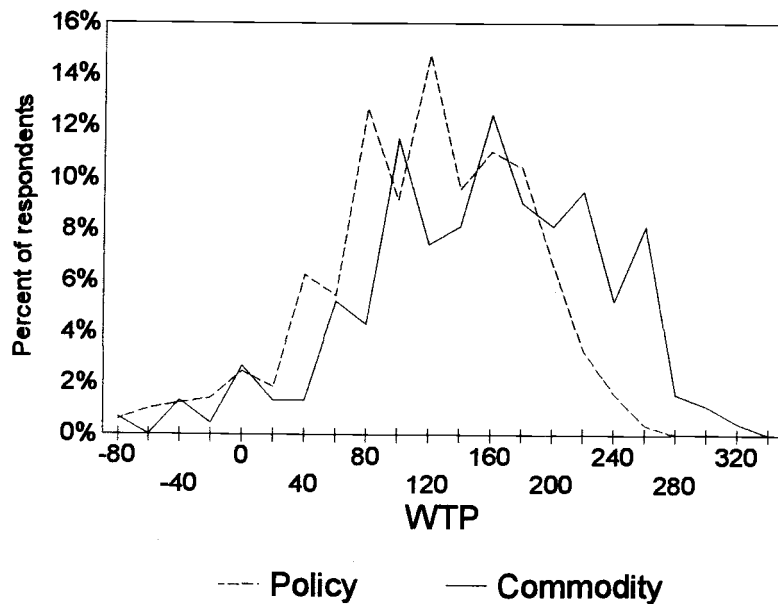
BID	The bid amount presented to respondent.
HHINC	8-category variable for total annual household income before taxes.
INCINT	Variable allowing piece-wise regression on income, with break at annual household income >\$40,000.
PROPVAL	8-category variable for assessed value of home. Set to zero for non-homeowners.
DPROPVAL	Dummy variable for respondents with assessed home value of \$200,000 or more.
RENTOWN	Dummy variable for home ownership. Renters=0, owners=1.
IMPORTANT	Response to question about importance of scenario-related issues: congestion, low-income housing, noise/minor crime. Not important=1, somewhat important=2, very important=3.
WTOURISM	Desire for future change in tourism industry. Decrease=-1, stay the same=0, increase=1.
YEARSRES	Length of residence in community, in years.
G1	Response to statement "Local government works hard to address the concerns of local residents" using five point Likert scale. Strongly disagree=1, strongly agree=5.
G8	Response to statement "Local government should take an active role in controlling negative aspects of tourism and other development." Same scale as G1.
CM3	Response to statement "If I had the opportunity, I would move away from this community." Same scale as G1.
CM5	Response to statement "Residents sometimes need to make personal sacrifices for the good of the community." Same scale as G1.
CHILO	Respondents were presented one of two congestion scenarios: 25% reduction or 50% reduction in traffic on Highway 101 during busy periods. This variable is a dummy that takes on the value of 0 for the 25% reduction and 1 for the 50% reduction.

Base categories for each set of dummies:

Education	Some high school.
Age	18-29 years.
Growth	Decrease in number of people living in community in the next five years.
Communities	Combined set of the small, adjacent communities of Gleneden Beach, Depoe Bay, and Lincoln Beach.
Order	The presentation order for the scenarios was varied. For the base, congestion was presented first. For Order1, congestion was presented last. For Order2, congestion was presented second.

may place a negative value on this scenario feature that is greater than the positive value placed on the reduction in congestion. Despite negative WTP for some individuals, the results shown in Figure 3.2 and Table 3.2 reflect quite substantial WTP, indicating that impacts associated with tourism development have generated significant social costs.

Figure 3.2. Predicted WTP - Noise



As noted above, refusals to initiate or complete the survey may lead to biased population estimates of WTP. This problem may be exacerbated by item nonresponse. A blank or "don't know" response was treated as a missing value, and the observation was omitted from the analysis. However, the majority of omitted observations resulted from "don't know" responses to the CV scenario or, in the case of the commodity models, exclusion of protest No votes. Because there was relatively little item nonresponse for the independent variables, imputation procedures (e.g., Whitehead 1994) were not used. Rather, weights were used to correct for both unit and item nonresponse.

The distributions of the HHINC, INCINT, education, and age variables for the samples of observations included in the models were compared to the 1990 U.S. census

data population distributions. There were modest, but noticeable, differences between the population distributions and the sample distributions, with the samples being on average somewhat older, better educated, and wealthier than the population. Therefore, population means for these variables were substituted into the WTP equations to generate an adjusted mean WTP for each model. The adjusted means are shown at the bottom of Table 3.2. For the commodity models, the adjustment also accounts for any differences in these demographic characteristics between those included in the sample and those excluded because of protest No votes.

The logit models and resulting WTP equations generally are consistent with factors thought to affect WTP. For example, WTP should increase with (i) increases in ability to pay (HHINC) and (ii) increases in the importance of the problem and, thus, benefit from mitigation (IMPORTANT). However, some coefficients are unexpected and illustrate the difficulty of discriminating between valuation of the commodity and valuation of the policy. For example, negative coefficients for assessed home value (PROPVAL) in some models may reflect respondent concerns that the fee would be paid through property taxes despite the explicit omission of taxes as a payment vehicle in the scenario wording. This belief likely would reduce WTP if property owners felt they would bear a disproportionate burden for financing the program. Ideally, this sentiment would lead to exclusion of No votes as protests in the commodity models.

This section illustrates the use of a thorough follow-up process to more accurately classify respondents who initially vote No for the scenario. Nonetheless, several limitations remain. First, respondents often vote No for a combination of reasons. In some cases, these multiple reasons were identified during the survey and No votes were

allocated in a conservative manner (i.e., a manner favoring allocation as valid No votes). However, it simply is not possible to fully explore the reasons for No votes in the course of a telephone survey.

Second, the categories developed for interviewers are, by necessity, aggregated and may lead to inaccurate classification. This is true even for the second round of follow-up questions. For example, an increase in traffic would not only increase travel time, but would also increase business opportunities in the community. As noted by Portney, respondents may hold existence values for the jobs associated with these business opportunities, just as they hold existence values for environmental goods. In fact, interviewer transcriptions indicate that some of the No votes for the congestion scenario stem from respondent concern that the program would reduce business opportunities for others within the community. These votes should be retained as valid No votes in both policy and commodity models, thereby reducing estimated WTP. In essence, the respondent is valuing the cost of reduced business opportunities for others (combined with the stated program cost) more than the benefit of reduced travel time. Because of category aggregation, some of these votes may have been excluded or classified as Yes votes.

Third, motivations for Yes votes were not explored in this study. Therefore, it is possible that estimated WTP in the commodity models is upwardly biased. The extent of this bias is unknown, but may not be as great as previous studies suggest (e.g., Stevens, More, and Glass 1994). As shown in Table 3.2, WTP varies substantially across scenarios, indicating that the good itself is an important, if not the sole, reason for vote responses. Paired t-tests indicate that there are significant differences in predicted WTP

across commodity models (noise versus housing,  $t=5.4$ ; housing versus congestion,  $t=2.1$ ; noise versus congestion,  $t=7.2$ ). Paired t-tests on the policy models show only one significant difference in the three comparisons (noise versus housing,  $t=2.9$ , housing versus congestion,  $t=1.4$ ; noise versus congestion  $t=0.61$ ). The lower level of differences across policy models may result from individuals protesting all three scenarios (these individuals were excluded during estimation of the commodity models). Insofar as the concern is difference in WTP for commodity models, which is typically the case, then conclusions should be based on tests of these models rather than of policy models.

Table 3.4, which shows voting patterns for individual respondents across

Table 3.4. Consistency of Votes (Assuming Vote Not Based on Good Presented in Scenario)

Bid Relationship	Consistent <sup>1</sup>	Inconclusive <sup>2</sup>	Inconsistent <sup>3</sup>
Noise > Congestion	97	227	46
Noise > Housing	138	233	51
Congestion > Housing	142	198	36
Congestion > Noise	92	155	21
Housing > Noise	95	168	35
Housing > Congestion	97	163	27
Category Total	661	1144	216
Percent of Total Across Categories	33%	57%	11%

<sup>1</sup>Respondent votes yes to lower bid and no to higher bid.

<sup>2</sup>Respondent votes same to both bids.

<sup>3</sup>Respondent votes yes to higher bid and no to lower bid.

scenarios, provides additional indication that votes are based on the good being valued. If respondents were voting on the basis of contributing one's fair share or contributing to a good cause rather than of obtaining benefit from the specific good, then they would not vote Yes to a high bid for one scenario and No to a lower bid for a different scenario.<sup>12</sup> Such voting patterns are labeled "inconsistent" in Table 3.4. In 11% of the cases, respondents did in fact vote in such a manner.<sup>13</sup> Similarly, there were 188 cases in which the bid for two scenarios was equal. In 68 (36%) of these cases, respondents voted differently across scenarios, a result that is also inconsistent with the assumption that votes are independent of the good presented.

### 3.3.2. Scope

When evaluating whether CV is sensitive to scope, analysts typically evaluate differences in estimated mean WTP (e.g., Boyle et al. 1994), though differences in the distribution of Yes/No votes have also been evaluated (e.g., Desvousges et al. 1993). The conclusions from scope evaluations may depend on the method used insofar as power and assumptions vary across tests; for example, tests of means involve more

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<sup>12</sup>Some researchers argue that this pattern is consistent with a fair share or good cause motivation insofar as it reflects respondent evaluation of scenario benefits for others (e.g., Milgrom 1993). However, such considerations are legitimate components of economic value to the respondent (Hanemann 1994). If the respondent receives negative value because an increase in traffic congestion burdens others in the community, then she should be expected to receive positive value from reduction in this congestion.

<sup>13</sup>The fact that voting patterns were consistent or inconclusive more often than inconsistent does not prove that respondents are voting on the basis of fair share or good cause. Consistent and inconclusive patterns would be expected for various reasons, including budget limitations and protest against scenario features. Conversely, inconsistent votes could result from sequence effects. However, as shown in Table 3.2, sequence (order) effects are not significant in this study.

Table 3.5. P-values for Various Scope Tests  
(25% Versus 50% Reduction in Congestion)

Test Basis	Model Type	
	Policy <sup>1</sup>	Commodity <sup>2</sup>
Raw data, original ( $\chi^2$ ) <sup>3</sup>	.17	.21
Raw data, original (CMH) <sup>4</sup>	.11	.33
Raw data, final (CMH) <sup>5</sup>	.06	.25
Combined model (dummy) <sup>6</sup>	.16	.30
Separate models (means) <sup>7</sup>	.12	WTP <sub>25%</sub> > WTP <sub>50%</sub>

<sup>1</sup>Protest no votes retained.

<sup>2</sup>Protest no votes excluded or converted as described in text.

<sup>3</sup> $\chi^2$  on votes of all respondents receiving mail survey.

<sup>4</sup>Cochran-Mantel-Haenszel (CMH) test on votes of all respondents receiving mail survey.

<sup>5</sup>CMH on votes of respondents retained in estimation of separate models (excludes respondents with missing values for independent variables in those models).

<sup>6</sup>Significance of coefficient for dummy variable included in combined model (CHILO in Table 3.2).

<sup>7</sup>Significance of t-test for differences in mean WTP from separate (low and high) congestion models.

Note: All tests incorporate the effects of constraining votes based on income. Parallel tests on unconstrained votes generated similar results (the constraint affects votes in both scenarios).

assumptions than tests of raw Yes/No votes, including the assumption that the model is properly specified.

In the present study, one half of the respondents were presented with a scenario that would reduce traffic congestion by 25% during busy periods (low congestion) while the other half were presented a scenario with a 50% reduction (high congestion). Table 3.5 shows p-values for various tests of the null hypothesis that votes, and WTP, are independent of the level of reduction in mitigation; that is, that CV is insensitive to

changes in the scope of the good. None of the tests indicates sensitivity at the .05 level, though the Cochran-Mantel-Haenszel (CMH)<sup>14</sup> test on "raw data, final" indicates sensitivity at the .10 level.<sup>15</sup> Unlike Desvousges, et al. and Boyle et al., the two scenarios utilized in this study reflect substantially different levels, in percentage terms, of the good being valued. However, as Boyle et al. note, the insensitivity of CV to scope is only one of several possible explanations for these results.

Of interest here are the different p-values generated by the alternate tests. The lower three rows provide the most appropriate comparison.<sup>16</sup> As indicated by the p-values in the policy column, there is substantial variability across tests, which may affect conclusions regarding sensitivity to scope. In this case, the CMH test on the raw data provided the greatest indication of sensitivity to scope. Moreover, there is even greater variability in p-values across model types. The scope tests based on commodity models indicate far less sensitivity than those based on policy models (in fact, the mean WTP for

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<sup>14</sup>CMH is a nonparametric test that evaluates association between two variables (in this case, the level of reduction and the vote) while allowing stratification based on one or more additional variables (in this case, the bid) (Landis, Heyman and Koch 1978; SAS Institute 1990). Generally, it is conservative with respect to the  $\chi^2$  test insofar as it "smooths" the effect of stratifying variables; it has low power for detecting an association between level and vote when the pattern of association for some bid values is in the opposite direction of the pattern displayed for other bid values. In addition, CMH provides an alternative to  $\chi^2$  in cases, like the present, when the high number of bid categories relative to sample size generates small expected frequencies at high and low bid levels.

<sup>15</sup>Two-tailed tests were used for the combined and separate models to ensure comparability with the  $\chi^2$  and CMH tests. One-tailed tests would indicate sensitivity at the .10 level.

<sup>16</sup>The "separate models" and "raw data, final" are based on the same data. There are small differences between this data set and the one used for "combined model" as a result of exclusion of observations with missing values for the variables that were significant, and thus included, in the respective models.



low congestion is greater than the mean WTP for high congestion in the "separate models" case). This result is the opposite of that described above for differences across the congestion, noise, and housing scenarios. In part, this discrepancy can be explained by the fact that this scope test is based on a split-sample, such that respondents inclined to give protest votes could not do so in both the low and high scenarios. Examination of the data also indicates that the similarity of low and high commodity models results from a higher proportion of No votes excluded as protests for the low congestion scenario relative to the high congestion scenario. This apparently random effect resulted in a narrowing of the difference between the scenarios for the commodity models.<sup>17</sup>

### **3.3.3. Format Stability**

The evaluation of format stability is based on responses to telephone and mail survey questions. Because the mail survey followed the telephone survey, it is possible that some effects may be due to the passage of time. However, previous research has found WTP to be stable over periods of several months, or even several years (e.g., Stevens, More, and Glass 1994). Given that respondents generally completed the mail survey within one to three weeks of the telephone survey, any effects are likely to result from format, rather than temporal, differences.

During the telephone survey, respondents voted Yes or No for a congestion scenario. During the mail survey, respondents were reminded of the congestion scenario, the bid, and the vote they gave during the telephone survey. They were then asked

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<sup>17</sup>This result illustrates the importance of exercising caution when making conclusions based on analysis of a single data set.

whether they would like to vote differently.<sup>18</sup> To minimize the possible effect of social desirability bias that would be expected to reduce vote changes, respondents were reminded that people do change their minds and why this might happen.<sup>19</sup> Of the 571 returned mail surveys, 74 (13%) contained "don't know" or missing responses to this question. Of the remaining respondents, 55 (11%) changed their vote, with the majority (43) of changes being from Yes to No. Although there is no consistent relationship between the size of the bid and the likelihood of changing a Yes vote, there is a consistently positive relationship between the size of the bid as a percent of income and the likelihood of changing a Yes vote (Table 3.6).<sup>20</sup> However, a  $\chi^2$  test does not indicate that this relationship is statistically significant ( $\chi^2_4 = 5.77$ ,  $p = .22$ ). Thus, the results in Table 3.6 suggest, but do not provide strong indication, that respondents use the additional time offered by mail surveys to more fully evaluate their budget constraint.

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<sup>18</sup>This direct questioning approach was chosen over split-sample (e.g., Loomis and King 1994) and test-retest (e.g., Stevens, More, and Glass 1994) approaches for several reasons. The split-sample approach was rejected because it may lead to differences in response rates (and thus in potential nonresponse bias), does not provide information on individual respondent behavior, and was inconsistent with other research needs for the survey. The test-retest approach typically re-presents the same scenario with an introductory statement that values may have changed since the original administration. Because of the short duration between phone and mail surveys in this study, it is likely that respondents would reject such a statement and would not respond seriously to the question.

<sup>19</sup>Unlike in test-retest surveys, this reminder did not suggest that WTP may have changed. Rather, the reminder stated that "[s]ometimes people change their mind about how they would vote, perhaps because there isn't much time to think about it on the telephone."

<sup>20</sup>Table 3.6 excludes observations with missing values for the household income question. This exclusion reduced the number of Yes votes changed, but the percentage remained stable.

Table 3.6. Vote Changes by Size of Bid Relative to Income (Congestion Scenario)

	Size of Bid as Percent of Annual Household Income					Total
	0.0-0.1%	0.1-0.2%	0.2-0.4%	0.4-1.0%	>1.0%	
<b>Telephone Survey</b>						
Combined frequency offered	99	82	90	98	92	461
Number of Yes votes	73	55	45	37	22	232
<i>Percent of offered</i>	74%	67%	50%	38%	24%	50%
Number of No votes	26	27	45	61	70	229
<i>Percent of offered</i>	26%	33%	50%	62%	76%	50%
<b>Mail Survey</b>						
Number of Yes votes changed	8	8	8	7	7	38
<i>Percent of Yes votes</i>	11%	15%	18%	19%	32%	16%

Table 3.7 shows the logit models and estimated WTP for telephone versus mail formats. The telephone format is based on votes given during the telephone survey. The mail format incorporates vote changes indicated by mail survey responses.<sup>21</sup> To avoid nonresponse bias, observations with "don't know" or missing response to the vote change question were omitted during estimation of the telephone format model.<sup>22</sup> As shown in

<sup>21</sup>Only policy models are shown here. It was not possible to re-estimate the commodity model because no information was available concerning reasons for No votes created by responses to the mail survey. As before, Yes votes were constrained based on income.

<sup>22</sup>This omission did not substantially affect mean WTP, which is \$109 for the original model (Table 3.2) and \$115 for the re-estimated model (Table 3.7). The difference in sample size between telephone and mail models reflects missing values for variables that were significant, and thus included, in the telephone model.

Table 3.7, mean WTP with the mail format (\$83) is substantially lower than mean WTP with the telephone format (\$115). A paired t-test indicates that this difference is statistically significant ( $t=5.5$ ).

### **3.4. Discussion and Conclusions**

This article presents CV-based estimates of WTP for mitigation of selected negative social impacts associated with tourism development. Such information complements WTP estimates for mitigation of environmental impacts, thereby facilitating identification of the type and level of development that provides the greatest net benefits. Although there are no previous analyses that are directly comparable, the few similar analyses have produced generally similar results. For example, Ahearn (1984) found a mean annual household WTP of \$51 (\$74 in 1993\$) for a 33% reduction in the risk of burglary in Oregon communities. Navarro and Carson (1991) used an election returns method to infer that the average San Diego household is willing to pay \$138 per year to increase jail and court capacity in an effort to reduce crime.

The fact that CV responses are affected by scenario features and motivations beyond consuming the good itself complicates estimation of WTP for commodity-type models. Researchers have tried to isolate WTP for the good from WTP based on these other considerations by following-up No votes and, increasingly, Yes votes. However, more research is necessary to determine the appropriate method for allocating responses reflecting multiple considerations. As illustrated here, there is also a need to carefully probe these considerations in order to treat them in a manner consistent with the good being valued.

Table 3.7. Format Stability of Congestion Policy Models

Variable	Telephone Format	Mail Format
Constant	-2.72**	-3.87***
BID (each x10 <sup>-2</sup> )	-.87***	-.53***
HHINC	.27***	.19***
PROPVAL	-.24**	
DPROPVAL	1.24**	
RENTOWN	1.31**	
IMPORTANT	.56***	.78***
Dummies for age		
30-39	-1.02*	
40-49	-.90	
50-59	-.79	
60+	-.66	
Dummies for desired growth		
Stay as now	-1.54**	-1.56***
Grow a little	-1.10*	-1.20**
Grow a lot	-1.54**	-1.15*
Dummies for communities		
Seaside	.61	
Cannon Beach	-.11	
Newport	.80*	
Coos Bay	.19	
Bandon	-.56	
Dummies for order of CV scenarios		
Order 1		.57**
Order 2		.19
G8	.36***	.30**
CM3	.21**	
CM5	.22*	.28**
CHILO	.39	.47**
Maddala R <sup>2</sup> :		
	.31	.22
McFadden R <sup>2</sup> :		
	.26	.18
Adjusted for df:		
	.22	.16
Percent correct predict.:		
	75	72
Mean willingness-to-pay:		
	115	83
95% CI for mean WTP:		
	87-143	42-125
Median WTP:		
	115	85
Number of observations:		
	399	430

\*Variable is significant at the p=.10 level or better.

\*\*Variable is significant at the p=.05 level or better.

\*\*\*Variable is significant at the p=.01 level or better.

As Schkade and Payne (1994) note, follow-up questions are a form of retrospective protocol and, as such, are more susceptible to bias and unreliability than is verbal protocol during the process leading to the CV response.<sup>23</sup> Although verbal protocol likely will remain impractical for most applications, it can become a common tool during pre-testing to develop appropriate follow-up questions.

Scope effects at the .05 level were not found. However, this result must be viewed within the context that many CV studies have found scope effects and that insensitivity is only one explanation for the present lack of effect. Moreover, tests for differences in voting patterns and WTP across congestion, noise, and housing scenarios indicate that respondents are sensitive to the specific good presented. The fact that alternate scope tests may lead to different conclusions suggests that scope evaluations should continue to utilize multiple tests (e.g., Carson and Mitchell 1995).

Lastly, format stability results provide modest support for the hypothesis that mail surveys provide the time necessary for thorough evaluation of budget constraints. In addition, mail surveys avoid potential interviewer bias. However, these advantages likely are outweighed by the disadvantages of relatively high nonresponse and the difficulty of probing valuation responses. The issue of nonresponse bias may be overstated insofar as telephone refusal rates also can be quite high, but the importance of follow-ups is sufficiently great to warrant favoring telephone or in-person over mail surveys. Nonetheless, the limited available data concerning format stability indicates the importance of (i) minimizing interviewer bias through careful selection and training of

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<sup>23</sup>In verbal protocol, respondents "think aloud" while deciding whether to vote for or against the presented scenario.

interviewers and (ii) providing adequate time for respondents to evaluate preferences and budget constraints.

**CHAPTER 4****RESIDENT ATTITUDE ANALYSIS:  
A NEW MODEL AND TECHNIQUE**

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#### 4.1. Introduction

During the past two decades, numerous analyses have been performed to identify resident attitudes toward tourism and the factors that affect them (for reviews see Getz 1994; King, Pizam and Milman 1993; Lankford and Howard 1994; Pearce 1989). There have been various motivations for undertaking these analyses, including the identification of opportunities for (1) mitigating tourism-related impacts of concern to residents (e.g., Lankford and Howard 1994) and (2) employing persuasive communication to improve attitudes for a given level of impacts (e.g., Davis, Allen and Cosenza 1988; Perdue, Long and Allen 1990).

Several issues germane to the present article have arisen in previous research. First, despite substantial variability in psychometric and statistical research methods, most analyses have found that attitudes are a function of various perceived tourism-related benefits and costs; that is, attitudes are a function of *end states* associated with tourism development. For example, Lankford and Howard (1994) found that employment in a tourism-related job increased favorable evaluations of tourism while perceived competition for outdoor recreation opportunities decreased favorable evaluations of tourism. Similarly, Perdue, Long and Allen (1990) found that support for future tourism development was dependent on perceived positive and negative impacts, and Milman and Pizam (1988) found that overall support for tourism was related to perceptions of the consequences of tourism.

Second, research has found that resident attitudes are also a function of perceived power relative to the tourism industry and/or of perceived influence over tourism development; that is, attitudes are a function of the *process* associated with tourism

development. For example, Madrigal (1993) found that positive resident perceptions of tourism were positively related to perceived personal influence and negatively related to perceived business influence. Likewise, Lankford and Howard (1994) found that perceived level of influence over tourism decision making significantly affected attitudes toward tourism.

Third, research has been conducted with increasingly explicit reliance on underlying conceptual models. Thus, Perdue, Long and Allen (1990) noted the relevance of social exchange theory as a basis for resident attitude models, Ap (1992a) formulated hypotheses based on this theory, and Ap (1992b) and Madrigal (1993) empirically evaluated its relevance. Similarly, Pearce, Moscardo and Ross (1991) evaluated resident attitudes within an equity-social representational framework.

Fourth, researchers have utilized increasingly sophisticated psychometric techniques during data collection and analysis. For example, Lankford and Howard (1994) followed standard psychometric procedures in the development of their Tourism Impact Attitude Scale. Even when scale development is not of interest, psychometric principles provide guidance on issues such as the importance of utilizing multi-item measures whenever possible (De Vaus 1990; Lankford and Howard 1994; Nunnally and Bernstein 1994).

Fifth, there has been an increasing awareness of the value of utilizing relatively advanced statistical methods. Of particular relevance to the present article, Keane (1994) noted the importance of applying path-analytic techniques for evaluating structural relationships between variables.

The present article introduces a general conceptual model that synthesizes and extends previous research findings. Two sets of more specific models, based on social psychological principles, are derived from this general model. Next, these models are evaluated empirically using an existing data set and a relatively novel statistical technique. Lastly, results are discussed and recommendations for future research are presented. A central purpose of this analysis is to identify the fundamental factors affecting attitudes in order to identify management priorities for addressing concerns and improving attitudes.

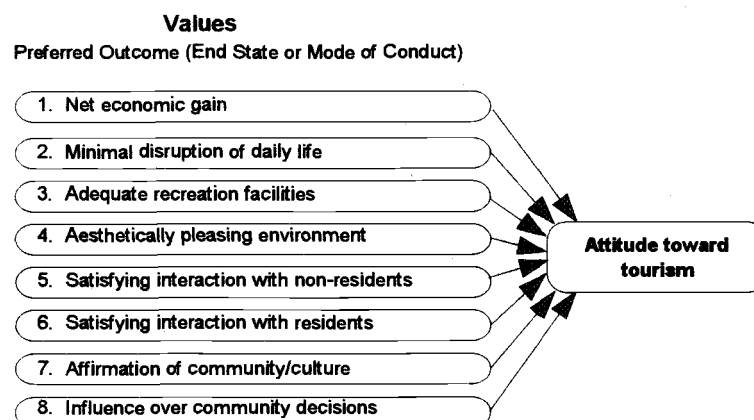
#### **4.2. The General and Specific Models**

This article focuses on the relationship between attitudes and values. Many definitions exist for these constructs. In this paper, attitude is defined as "a psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor" (Eagly and Chaiken 1993:1). This entity, the attitude object, is the current condition (level and type) of tourism. Value has been defined as an "enduring belief that a specific mode of conduct or end state of existence is personally or socially preferable to an opposite or converse mode of conduct or end state of existence" (Rokeach 1973:5; c.f., Feather 1994:469). These modes of conduct and end states of existence often are referred to as goals and, within this article, outcomes. A value may be viewed as an abstract attitude (Eagly and Chaiken 1993), and it is in this sense that the term is used here. Thus, a value reflecting preference for an end state of existence is equivalent to an attitude in favor of that end state of existence. These end states, such as a comfortable and prosperous life, are more abstract than concrete attitude objects, such as tourism. However, the present usage is less abstract than the typical usage in other contexts, such

as in the Rokeach Value Survey (Rokeach 1973) and other value scales (e.g., Braithwaite and Scott 1991; Homer and Kahle 1988; Schwartz and Bilsky 1987). The intermediate level of abstraction enhances understanding of underlying causes of specific attitudes while retaining relevance for management decisions.

Two related sets of specific resident attitude models are presented here. One set includes value-attitude (VA) models that focus on inter-attitudinal structure (Eagly and Chaiken 1993) and that indirectly evaluate outcomes affecting attitudes. The other set includes expectancy-value (EV) models that focus on intra-attitudinal structure and that directly evaluate outcomes affecting attitudes. The models are similar in that they are both static, as opposed to process models that will be described in the Discussion and Conclusion section. Moreover, they are both based on the general conceptual model shown in Figure 4.1. In general terms, the VA model evaluates correlations between (1)

Figure 4.1. The Relationship Between Values and Attitudes Toward Tourism



values and (2) attitudes, while the EV model evaluates correlations between (1) values (evaluations) multiplied by the belief (perception, expectancy, subjective probability) that the attitude object is associated with these values and (2) attitudes. Figure 4.1 presents several values that might be associated with attitudes toward tourism.

*Net economic gain.* Tourism can generate a wide variety of economic benefits, such as jobs, and economic costs, such as inflation. Residents who place importance on net economic gain and perceive such a gain from tourism would likely support tourism (this relationship, as well as those noted for other values, assumes all else is equal; the model is based on the concept that overall attitudes are formed by the combination of all salient relationships). Indeed, many studies have found significant correlation between attitudes and one or more measure of economic benefits and costs associated with tourism (e.g., Lankford and Howard 1994; Madrigal 1993, 1994; Milman and Pizam 1988; Perdue, Long and Allen 1990; Ross 1992).

*Minimal disruption of daily life.* Tourism can disrupt “daily life” by, for example, generating an increase in traffic congestion, crowding in stores and other areas, and crime violations. Residents who place importance on minimizing disruption and perceive that tourism increases this disruption would likely oppose tourism. For example, Perdue, Long and Allen (1987) found that perceptions that tourism increases crime led to reduced desires for attracting additional tourists (c.f., Milman and Pizam 1988; Ross 1992).

*Adequate recreation facilities.* Tourism can increase both the number of recreation facilities and the demand for such facilities (recreation is used broadly here to include outdoor recreation, urban entertainment, and related activities). Residents who place importance on such facilities and perceive a net gain (loss) in their availability

because of tourism would likely support (oppose) tourism. Several studies have found correlations between attitudes and tourism's perceived effect on the availability and quality of recreation facilities (e.g., Getz 1993; Lankford and Howard 1994; Perdue, Long, and Allen 1987; Ross 1992).

*Aesthetically pleasing environment.* Tourism can contribute to an aesthetically pleasing environment by, for example, catalyzing waterfront revitalization. However, it can also detract from an aesthetically pleasing environment by, for example, leading to construction that is deemed inappropriate or by increasing the amount of litter or vandalism. Again, resident attitudes would be expected to depend on the salience of this value and tourism's perceived impact. Perdue, Long and Allen (1987) found that positive perceptions of tourism's impact on community appearance were associated with desires to attract more tourists, yet Ross (1992) found that residents did not feel tourism had affected community appearance.

*Satisfying interaction with non-residents.* Tourism can lead to satisfying relationships with non-residents, even if those relationships are brief. For example, residents may value the new ideas and friendships resulting from non-resident visits. Lankford and Howard (1994) found a significant correlation between the formation of friendships with tourists and attitudes toward tourism.

*Satisfying interaction with residents.* Tourism can affect local social relationships among residents. For example, surveyed residents in Cairns, Australia, perceived that tourism had reduced the friendliness of local residents (Ross 1992). Length of residence and birthplace have been used as indicators of the salience of these relationships; residents who were born in the community and/or have lived there for many years would

be expected to value social relationships and to oppose tourism insofar as it was perceived to disrupt these relationships. Davis, Allen and Cosenza (1988) found that tourism “haters” were more likely to be native born residents than were tourism “lovers.” Likewise, Um and Crompton (1987) found that birthplace, heritage, and length of residence affected attitudes toward tourism. Several studies (e.g, Lankford and Howard 1994; Liu and Var 1986) have found statistically significant associations between length of residence and attitudes, while others (e.g., Allen, et al. 1993; McCool and Martin 1994) have not found such associations.

*Affirmation of community/culture.* Because tourists often are motivated by the desire to experience the host community and its culture, tourism can affirm that culture and lead to community pride. For example, Milman and Pizam (1988) found that perceptions that tourism improved community image were positively correlated with support for the industry (c.f., King, Pizam and Milman 1993). However, when increases in tourism are concurrent with decreases in traditional industries, tourism can be perceived as disrupting the local culture that is intertwined with these industries. For example, Haukeland (1984) found that negative attitudes toward tourism were strongest among residents engaged in traditional occupations such as farming.

*Influence over community decisions.* Research in procedural justice and public involvement (e.g., Lind and Tyler 1988) indicates that the level of perceived influence during decision making processes affects satisfaction with process outcomes. Thus, the perceived level of influence over tourism development should be positively correlated with attitudes toward tourism. This relationship has been found by Lankford and Howard (1994), Madrigal (1993), and Ap (1992b).

The model depicted in Figure 4.1 is simple and can be extended in various ways. First, only eight values are included, most of which are terminal values (end states). Additional values, particularly instrumental values (modes of conduct) relating to tourist-resident interaction, might also be important and thus worth including. Second, when evaluating tourism residents might consider not only how tourism affects them, but also how it affects others in the community. For example, respondents might value both economic gain for themselves and for others.

Third, beliefs and values might be based on both absolute and relative impacts. For example, a resident might form her attitude not only on the basis of her (absolute) economic benefits, but also on the basis of how much she has benefited relative to others inside or outside the community. If she perceives benefits to be unfairly distributed, she might be less supportive of tourism than would otherwise be the case.

Fourth, there also might be relativity with respect to historical or potential alternatives. Thus, perceived tourism-related economic benefits may underestimate actual economic benefits when residents are accustomed to industries, such as wood products, that generally provide greater actual economic benefits. In this case, the belief vis-à-vis net economic gain is relative. Perdue, Long and Allen (1990) found that resident support for additional tourism was negatively associated with perceived community future; those less optimistic about the future were more favorable toward tourism (c.f., Getz 1994). In this case, the value placed on economic gain was relative.

One of the ongoing issues in the resident attitude literature is the relevance of additional factors, such as demographic variables. For example, as noted above, length of residence has been correlated with attitude in some studies, but not in others. These



factors are hypothesized as exogenous in this model; that is, they will affect attitudes only via the listed values. Length of residence and birthplace may simply be surrogates for the importance of satisfying interaction with residents or affirmation of community/culture. Likewise, age and education (e.g., Husbands 1989) might affect importance of economic benefits. They might also affect level of knowledge and thus beliefs. Differences in attitudes between businessmen and other residents (e.g., Lankford 1994; Pizam 1978) presumably result from differences in the beliefs regarding net economic gain.

Additional factors appearing in previous models include the level and type of interaction between tourists and residents. For example, proximity to areas of tourist concentration has been significant in some analyses (e.g., Clements, Schultz, and Lime 1993), though not in others (Lankford and Howard 1994). Proximity, and other measures of intensity of interaction between tourists and residents, likely affect attitudes through a variety of the values and beliefs represented in Figure 4.1, including economic gain, level of disruption, and satisfaction from interaction with non-residents. Similarly, differences (cultural, economic, or linguistic) between tourists and residents likely affect attitudes through satisfaction from interaction with non-residents and affirmation of community/culture.

In summary, it is likely that most factors found to affect attitudes can be incorporated into the model shown in Figure 4.1. Ultimately, model adequacy is evaluated by its explanatory power and the extent to which excluded variables, such as length of residence, independently contribute to this power. One example of such evaluation is presented below.

Two specific models stem from the general conceptual model shown in Figure 4.1. The expectancy-value model is based on the principle that attitudes are a function of (1) the belief that an attitude object is associated with a set of outcomes and (2) the evaluation of the set of outcomes (the level of preference for those outcomes). To predict attitudes, beliefs are typically multiplied by evaluations, with these cross-products summed across outcomes:

$$\text{Attitude} = \sum b_i e_i$$

where  $b$  is belief,  $e$  is evaluation, and there are  $i=1$  to  $n$  salient outcomes. If a resident perceives that tourism generates a net economic gain and he evaluates this outcome positively, he will tend to have a positive attitude toward tourism. Conversely, if a resident perceives that tourism generates disruption in his daily life and he evaluates this outcome negatively, he will tend to have a negative attitude toward tourism. The combination of belief-evaluation cross-products for salient outcomes is hypothesized to predict the resident's attitude toward tourism.

EV models, such as the Theory of Reasoned Action and its successor, the Theory of Planned Behavior, have been used to predict a wide variety of attitudes and behaviors (Ajzen 1988; Ajzen and Fishbein 1980; Fishbein and Manfredo 1992). Moreover, there is significant overlap between the EV model, Ap's (1992a) social exchange theory model, and Pearce, Moscardo, and Ross' (1991) equity function. Because of its intuitive appeal, the principles underlying EV models have been used implicitly in much of the resident attitude research. As Eagly and Chaiken (1993:108-109) note:

The expectancy-value principle that people come to hold positive attitudes toward things that they think have good attributes [outcomes] and negative attitudes toward things that they think have bad attributes [outcomes] has a certain obviousness to it that may make the theory somewhat

uninteresting when initially encountered. Yet the [theory] ... does provide a model for predicting attitudes from the information people acquire [and] ... has some interesting implications for attitude change.

Value-attitude (VA) and value-attitude-behavior models have been used to evaluate many associations between values, attitudes, and behaviors or behavioral intentions (e.g., Feather 1994; Heaven et al. 1994; Homer and Kahle 1988; Kristiansen and Matheson 1990; McCarty and Shrum 1994). Such models have been used in the tourism field (e.g., Madrigal 1995; Madrigal and Kahle 1994), though applications to the analysis of resident attitudes have not appeared in the literature.

VA models are based on the principle that people derive their attitudes toward specific policies or objects based on their value systems or the ideologies they hold, where ideologies are clusters of values (Eagly and Chaiken 1993:145; Homer and Kahle 1988). Ideologies typically revolve around dominant societal or political themes such as liberalism or conservatism. However, within the present resident attitude models they are less abstract and might include themes such as the importance of rural culture, which might be represented by the bottom three values in Figure 4.1.

The EV and VA models presented here are based on social psychological principles and previous conceptual and empirical resident attitude evaluations. Moreover, these models are appealing in their simplicity. However, this simplicity is achieved at the cost of understating the complex nature of attitude formation and change. As a result, some attitude researchers (e.g., McGuire 1989) criticize the EV formulation in particular. To some extent, the conceptual rigor and empirical fit of such formulations can be improved by controlling for factors such as differences in attitude function. Katz (1960) proposed that attitudes serve four functions or needs: the utilitarian, ego-

defensive, value-expressive, and knowledge functions. Maio and Olson (1994, 1995) detected a significant relationship between value importance and attitudes for subjects with value-expressive attitude functions, but not for subjects with utilitarian attitude functions. Nonetheless, the EV and VA models ultimately are limited by the fact that attitudes are affected by processes and factors excluded from the models. Process theories, which are described briefly in the Discussion and Conclusion section, can provide additional insight into attitude formation and change.

#### **4.3. Background on Study Sites and Survey Administration**

The following analysis is based on responses to resident surveys in eight Oregon (USA) coast communities. The economies of these communities historically have depended on natural resource industries like wood products, fishing, and agriculture. Although these industries remain important, the wood products and fishing sectors in particular have undergone recent declines due to harvest restrictions. Conversely, tourism and retiree in-migration have played increasingly important roles in local economies. Transfer payments and dividends, interest, and rent are easily the largest contributors to personal income on the Oregon coast, representing 24% and 21%, respectively, of personal income (Davis and Radtke 1994). Their importance, which is greater for the coast than for the state or nation, reflects the large number of retirees living in the region. The wood products industry (including paper) contributes 16% of coastal personal income, while tourism contributes 8%, fishing 5%, and agriculture 4% (Davis and Radtke 1994).

Surveys were administered to 945 residents in eight geographically and economically diverse communities during November and early December, 1993. In each

community, a random sample of households was contacted by telephone using the random digit dialing technique. One member from each household was chosen at random, based on date of birth, to complete the telephone survey, which lasted an average of 15 minutes. All of the residents who completed the telephone survey were then asked to complete a mail survey. Half of those accepting the mail survey were sent a version focused on tourism while the other half were sent a version focused on more general issues. Most of the items used in the present analysis were contained in the mail surveys; many of these items were based on questions used in previous surveys, particularly those developed by Ap (1992b). The principles of Dillman's (1978) "total design method" were followed in survey preparation, pretest, and administration.

A large number (873) of contacted households refused to participate in the telephone survey before hearing any details. High refusal rates are common in telephone surveys, and specific factors increased the refusal rate for this survey. For example, many of the residential telephones in these communities are located in second homes and vacation rentals. Potential respondents contacted in such locations did not consider themselves to be residents and, therefore, declined to participate in the survey.

Nonetheless, high response rates were achieved once residents were engaged in the survey. Only 17 (1.8% of the 945 completes) terminated the telephone survey midway. Of those completing the telephone survey, 793 (84%) accepted the follow-up mail survey. Of these, 571 (72%) completed and returned the mail survey.

The following survey results provide background on the study sites. Residents were asked in an open-ended format to list the most important perceived benefits and problems associated with tourism. Not surprisingly, the most important benefits were

economic in nature, including the generation of jobs and local business opportunities. Of all employed respondents, the percent working in the tourism industry ranged from 4% in Coos Bay to 60% in Lincoln Beach. In all but one community, the majority of respondents working in non-tourism industries perceived that their job was at least partly dependent on tourism. Some residents also noted that tourism development increased the number and types of facilities available to residents and that tourists brought new ideas into the community.

The perceived problems were similar to those found in many tourism-dependent communities, yet were also partly due to the nature of local geography and type of tourism development. Highway traffic was by far the most commonly perceived problem, noted by 47% of the respondents. Most of the coast region is a relatively narrow strip of land between the Pacific Ocean to the west and the Coast Range mountains to the east. U.S. Highway 101 is the only main road that runs north-south, the primary route followed by tourists. In most areas Highway 101 comprises only one lane in either direction, and traffic is significantly slowed during tourist seasons by the high volume and presence of slow-moving recreational vehicles (RVs). This traffic can significantly increase travel time for residents.

Crime, reported as a problem by 14% of respondents, consists primarily of minor violations such as disorderly conduct by visitors. These minor violations are particularly disruptive to residents because they often occur at rented "vacation" homes located in residential areas. Additional reported problems included crowding in stores, bayfronts, and other areas, as well as competition for parking spaces. As with traffic, the linear

Table 4.1. Desires for Future Changes in Types of Tourism

Type of Tourism	Desired Change in Next Five Years (percentage of respondents desiring each change)			
	Decrease	Stay about the same	Increase	Don't Care
Hotels/motels	3	55	38	5
Long-term vacation rentals	7	45	39	9
Short-term vacation rentals	17	43	33	7
Destination resorts	6	36	41	17
Day visitors	15	42	38	6

nature of most coast communities exacerbates the problems of crowding and lack of parking; there simply is no place to put all the people and cars.

Despite the tourism-related problems, the majority of residents reported that tourism has been positive for them individually and for their community. When asked their level of agreement with the statement "Overall, for me personally, the benefits of tourism outweigh the costs of tourism," 22% strongly agreed, 29% somewhat agreed, 23% were neutral, 11% disagreed, and 11% strongly disagreed. Agreement was greater in response to a similar statement focused on community, rather than personal, benefits. These beliefs contributed to desires for future increases in tourism development (Table 4.1). Increases were favored over decreases for all types of tourism, though short-term vacation rentals (less than one week) and day visitors were less desirable than other types. Responses to other survey items suggest that this ranking was a result of the relatively low level of economic benefits and relatively high level of disruption associated with these two types of tourism.

#### **4.4. Methodology and Results**

Before describing model estimation and results, two general data issues should be noted. First, the data were collected prior to development of the present models. Thus, they should be treated as secondary data, with concomitant limitations. Specific discrepancies between typical measures and those used for the present analysis are discussed below for each model. Second, observations with missing values for 20% or more of the potential model variables were excluded from the analysis. Imputation, with Graham and Hofer's EMCOV algorithm (Graham, Hofer, and Piccinin 1994), was used to replace the remaining missing values. In the case of categorical variables, imputed values were rounded to the nearest category value.

##### **4.4.1. Value-Attitude Models**

Value-attitude models hypothesize that resident attitudes toward tourism will depend on the importance of resident values or sets of values. Empirical evaluation of such hypotheses is complicated by the fact that values and attitudes are not directly observable. Rather, they are latent constructs or variables. Evaluation is based on sets of observed or measured variables that serve as indicators of the latent variables, with the relationship between the observed and latent variables being estimated using factor analysis. The relationship among latent variables or among latent variables and surrogate latent variables (observed variables serving as single-item proxies for latent variables) is typically estimated using regression analysis (e.g., Lankford and Howard 1994; Perdue, Long and Allen 1990).

This article presents structural equation modeling (SEM) as a technique for simultaneously estimating (1) the relationships between observed and latent variables



(the measurement model) and (2) the relationships among latent variables (the structural model). SEM, and software utilizing the technique (e.g., LISREL and EQS), is a relatively new method that has gained popularity because it combines confirmatory factor analyses and regression analyses to model a variety of psychological, sociological, and other relationships. Introductory descriptions are provided by Byrne (1989; 1994), Hoyle (1995) and Jöreskog and Sörbom (1993); Nickerson and Ellis (1991) is an example of SEM within the tourism field.

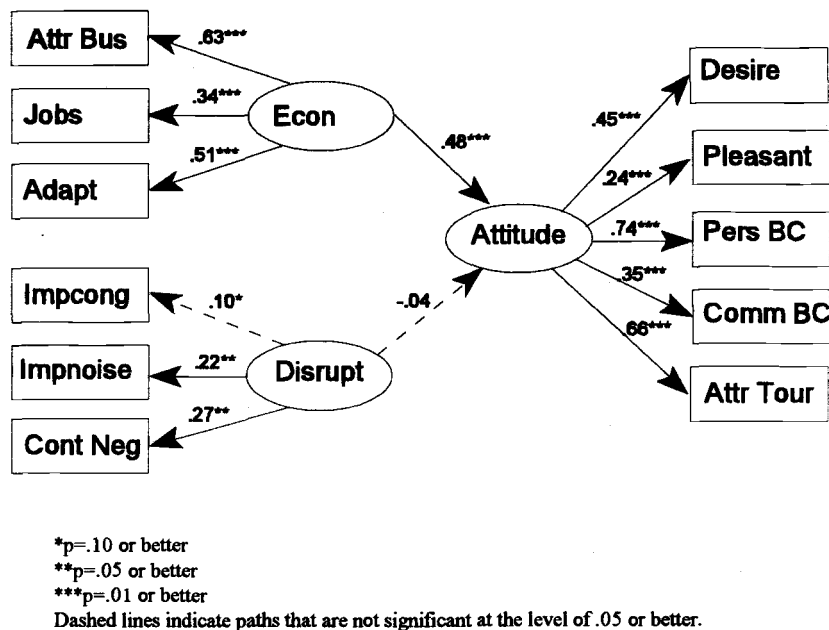
Some previous analyses of value-attitude relationships have utilized sets of values (e.g., Homer and Kahle 1988; McCarty and Shrum 1994) while others have utilized individual values (e.g., Heaven et al. 1994; Kristiansen and Matheson 1990). Individual values were utilized in the present analysis. Because this analysis is based on a secondary data set, there are two important limitations. First, observed variables are available only for attitude and the first two values in Figure 4.1 (preference for net economic gain and minimal disruption of daily life). Second, the present value measures differ from traditional measures, which typically involve rating or ranking the importance of several values presented in the survey instrument. The present measures are based on responses to several Likert-type questions. Nonetheless, the available data are considered adequate to illustrate concepts and provide an initial evaluation of the relevance of value-attitude models for resident attitude analyses.

Two additional data issues are relevant here. First, strictly speaking, the observed variables are categorical rather than continuous, so that polychoric correlations should be used. However, accurate estimation of polychoric correlations requires very large sample sizes (Nunnally and Bernstein 1994). Moreover, biases resulting from use of categorical

variables in SEM are most pronounced when there are only two or three categories (West, Finch and Curran 1995); most of the variables used here involve five categories. Therefore, categorical variables were treated as continuous for this analysis. This treatment will underestimate associations between variables (Nunnally and Bernstein 1994:127), so that the results generally will be conservative (i.e., they will underestimate model fit). Second, the maximum likelihood (ML) estimation technique used here assumes multivariate normality, an assumption that is not met by the data. However, SEM models estimated with ML tend to be robust to violations of this assumption (Chou and Bentler 1995). Moreover, violations tend to generate conservative results (West, Finch and Curran 1995).

Figure 4.2 shows the measurement and structural components of the first value-attitude model. Each of the observed variables is displayed in a rectangle (descriptions of observed variables are presented in Table 4.2). Observed variables include questions asked on the telephone and both mail surveys (sample size is 552). Each of the latent variables is displayed in a circle. The hypothesized model initially did not fit the data well. The  $\chi^2$  test provides the basic overall goodness-of-fit measure, with low  $\chi^2$ , and thus p values close to one, indicating a good fit (a good model will fail to reject the null hypothesis that the model fits). The initial model generated  $\chi^2=298, 41$  df,  $p<.01$ , which indicates a poor fit. Because this  $\chi^2$  test is sensitive to the number of observations, supplementary measures have been developed. The goodness-of-fit index (GFI) is acceptable at .91, but the root mean square error of approximation (RMSEA) is high at

Figure 4.2. Value-Attitude Model (VA-1)



.11, and the root mean square residual (RMR) is high at .10. Unlike the  $\chi^2$  test, there are no critical values for these supplementary measures; evaluations are based on common usage “rules of thumb.”

One of the features provided by LISREL is the modification index, which identifies paths that would improve model fit (similar features are available with other SEM software packages). The modification index indicated that the model would be improved by allowing the error terms of Attr Tour and Attr Bus to correlate. In essence, the data suggest that these observed variables are affected not only by the latent variables shown in Figure 4.2, but also by a separate latent variable that might be characterized as a general attitude toward local government use of tax revenue to increase economic

Table 4.2. Description of Observed Variables for EV and VA Models<sup>1</sup>


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Desire	Stated desire for change in tourism in the next five years (-1=decrease, 0=stay the same, 1=increase).
Educ	Highest level of education (1=some elementary to 7=completed graduate school).
HH Inc	Total annual household income before taxes (1=less than \$10,000 to 8=more than \$100,000).
Impcong	Rating of importance of traffic congestion on Highway 101 as an issue in the community (1=not important, 2=somewhat important, 3=very important).
Impnoise	As above, for noise and minor crime in residential areas.
Pleasant	Stated pleasantness of interaction with tourists (1=very unpleasant to 5=very pleasant).
Propval	Assessed value of property for homeowners (1=less than \$20,000 to 8=more than \$200,000, 0=respondents who do not own property).

For each of several items, respondents were asked to rate the change caused by tourism. They then assessed how they *felt* about the change caused by tourism, using a 5-point scale (1=dislike it a lot, 5=like it a lot). Assessments for the following items are used in the EV models.

Aes Comm	Attractiveness of the community.
Aes 101	Attractiveness of the scenery along Highway 101
Crime	Amount of crime in the community.
FT Jobs	Number of full-time jobs available for current residents.
Litter	Amount of litter in the community.
Noise	Amount of noise and unruly behavior in residential areas.
PT Jobs	Number of part-time jobs available for current residents.
Rec Site	Number of people at my favorite recreation sites (beaches, fishing holes, etc.)
Res Park	Availability of parking in residential areas.
Standard	Standard of living for your household.
Town Park	Availability of downtown parking.
Traffic	Amount of traffic in the area.

The following are Likert-type variables, using a 5-point scale (1=strongly disagree to 5=strongly agree).

Adapt	Residents much accept changes if they want to keep the local economy healthy.
Attr Bus	Local government should use property tax revenue to attract and retain businesses in this community.
Attr Tour	Local government should use property tax revenue to attract more tourists in the low season.
Comm BC	Overall, for my community, the benefits of tourism outweigh the costs of tourism.
Cont Neg	Local government should take an active role in controlling negative aspects of tourism and other development.
Jobs	Creating jobs for residents should be a high priority for this community.
Pers BC	Overall, for me personally, the benefits of tourism outweigh the costs of tourism.

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<sup>1</sup>Variables are listed alphabetically within each group.

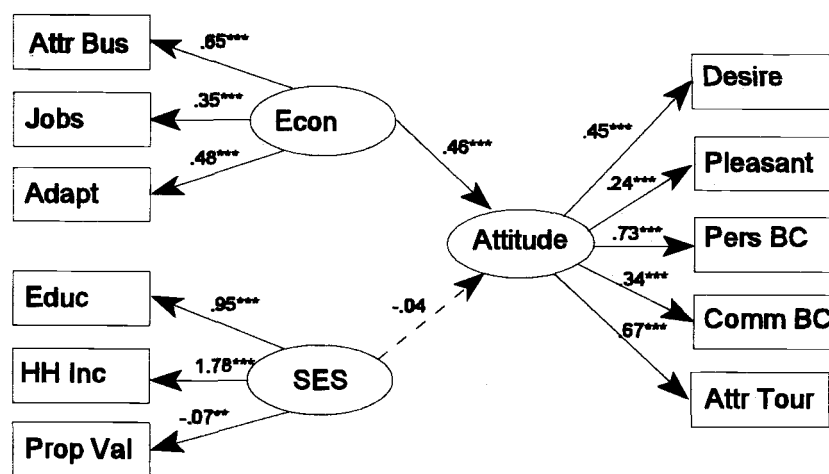
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activity. In cases such as this one, where there exists theoretical justification for doing so, it is acceptable to “free” the error terms by allowing them to correlate. Likewise, the error terms of Pers BC and Comm BC were freed. Separate latent variables are implied, but not explicitly specified, by freeing the error terms in this manner.

As expected, model fit was improved by allowing the errors to correlate. Although the  $\chi^2$  remains high in the revised model ( $\chi^2=108$ , 39 df,  $p<.01$ ), the other measures indicate moderately good fit (GFI=.96, RMSEA=.057, RMR=.046). The coefficients, and their significance levels, for this revised model (VA-1) are shown in Figure 4.2. Unlike the  $\chi^2$  test, significance for coefficients follows the traditional interpretation (small p values indicate strong relationships). Paths to the observed variables for Econ and Attitude are all highly significant, indicating strong measurement models for these constructs. However, the measurement model for Disrupt is less strong, as illustrated by the relative lack of significance shown for the paths leading from Disrupt to the observed variables. Moreover, the path from Disrupt to Attitude has the expected sign, but it is not significant. These results suggest that preferences for net economic gain have a greater effect on attitudes toward tourism than do preferences for minimizing disruption. Due to the insignificance of the Disrupt to Attitude path, the model was further revised by dropping the Disrupt component (a prior deletion of solely the observed variable Impcong did not substantially affect the path from Disrupt to Attitude). The deletion of the Disrupt component improved model fit, though the  $\chi^2$  remained high ( $\chi^2=56$ , 17 df,  $p<.01$ , GFI=.98, RMSEA=.065, RMR=.044).

As discussed above, there has been debate in the literature regarding the significance of demographic factors as explanatory variables in attitude models. It is hypothesized here that they may explain the values used in value-attitude models, and thus indirectly explain attitudes, but that they will not directly explain attitudes. Tests of this hypothesis are possible in SEM. Figure 4.3 shows VA-2, a model incorporating a direct path from socio-economic status (SES) to Attitude. Overall goodness-of-fit is moderately good ( $\chi^2=135$ , 39 df,  $p<.01$ , GFI=.96, RMSEA=.067, RMR=.091). The SES measurement model appears satisfactory. Although the negative coefficient on Prop Val is unexpected, the value is close to zero and it is less significant than those for HH Inc is unexpected, the value is close to zero and it is less significant than those for HH Inc

Figure 4.3. Value-Attitude Model (VA-2)



\*p=.10 or better

\*\*p=.05 or better

\*\*\*p=.01 or better

Dashed lines indicate paths that are not significant at the level of .05 or better.

and Educ; this suggests that the SES construct is primarily comprised of the HH Inc and Educ observed variables.

Of primary interest is the insignificance of the path from SES to Attitude. An additional test of this relationship is provided by constraining the path to zero and evaluating the change in  $\chi^2$  relative to the change in degrees of freedom (e.g., Crosby, Bitner, and Gill 1990; Homer and Kahle 1988; McCarty and Shrum 1994). This test also indicates an insignificant direct path from SES to Attitude ( $\Delta\chi^2=.44$ ,  $\Delta df=1$ ,  $p=.51$ ). These results suggest that SES does not directly contribute to attitudes toward tourism. However, as hypothesized, additional SEM analysis does indicate a significant relationship between SES and Econ, with a negative sign indicating that residents in higher SES categories place lower priority on net economic gain; these residents are relatively secure economically and apparently place less importance on creating new jobs. Thus, model results suggest SES affects Attitude indirectly via Econ, but not directly (additional models with *both* indirect and direct paths do not show significance for either the direct path coefficient or the change in  $\chi^2$  resulting from adding the direct path).

The last set of VA models involves single observed variables for the latent variables Aesthetics, Residents, and Culture (values 4, 6, and 7) shown in Figure 4.1; the observed variables were based on questions in the general mail survey (sample size is 274). None of these latent variables exhibits significant paths to Attitude, though the Culture variable was almost significant at the .05 level ( $z$  statistic=1.95). Thus, the present data do not support the hypothesized relationships. However, in addition to the general data limitations noted above, the data used for these models are further limited by

low variance (responses were confined to three categories). Moreover, the latent variables reflect only one observed variable (in such cases, reliability, and thus error variance, must be set arbitrarily; a reliability of .85 was used for this analysis [c.f., Jöreskog and Sörbom 1993:37]).

#### **4.4.2. Expectancy-Value Models**

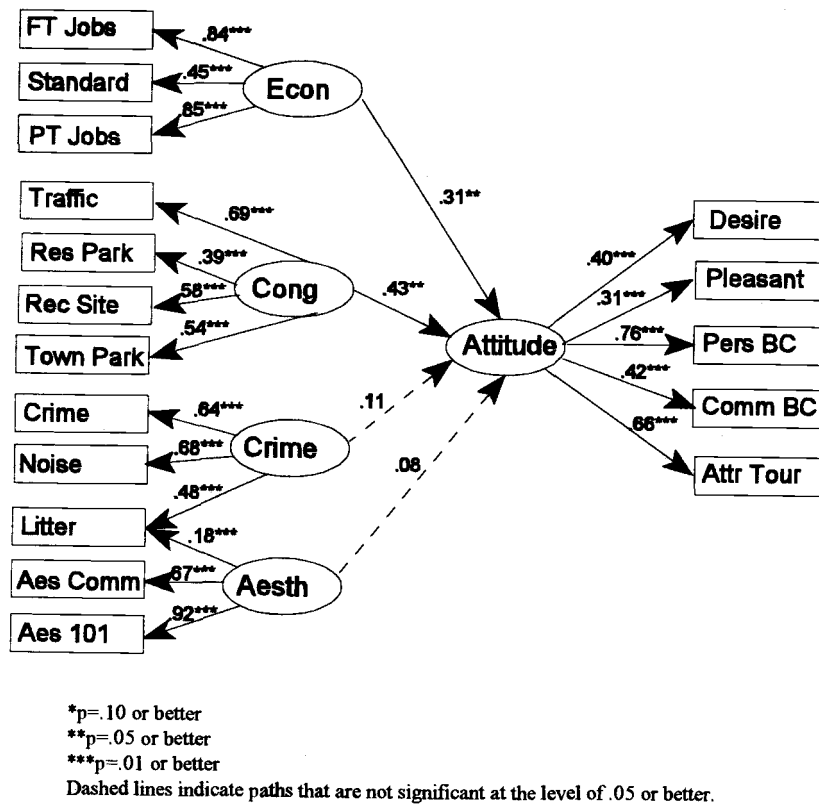
Expectancy-value models hypothesize that resident attitudes will be a function of (1) the belief that tourism is associated with a set of outcomes and (2) the evaluation of the set of outcomes. To predict attitudes, beliefs are multiplied by evaluations, with these cross-products summed across outcomes. Beliefs, evaluations, and attitudes typically are measured with semantic differential and related survey items (e.g., Ajzen and Fishbein 1980; Manfredo 1992).

An initial expectancy-value model (EV-1), based on relationships displayed in Figure 4.1, is shown in Figure 4.4. The disruption component of Figure 4.1 is separated into congestion (Cong) and crime (Crime) components in Figure 4.4. Because the sole available recreation facility item involves crowding, it is incorporated as an observed variable for Cong rather than as a separate outcome. Single question items are used instead of cross-products. In the survey, respondents rated the perceived change caused by tourism for each of several outcomes. Respondents then assessed how they felt about each perceived change. Therefore, these assessments comprise both the belief and the evaluation components.

Observed variables include questions asked in the telephone and the tourism mail survey (sample size is 275). Initial results indicate a relatively poor fit ( $\chi^2=268$ , 109 df,



Figure 4.4. Expectancy-Value Model (EV-1)



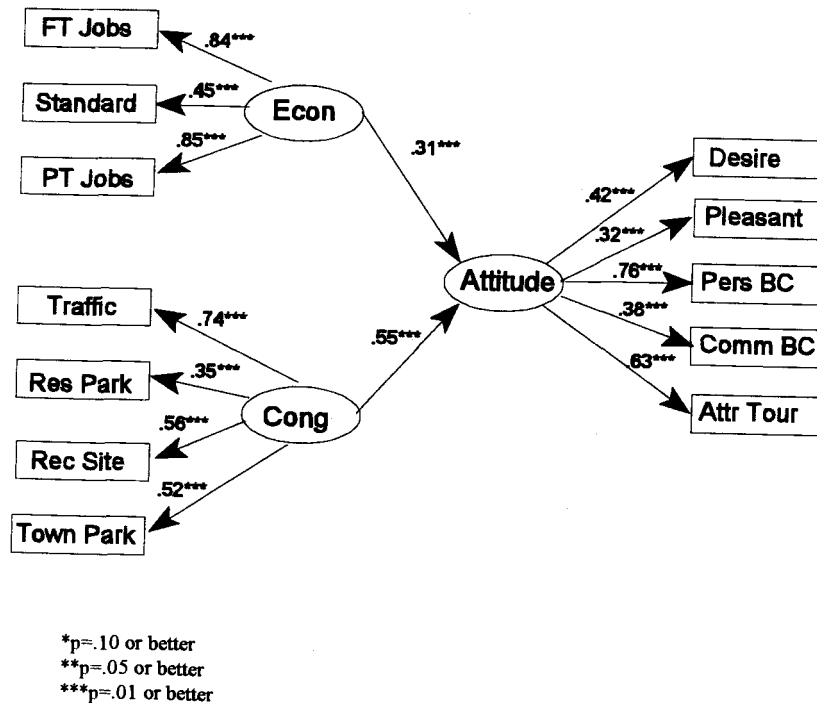
$p < .01$ , GFI=.89, RMSEA=.073, RMR=.077). The model was then revised by freeing the error terms of Pers BC and Comm BC, as well as the error terms of Res Park and Town Park. In addition, the path from Aesth to Litter was supplemented by a path from Crime to Litter. Again, these modifications have theoretical justifications; for example, littering not only reduces the aesthetic qualities of an area, but is also illegal. As expected, the revision improved model fit ( $\chi^2=191$ , 106 df,  $p < .01$ , GFI=.92, RMSEA=.054, RMR=.072).

The size and significance of coefficients for this revised model are shown in Figure 4.4. Each of the measurement models fits well. However, the paths from Crime and Aesth to Attitude are not significant, which suggests that these outcomes contribute little to attitudes toward tourism. A further revised model was estimated, with these insignificant paths deleted. That model, which is displayed as EV-2 in Figure 4.5, provides the best overall fit among the EV models using the  $\chi^2$  and GFI criteria ( $\chi^2=95$ , 49 df,  $p<.01$ , GFI=.95, RMSEA=.058, RMR=.073). Moreover, both the measurement and structural models fit well.

The EV-1 and EV-2 models posit a unidirectional path from the latent EV variables to Attitude. However, the beliefs incorporated into the EV items are themselves hypothesized to be a function of Attitude (Eagly, Mladinic and Otto 1994). Given this simultaneity (reciprocity), the paths between the latent EV variables (e.g., Econ) and Attitude should be bidirectional, as illustrated by EV-3 in Figure 4.6. The EV variables should result both from respondent attitudes toward tourism and from the actual extent to which tourism has generated that outcome (e.g., Act Econ).

The presence of simultaneity can be evaluated using SEM (e.g., Jöreskog and Sörbom 1993:37-44) and regression techniques such as two-stage least squares (e.g., Pindyck and Rubinfeld 1991:287-315). Measures for actual levels of tourism's economic, congestion, crime, and aesthetic impacts were developed. For example, actual economic impact (Act Econ) for each community was based on the average of (1) percent of employed survey respondents who work in the tourism industry and (2) percent of those working in other industries who believe their job is very dependent on tourism. For the regression analysis, latent variables were represented by principal components of the

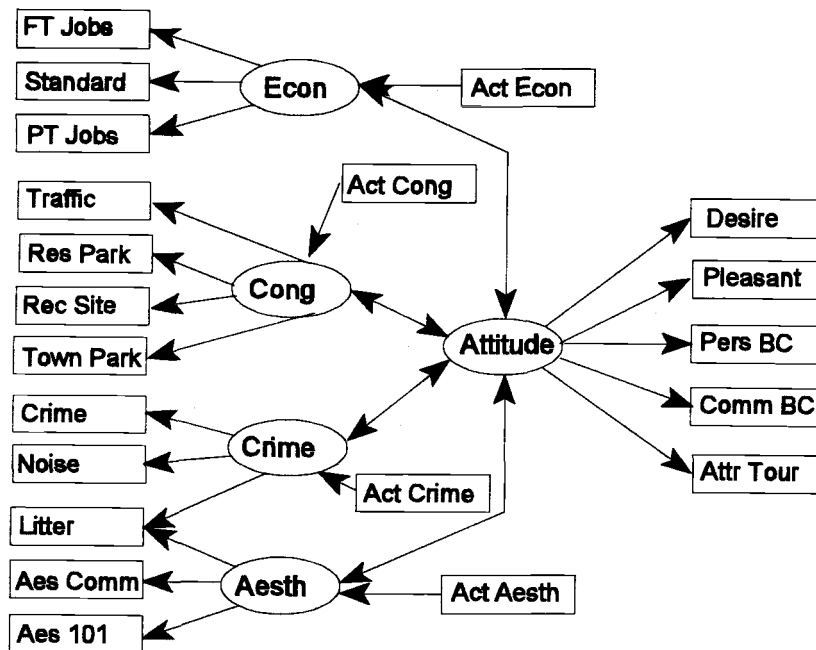
Figure 4.5. Expectancy-Value Model (EV-2)



observed variables shown in Figure 4.6. Specifically, the first principal component for each set of observed variables was used; the amount of variance in observed variables explained by this component ranged from 42% in the case of Attitude (based on five observed variables) to 73% in the case of Crime (two observed variables).

Neither SEM nor two-stage least squares analyses generated acceptable models. The LISREL analysis failed to converge. The two-stage least squares analysis indicated poor model fit, with poor  $R^2$  values. Thus, this analysis does not support the existence of

Figure 4.6. Expectancy-Value Model (EV-3)



simultaneity. However, secondary data were used for the observed variables, and the measures for actual impacts remain imperfect. Therefore, it would be premature to reject the existence of simultaneity.

#### 4.5. Discussion and Conclusion

Structural equation models often are referred to as “causal” models, but given nonexperimental survey designs it is no more appropriate to infer causality with SEM analysis than with regression or factor analysis. In addition, all conclusions based on the present empirical evaluations must remain tentative given the limitations of using secondary data that do not fully meet statistical assumptions. Despite these cautions, the

present models contribute to the resident attitude literature. Limitations of this particular data set generally will lead to underestimation of relationships. Therefore, the statistically significant path from Econ to Attitude in the VA models provides strong indication that residents who place importance on a growing economy are likely to have positive attitudes toward tourism. Similarly, the statistically significant paths from Econ and Cong to Attitude in the EV models provides strong indication that resident attitudes are associated with the level of perceived economic and congestion impacts.

Conversely, data limitations lead to caution in rejecting those relationships found to be statistically insignificant. Thus, the insignificant path from Disrupt to Attitudes suggests that resident values with respect to disruption do not affect attitudes. In addition, results suggest that SES does not affect attitude directly. Lastly, results for EV-1 suggest that attitudes are not associated with perceived crime and aesthetic impacts. However, the lack of relationships may be due to data limitations.

Moreover, it should be stressed that despite the apparent lack of relationship between perceived crime and aesthetic impacts and attitude, residents are disturbed by these impacts. For example, when asked how they feel about the change in litter caused by tourism, 70% of respondents said they dislike it a little or dislike it a lot. The potential discrepancy between what impacts concern residents and what impacts affect attitudes raises the issue of research motive. If the purpose is simply to improve attitudes, then crime and aesthetic impacts might be ignored.

These models provide a systematic and straightforward framework for evaluating how the values people hold affect their attitudes toward tourism, as well as what types of tourism-related outcomes most affect attitudes. The present results are relatively

predictable given previous research. For example, those residents having strong preferences for job creation and believing that tourism creates jobs will tend to favor tourism. However, other results are less predictable. For example, beliefs and evaluations of tourism's effect on congestion are found to be more strongly associated with attitude than are beliefs and evaluations of tourism's effect on crime. Given a focus on changing attitudes, results suggest greater attention should be paid to congestion issues than crime issues.

More importantly, given the breadth of the basic model and the power of the SEM technique, future applications using surveys based on this model should generate more powerful results relating to issues such as the importance of perceived influence over community decision making and the importance of tourism's perceived relationship to affirmation of local culture. Another specific contribution is the focus on fundamental factors that have theoretical relationships with attitudes, as opposed to models built on demographic variables that may solely act as imperfect surrogates for these factors.

Despite their intuitive appeal and their qualified success in the present analysis, VA and EV models are inherently limited in their ability to explain variation in attitudes. Social psychologists have developed alternative theories and principles that contribute to understanding of attitude formation and change. In order to suggest directions for future research on resident attitudes, the relevance of these theories and principles is illustrated by the following hypothetical example (this section is based primarily on material presented in Eagly and Chaiken [1993], though additional references are also provided).

Consider the case of a community that historically has depended on logging yet increasingly has become dependent on tourism. In the EV model, resident attitudes

toward tourism will be a function of the importance of outcomes and the extent to which the tourism is believed to contribute to the attainment of these outcomes. In an effort to increase the favorableness of resident attitudes toward tourism, an information source (e.g., the local convention and visitor bureau) communicates a message describing the number of community jobs generated by tourism.

Why might the persuasive communication campaign be effective? The message might increase an existing belief that tourism creates jobs. In addition, it might increase the likelihood that job-related beliefs are accessible when thinking about tourism. Moreover, the message might also stress the importance of job creation, which might increase the importance placed on economic benefits by residents. Research by Robertson and Crofts (1992) suggests that such communication can be effective. Yet Ryan and Montgomery (1994:368) note that resident attitudes may be resistant to change; that is, attitudes might not be affected by the message. Why not?

*Aspects of the message.* Referring again to the EV model, it might be the case that residents are fully cognizant of the outcomes associated with tourism, but that, on average, they evaluate these outcomes more negatively than positively. Put simply, tourism might generate more costs than benefits, at least for some residents.

In addition, the focus of this article has been on cognitive bases for attitudes, but there are also affective (emotional) bases for attitudes (e.g., Eagly, Mladinic, and Otto 1994). Although tourism's positive and negative impacts might generate cognitive inputs to roughly the same extent, tourism's negative impacts might be more likely than tourism's positive impacts to generate affective inputs. For example, a resident who does not work in the tourism industry may know that tourism generates jobs and increases

traffic congestion. However, this resident might be more likely to have a negative affective response to sitting in a traffic jam attributed to tourism than to have a positive affective response when seeing a neighbor work at a restaurant frequented by tourists.

Similarly, the salience of outcomes associated with tourism may be affected by frequency of exposure. Residents may experience traffic congestion more frequently than they think about tourism-related jobs. Given that salient beliefs are those that most affect attitude, this imbalance in modes and frequency of experience may increase the likelihood of negative attitudes.

Moreover, the principles of conditioning might explain negative attitudes in this community. It is likely that some residents have viewed, and promoted, tourism as a replacement for the logging industry. This pairing might negatively affect attitudes toward tourism through two mechanisms. First, residents would likely make an implicit comparison between tourism-related jobs and logging-related jobs. Such a comparison would lead to lower perceived tourism benefits than a comparison between tourism-related jobs and unemployment. Second, attitudes toward logging, as the traditional community industry, are likely to be cognitively embedded and thus resistant to change. If tourism is paired in opposition to forestry, a positive change in attitude toward tourism may require a negative change in attitude toward the associated object, logging. Because attitudes toward logging are resistant to change, so, too, will be attitudes toward tourism.

*Aspects of the recipient and her previous attitude.* In McGuire's (1972) information processing paradigm, aspects of the message recipient may affect attitude change. For example, recipient intelligence may be positively associated with message reception (attention and comprehension), but negatively associated with message yielding



(acceptance); given certain non-linear relationships, maximum predicted attitude change may occur in residents of average intelligence (Eagly and Chaiken 1993:262).

Cognitive consistency theory (e.g., dissonance theory) and social judgment theory explicate how prior attitudes might distort resident perceptions of pro-tourism messages. In social judgment theory, residents will have a latitude of acceptance vis-à-vis their attitude toward tourism. When a statement or position contained in a persuasive message falls in or near this latitude of acceptance, the message is assimilated and attitude change occurs. However, when the message falls in the latitude of rejection, its content will be negatively evaluated and attitude change will be inhibited. Messages that are widely discrepant from prior attitudes may even have a boomerang effect, causing residents to shift their attitudes in the direction opposite that intended by the persuasive communication (Eagly and Chaiken 1993:368).

*Aspects of the message source.* Anderson's (1991) information integration theory provides a framework for understanding the importance of message source. In this approach, the resident evaluation of persuasive communication involves both scale value and weight. Scale value is the position of the message on the attitude continuum (e.g., very favorable) while weight is the impact with respect to the resident's attitude. The tourism communication campaign might stress scale value at the expense of weight. If the message was very favorable, yet was communicated by a person or agency viewed as lacking credibility, residents would likely discount the scale value because of perceived bias. Moreover, they might discount the weight because of perceived lack of expertise (this effect might also be explained by principles of attribution theory). Source credibility would likely be particularly important for "low involvement" individuals,

those with relatively unformed attitudes. Such individuals might resort to heuristics, such as relying on source credibility, in the process of attitude formation and change.

How, then, might persuasive communication be modified to increase its effectiveness? First, based on the EV model, reaffirmation of prior beliefs (e.g., that tourism creates jobs) might be less effective than strengthening the evaluative aspects of these beliefs (e.g., creating jobs is important given high unemployment) or strengthening beliefs about other positive outcomes associated with tourism (e.g., tourists bring new ideas and make the community more dynamic). Therefore, current resident beliefs and values should be identified, and persuasive communication should focus on strengthening those beliefs and values that have not yet been associated with tourism. In addition, the message could provide both cognitive and affective stimuli. Second, the message should avoid pairing tourism with decline in traditional industries like forestry. Above all, residents should not be led to believe that tourism is the cause of such decline.

Third, messages might be tailored to current attitudes and corresponding latitudes of acceptance. That is, messages should not include statements that are so discrepant from current beliefs regarding tourism that they generate a backlash in attitudes. Indeed, inoculation theory suggests that inclusion within pro-tourism messages of statements recognizing tourism's negative impacts may actually increase favorableness, particularly if residents do not yet have well-formed attitudes. This message may inoculate residents to more extreme statements of negative impacts. King, Pizam and Milman (1993) note that despite industry efforts to ignore negative impacts, these impacts are generally well known. Recognizing them within persuasive messages might not only inoculate residents

to more extreme criticisms, but might also increase message credibility. Moreover, this recognition may lead to mitigation, thereby improving actual impacts.

Fourth, messages should be presented not only by chambers of commerce or visitor bureaus, whose credibility might be questioned, but also by formal and informal local leaders and credible sources outside the community. For example, data on the number of jobs created might be more believable when the study on which they are based is performed by a university rather than by a chamber of commerce. Such credibility and diversity in message source would be expected to increase message effectiveness.

In summary, social psychological theories and principles can be used to generate several testable hypotheses regarding formation and change of resident attitudes toward tourism. This example illustrates only selected theories and principles; others, such as the elaboration likelihood model or the heuristic-systematic model, should also be considered. Additional research will be necessary to identify which theories are the most relevant in this context. Given the dynamic and complex nature of attitude formation and change, longitudinal and qualitative research may be particularly valuable. Hopefully, this research will increase our understanding of the actions necessary to maintain mutually-beneficial relationships between communities and tourism development.

## 5. SUMMARY

This final chapter briefly summarizes the findings and recommendations presented in each of the three manuscript chapters. The analysis described in Chapter 2 indicates that residents are willing to pay quite substantial amounts to mitigate impacts associated with tourism. Adjusted mean WTP for the noise, congestion, and housing commodity models is, respectively, \$130, \$186, and \$161 per household per year. Adjusted mean WTP for the policy models is \$95, \$110, and \$103. The magnitude of these amounts signifies that tourism's economic benefits have come at a substantial social cost.<sup>24</sup>

Although the CV analysis presented here is a promising step toward integrating tourism's impacts by measuring them in a common metric, it is just a starting point. First, the WTP estimates for the scenario mitigation programs need to be converted to WTP for the specific level of social impacts attributable to tourism. Ultimately, the goal is to develop a valuation function that links WTP to different levels and types of tourism development. With similar functions for tourism's economic and environmental impacts,

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<sup>24</sup>As noted elsewhere, these WTP estimates are for the mitigation programs presented in the scenarios, and these programs mitigate problems not solely attributable to tourism. However, preliminary analysis suggests that the level of traffic mitigated in the congestion scenario may underestimate the actual level of traffic caused by tourism. On average across communities, vehicle counts on Highway 101 during the peak tourist months of July and August are approximately twice that of January. It is likely that (1) some of the increase may be due to increased residential or commercial traffic during peak months and that (2) there is some tourism-related traffic in January. If one assumes that these considerations are roughly off-setting, then approximately 50% of the traffic during peak months can be attributable to tourism. Therefore, the WTP estimate of \$186 is conservative (it is based on the average of the 25% and the 50% reduction scenarios).

the most desirable development path, based on the metric of economic value, can be determined.

Second, as with all new applications, it should be applied several times, in different contexts and to different impacts, to determine its suitability for the task. Where possible, it should be implemented in conjunction with other economic methodologies, such as discrete choice analysis (e.g., Adamowicz, Louviere, and Williams 1994), and with non-economic methodologies.

The analysis in Chapter 3 provides guidance for future CV applications. There has been renewed interest in why people respond the way they do to CV scenarios. Of particular importance is how actual respondent motivations compare with researcher assumptions concerning these motivations. Because these assumptions affect data analysis, they affect economic value estimates. The first component of Chapter 3 illustrates the use of a relatively thorough No vote follow-up system that was designed to better understand respondent motivations and, therefore, derive more accurate economic value estimates. Although this system is an improvement over traditional methods and is easy to implement in large-sample surveys, yet more thorough evaluations of respondent motivations should be, and have been, implemented in case studies and/or in pre-tests (e.g., Schkade and Payne 1994).

The second component of Chapter 3 evaluates the existence of scope effects and the dependence of sensitivity evaluations on the test utilized. Scope effects were not found in the present data set, and it was shown that conclusions regarding scope effects may be test-dependent. It appears that CV critics have targeted scope sensitivity as a potential Achilles' heel, and the few studies that have not found sensitivity have been

widely cited as evidence that CV is invalid. As a result, it is likely that scope evaluations will continue even though (1) the vast majority of studies have found sensitivity, (2) those that have not found sensitivity have been methodologically flawed, and (3) lack of sensitivity does not necessarily indicate that CV is invalid.<sup>25</sup>

The third component of Chapter 3 evaluated the stability of CV estimates across formats. The present data set lends modest support to the hypothesis that mail surveys provide the time necessary for adequate respondent evaluation of budget constraints. Because the telephone and in-person formats provide opportunities to (1) more thoroughly probe vote responses and (2) increase response rates, it is likely that they will remain the recommended formats. Nonetheless, surveys conducted in these formats should incorporate lessons learned from format comparisons, including the importance of providing adequate time for responses and of minimizing interviewer bias.

Chapter 5 is a synthesis and extension of resident attitude modeling. A general model is developed, and two sets of specific models are evaluated using structural equation modeling (SEM). The value-attitude models indicate that, for the present data set, the strength of resident values regarding economic gain better predict attitudes than do values regarding disruption within the community. The expectancy-value models indicate that perceived economic and congestion impacts have a greater effect on attitudes than do perceived crime and aesthetic impacts. In addition, the data support the hypothesis that demographic variables affect attitudes indirectly through values, but not directly.

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<sup>25</sup>Although it is not widely discussed, the fact that there are alternate explanations for lack of scope effects (see Section 3.1.3) means that critics cannot conclusively reject CV on this basis.

Even more so than for the CV application, application of these social psychological models to the present data set is only a starting point. Their full power and suitability must be evaluated in other contexts, utilizing survey items developed specifically for the models. Nonetheless, the present analysis suggests that these models serve as useful frameworks from which to analyze resident attitudes. Moreover, it is hoped that the illustration of SEM's relevance will encourage its employment in other resident attitude analyses. Lastly, several other social psychological theories and principles were presented in order to suggest additional directions for future research.

## BIBLIOGRAPHY

- Adamowicz, W., J. Louviere, and M. Williams. 1994. Combining Revealed and Stated Preference Methods for Valuing Environmental Amenities. *Journal of Environmental Economics and Management* 26:271-292.
- Ahearn, M.C. 1984. An Analysis of Contingent Valuation Applied to Air Quality and Public Safety from Crime. Ph.D. dissertation, Oregon State University, USA.
- Ajzen, I. 1988 *Attitudes, Personality, and Behavior*. Chicago: Dorsey.
- Ajzen, I. and M. Fishbein. 1980 *Understanding Attitudes and Predicting Social Behavior*. Englewood Cliffs, NJ: Prentice-Hall.
- Allen, L.R., H.R. Hafer, P.T. Long, and R.R. Perdue. 1993 Rural Residents' Attitudes Toward Recreation and Tourism Development. *Journal of Travel Research* 31(4):27-33.
- Anderson, N.H., ed. 1991 *Contributions to Information Integration Theory (Vols. 1, 2, and 3)*. Hillsdale, NJ: Erlbaum.
- Ap, J. 1992a. Residents' Perceptions of Tourism Impacts. *Annals of Tourism Research* 19:665-690.
- Ap, J. 1992b Understanding Host Residents' Perceptions of the Impacts of Tourism Through Social Exchange Theory. Ph.D. Dissertation, Texas A & M University, USA.
- Arrow, K., R. Solow, P. Portney, E. Leamer, R. Radner and H. Schuman. 1993. Report of the NOAA Panel on Contingent Valuation. *Federal Register* 58:4602-4614.
- Belisle, F.J. and D.R. Hoy. 1980. The Perceived Impact of Tourism by Residents. *Annals of Tourism Research* 7:83-101.
- Berrens, R. 1993. The Accuracy, Applicability and Transferability of Contingent Valuation Measures for Nonmarket Goods. Ph.D. dissertation, Oregon State University, USA.
- Bostedt, G. and L. Mattsson. 1995. The Value of Forests for Tourism in Sweden. *Annals of Tourism Research* 22:671-680.
- Boyle, K.J., W.H. Desvousges, F.R. Johnson, R.W. Dunford, and S.P. Hudson. 1994. An Investigation of Part-Whole Biases in Contingent-Valuation Studies. *Journal of Environmental Economics and Management* 27:64-83.



- Braithwaite, V.A. and W.A. Scott. 1991 Values. In *Measures of Personality and Social Psychological Attitudes*, eds. J.P. Robinson, P.R. Shaver, and L.S. Wrightsman, 661-753. San Diego, CA: Academic Press.
- Bull, A. 1991. *The Economics of Travel and Tourism*. Melbourne, Australia: Longman Cheshire.
- Byrne, B.M. 1989 *A Primer of LISREL: Basic Applications and Programming for Confirmatory Factor Analytic Models*. New York: Springer Verlag.
- Byrne, B.M. 1994 *Structural Equation Modeling with EQS and EQS/Windows: Basic Concepts, Applications, and Programming*. Thousand Oaks, Calif.: Sage Publications.
- Bystrzanowski, J. 1989. *Tourism as a Factor of Change: A Socio-cultural Study*. Vienna: European Co-ordination Centre for Research and Documentation in Social Sciences.
- Cameron, T.A. 1988. A New Paradigm for Valuing Non-market Goods Using Referendum Data: Maximum Likelihood Estimation by Censored Logistic Regression. *Journal of Environmental Economics and Management* 15:355-79.
- Cameron, T.A. 1991. Interval Estimates of Non-Market Resource Values from Referendum Contingent Valuation Surveys. *Land Economics* 67:413-21.
- Carson, R.T. 1991. Constructed Markets. In *Measuring the Demand for Environmental Quality*, eds. J.B. Braden and C.D. Kolstad 121-162. Amsterdam: North Holland.
- Carson, R.T. and R.C. Mitchell. 1993. The Issue of Scope in Contingent Valuation Studies. *American Journal of Agricultural Economics* 75:1263-1267.
- Carson, R.T. and R.C. Mitchell. 1995. Sequencing and Nesting in Contingent Valuation Surveys. *Journal of Environmental Economics and Management* 28:155-173.
- Carson, R.T., J. Wright, A. Alberini, N. Carson, and N. Flores. 1994. *A Bibliography of Contingent Valuation Studies and Papers*. La Jolla, Calif.: Natural Resource Damage Assessment, Inc.
- Carson, R.T., J. Wright, N. Carson, A. Alberini, and N. Flores. 1995. *A Bibliography of Contingent Valuation Studies and Papers*. La Jolla, Calif.: Natural Resource Damage Assessment, Inc.
- Chou, C-P. and P.M. Bentler. 1995 Estimates and Tests in Structural Equation Modeling. In *Structural Equation Modeling: Concepts, Issues, and Applications*, ed. R.H. Hoyle, 37-55. Thousand Oaks, Calif.: Sage Publications.

- Choy, D.J.L. 1991. Tourism Planning: The Case for 'Market Failure.' *Tourism Management* 313-330.
- Ciriacy-Wantrup, S.V. 1947. Capital Returns from Soil-Conservation Practices. *Journal of Farm Economics* 29:1181-1196.
- Clements, C.J., J.H. Schultz, and D.W. Lime. 1993. Recreation, Tourism, and the Local Residents: Partnership or Co-existence? *Journal of Park and Recreation Administration* 11(4):78-91.
- Cooper, J.C. and J.B. Loomis. 1992. Sensitivity of Willingness to Pay Estimates to Bid Design in Dichotomous Choice Contingent Valuation Models. *Land Economics* 68:211-224.
- Crosby, L.A., M.J. Bitner, and J.D. Gill. 1990. Organizational Structure of Values. *Journal of Business Research* 20:123-134.
- Crotts, J.C. and S.M. Holland. 1993. Objective Indicators of the Impact of Rural Tourism Development in the State of Florida. *Journal of Sustainable Tourism* 1:112-120.
- Dalecki, M.G., J.C. Whitehead, and G.C. Blomquist. 1993. Sample Non-response Bias and Aggregate Benefits in Contingent Valuation: an Examination of Early, Late and Non-respondents. *Journal of Environmental Management* 38:133-143.
- Davis, D., J. Allen, and R.M. Cosenza. 1988. Segmenting Local Residents by Their Attitudes, Interests, and Opinions Toward Tourism. *Journal of Travel Research* 27(2):2-8.
- Davis, R.K. 1964. The Value of Big Game Hunting in a Private Forest. *Transactions of the 29th North American Wildlife Conference*, pp. 393-403.
- Davis, S.W. and H.D. Radtke. 1994. *A Demographic and Economic Description of the Oregon Coast*. Report prepared for the Oregon Coastal Zone Management Association, Inc.
- Degerstrom, N. 1995. Spring Break Hits Town Friday. *Seaside Signal*, March 16, 1995, p. A1.
- De Kadt, E. 1979. *Tourism: Passport to Development?* New York: Oxford University Press.
- Desvousges, W.H., F.R. Johnson, R.W. Dunford, K.J. Boyle, S.P. Hudson, and K.N. Wilson. 1993. Measuring Natural Resource Damages With Contingent Valuation: Tests of Validity and Reliability. In *Contingent Valuation: A Critical Assessment*, ed. J.A. Hausman, 91-164. Amsterdam: North Holland.

- De Vaus, D.A. 1990 *Surveys in Social Research* (2nd ed.). London: Unwin Hyman.
- Diamond, P.A. and J.A. Hausman. 1993. On Contingent Valuation Measurement of Nonuse Values. In *Contingent Valuation: A Critical Assessment*, ed. J.A. Hausman, 3-38. Amsterdam: North Holland.
- Dillman, D. 1978. *Mail and Telephone Surveys*. New York: John Wiley and Sons.
- Duffield, J. and C. Neher. 1991. *Montana Bioeconomics Study—A Contingent Valuation Assessment of Montana Waterfowl Hunting: Hunter Attitudes and Economic Benefits*. Montana Department of Fish, Wildlife, and Parks.
- Eagly, A.H. and S. Chaiken. 1993 *The Psychology of Attitudes*. Orlando, FL: Harcourt Brace Jovanovich.
- Eagly, A.H., A. Mladinic, and S. Otto. 1994 Cognitive and Affective Bases of Attitudes Toward Social Groups and Social Policies. *Journal of Experimental Social Psychology* 30:113-137.
- Feather, N.T. 1994 Values, National Identification and Favouritism Towards the In-group. *British Journal of Social Psychology* 33:467-476.
- Ferris, J.M. 1985. Interrelationships Among Public Spending Preferences: A Micro Analysis. *Public Choice* 45:139-153.
- Fishbein, M. and M.J. Manfredo. 1992 A Theory of Behavior Change. In *Influencing Human Behavior: Theory and Applications in Recreation, Tourism, and Natural Resources Management*, ed. M.J. Manfredo, 29-50. Champaign, IL: Sagamore.
- Forster, J. 1964. The Sociological Consequences of Tourism. *International Journal of Comparative Sociology* 5:217-227.
- Freeman, A.M. 1993. *The Measurement of Environmental and Resource Values*. Washington, D.C.: Resources for the Future.
- Getz, D. 1993 Impacts of Tourism on Residents' Leisure: Concepts and a Longitudinal Case Study of Spey Valley, Scotland. *Journal of Tourism Studies* 4(2):33-44.
- Getz, D. 1994. Residents' Attitudes Towards Tourism: A Longitudinal Study in Spey Valley, Scotland. *Tourism Management* 15:247-258.
- Graham, J.W., S.M. Hofer, and A.M. Piccinin. 1994 Analysis With Missing Data in Drug Prevention Research. In *Advances in Data Analysis for Prevention Intervention Research*, eds. L.M. Collins and L.A. Seitz, 13-63. Rockville, MD: National Institute of Drug Abuse.

- Gregory, R., S. Lichtenstein, and P. Slovic. 1993. Valuing Environmental Resources: A Constructive Approach. *Journal of Risk and Uncertainty* 7:177-197.
- Green, D.P., D. Kahneman, and H. Kunreuther. 1994. How the Scope and Method of Public Funding Affect Willingness to Pay for Public Goods. *Public Opinion Quarterly* 58:49-67.
- Hampicke, U., K. Tampe, H. Kiemstedt, T. Horlitz, U. Walters and D. Timp. 1991. *Die volkswirtschaftliche Bedeutung des Arten- und Biotopschwundes in der Bundesrepublik Deutschland*. Berichte des Bundesumweltamtes 3/91. Berlin: Erich Schmidt Verlag.
- Hanemann, W.M. 1994. Valuing the Environment Through Contingent Valuation. *Journal of Economic Perspectives* 8:19-43.
- Harris, C.C., B.L. Driver, and W.J. McLaughlin. 1989. Improving the Contingent Valuation Method: A Psychological Perspective. *Journal of Environmental Economics and Management* 17:213-229.
- Haukeland, J.V. 1984. Sociocultural Impacts of Tourism in Scandinavia: Studies of Three Host Communities. *Tourism Management* 5:207-214.
- Hausman, J.A., ed. 1993. *Contingent Valuation: A Critical Assessment*. Amsterdam: North Holland.
- Hawkins, D.E. 1993. Global Assessment of Tourism Policy: A Process Model. In *Tourism Research: Critiques and Challenges*, eds. D.G. Pearce and R.W. Butler, 175-200. London: Routledge.
- Heaven, P., C. Stones, E. Nel, G. Huysamen, and J. Louw. 1994. Human Values and Voting Intention in South Africa. *British Journal of Social Psychology* 33:223-231.
- Hensher, D. and L. Johnson. 1981. *Applied Discrete-Choice Modelling*. New York: Halsted.
- Hoehn, J.P. and A. Randall. 1987. A Satisfactory Benefit Cost Indicator from Contingent Valuation. *Journal of Environmental Economics and Management* 14:226-247.
- Homer, P.M. and L.R. Kahle. 1988. A Structural Equation Test of the Value-Attitude-Behavior Hierarchy. *Journal of Personality and Social Psychology* 54:638-646.
- Howe, C.W. and M.G. Smith. 1994. The Value of Water Supply Reliability in Urban Water Systems. *Journal of Environmental Economics and Management* 26:19-30.

- Hoyle, R.H., ed. 1995 *Structural Equation Modeling: Concepts, Issues, and Applications*. Thousand Oaks, Calif.: Sage Publications.
- Husbands, W. 1989 Social Status and Perception of Tourism in Zambia. *Annals of Tourism Research* 16:237-253.
- Jöreskog, K.G. and D. Sörbom. 1993 *LISREL 8: Structural Equation Modeling with the SIMPLIS Command Language*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Kahneman, D. 1986. Comments. In *Valuing Environmental Goods: An Assessment of the Contingent Valuation Method*, eds. R.G. Cummings, D.S. Brookshire, and W.D. Schulze, 185-194. Totowa NJ: Rowman and Allanheld.
- Kahneman, D. and J.L. Knetsch. 1992. Valuing Public Goods: The Purchase of Moral Satisfaction. *Journal of Environmental Economics and Management* 22:57-70.
- Kanninen, B.J. 1995. Bias in Discrete Response Contingent Valuation. *Journal of Environmental Economics and Management* 28:114-125.
- Katz, D. 1960 The Functional Approach to the Study of Attitudes. *Public Opinion Quarterly* 24:163-204.
- Keane, M.J. 1994 Path Analysis Technique. *Annals of Tourism Research* 21:160-165.
- Kelly, I. 1993. Tourist Destination Crime Rates: An Examination of Cairns and the Gold Coast, Australia. *The Journal of Tourism Studies* 4(2):2-11.
- King, B., A. Pizam, and A. Milman. 1993 Social Impacts of Tourism: Host Perceptions. *Annals of Tourism Research* 20:650-665.
- Kristiansen, C.M. and K. Matheson. 1990 Value Conflict, Value Justification, and Attitudes Toward Nuclear Weapons. *Journal of Social Psychology* 130:665-675.
- Landis, R.J., Heyman, E.R., and Koch, G.G. 1978. Average Partial Association in Three-way Contingency Tables: A Review and Discussion of Alternative Tests. *International Statistical Review* 46:237-254.
- Lanham, L. 1994. U.S. 101, Room Tax Issues Split Mayoral Candidates. *Seaside Signal*, November 3, 1994, p. A1.
- Lankford, S.V. 1994 Attitudes and Perceptions Toward Tourism and Rural Regional Development. *Journal of Travel Research* 32(3):35-43.
- Lankford, S.V., J.S.Y. Chen, and W. Chen. 1994 Tourism's Impacts in the Penghu National Scenic Area, Taiwan. *Tourism Management* 15:222-227.

- Lankford, S.V. and D.R. Howard. 1994. Developing a Tourism Impact Attitude Scale. *Annals of Tourism Research* 21:121-139.
- Lind, E.A. and T.R. Tyler. 1988 *The Social Psychology of Procedural Justice*. New York: Plenum Press.
- Lindberg, K., R. Johnson, and R. Berrens. 1995. Contingent Valuation of Rural Tourism Development, with Tests of Scope and Format Stability. Unpublished manuscript. Department of Forest Resources, Oregon State University, USA.
- Liu, J., P. Sheldon, and T. Var. 1987. A Cross-National Approach to Determining Resident Perceptions of the Impact of Tourism on the Environment. *Annals of Tourism Research* 14:17-37.
- Liu, J.C. and T. Var. 1986. Resident Attitudes Toward Tourism Impacts in Hawaii. *Annals of Tourism Research* 13:193-214.
- Loomis, J. and M. King. 1994. Comparison of Mail and Telephone-Mail Contingent Valuation Surveys. *Journal of Environmental Management* 41:309-324.
- Loomis, J., M. Lockwood, and T. DeLacy. 1993. Some Empirical Evidence on Embedding Effects in Contingent Valuation of Forest Protection. *Journal of Environmental Economics and Management* 24:45-55.
- Madrigal, R. 1993. A Tale of Tourism in Two Cities. *Annals of Tourism Research* 20:336-353.
- Madrigal, R. 1995 Personal Values, Traveler Personality Type, and Leisure Travel Style. *Journal of Leisure Research* 27:125-142.
- Madrigal, R. And L.R. Kahle. 1994 Predicting Vacation Activity Preferences on the Basis of Value-System Segmentation. *Journal of Travel Research* 32(3):22-28.
- Maio, G.R. and J.M. Olson. 1994 Value-Attitude-Behavior Relations: The Moderating Role of Attitude Functions. *British Journal of Social Psychology* 33:301-312.
- Maio, G.R. and J.M. Olson. 1995 Relations Between Values, Attitudes, and Behavioral Intentions: The Moderating Role of Attitude Function. *Journal of Experimental Social Psychology* 31:266-285.
- Manfredo, M.J., ed. 1992 *Influencing Human Behavior: Theory and Applications in Recreation, Tourism, and Natural Resources Management*. Champaign, IL: Sagamore.

- Mannesto, G. and J.B. Loomis. 1991. Evaluation of Mail and In-person Contingent Value Surveys: Results of a Study of Recreational Boaters. *Journal of Environmental Management* 32:177-190.
- Mattsson, L. and C.-Z. Li. 1994. Sample Nonresponse in a Mail Contingent Valuation Survey: An Empirical Test of the Effect on Value Inference. *Journal of Leisure Research* 26:182-188.
- McCarty, J.A. and L.J. Shrum. 1994. The Recycling of Solid Wastes: Personal Values, Value Orientations, and Attitudes about Recycling as Antecedents of Recycling Behavior. *Journal of Business Research* 30:53-62.
- McConnell, K.E. 1977. Congestion and Willingness to Pay: A Study of Beach Use. *Land Economics* 53:185-195.
- McCool, S.F. and S.R. Martin. 1994. Community Attachment and Attitudes Toward Tourism Development. *Journal of Travel Research* 32(3):29-34.
- McGuire, W.J. 1972. Attitude Change: The Information-Processing Paradigm. In *Experimental Social Psychology*, C.G. McClintock, ed., pp. 108-141. New York: Holt, Rinehart, and Winston.
- McGuire, W.J. 1989. The Structure of Individual Attitudes and Attitude Systems. In *Attitude Structure and Function*, eds. A.R. Pratkanis, S.J. Breckler, and A.G. Greenwald, 37-69. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Milgrom, P. 1993. Is Sympathy an Economic Value? Philosophy, Economics, and the Contingent Valuation Method. In *Contingent Valuation: A Critical Assessment*, ed. J.A. Hausman, 417-442. Amsterdam: North Holland.
- Milman, A. and A. Pizam. 1988. Social Impacts of Tourism in Central Florida. *Annals of Tourism Research* 15:191-204.
- Mitchell, R.C. and R.T. Carson. 1989. *Using Surveys to Value Public Goods: The Contingent Valuation Method*. Washington, DC: Resources for the Future.
- Murphy, P.E. 1985. *Tourism: A Community Approach*. New York: Methuen.
- Navarro, P. and R. Carson. 1991. Growth Controls: Policy Analysis for the Second Generation. *Policy Sciences* 24:127-152.
- Nickerson, N.P. and G.D. Ellis. 1991. Traveler Types and Activation Theory: A Comparison of Two Models. *Journal of Travel Research* 29(3):26-31.
- Nunnally, J.C. and I.H. Bernstein. 1994. *Psychometric Theory* (3rd ed.). New York: McGraw-Hill.

- Oregon Economic Development Department. 1995. *Regional Strategies Update*, January 1995 Newsletter. Salem, OR: State of Oregon Economic Development Department.
- Oregon Employment Department. 1983. *1983 Oregon Covered Employment and Payrolls: By Industry and County*. Salem, OR: State of Oregon Employment Department.
- Oregon Employment Department. 1988. *1988 Oregon Covered Employment and Payrolls: By Industry and County*. Salem, OR: State of Oregon Employment Department.
- Oregon Employment Department. 1993. *1993 Oregon Covered Employment and Payrolls: By Industry and County*. Salem, OR: State of Oregon Employment Department.
- Pearce, D. 1989. *Tourist Development* (2nd ed.). London: Longman.
- Pearce, P.L., G. Moscardo, and G.F. Ross. 1991. Tourism Impact and Community Perception: An Equity-Social Representational Perspective. *Australian Psychologist* 26(3):147-152.
- Perdue, R.R., P.T. Long, and L. Allen. 1987. Rural Resident Tourism Perceptions and Attitudes. *Annals of Tourism Research* 14:420-429.
- Perdue, R.R., P.T. Long, and L. Allen. 1990. Resident Support for Tourism Development. *Annals of Tourism Research* 17:586-599.
- Peterson, G., B. Driver, and P. Brown. 1990. The Benefits and Costs of Recreation: Dollars and Sense. In *Economic Valuation of Natural Resources*, eds. R. Johnson and G. Johnson, 7-24. Boulder, CO: Westview Press.
- Pindyck, R.S. and D.L. Rubinfeld. 1991 *Econometric Models and Economic Forecasts* (3rd ed.). New York: McGraw-Hill.
- Pizam, A. 1978. Tourism's Impacts: The Social Costs to the Destination Community as Perceived by its Residents. *Journal of Travel Research* 16(4):8-12.
- Portney, P.R. 1994. The Contingent Valuation Debate: Why Economists Should Care. *Journal of Economic Perspectives* 8:3-17.
- Randall, A. 1993. What Practicing Agricultural Economists Really Need to Know About Methodology. Unpublished Manuscript. Department of Agricultural Economics and Rural Sociology, Ohio State University, USA.



- Research Chile. 1991. *Paraguay: Valuación Contingente de Viviendas Sociales. Informe final*. Santiago, Chile: Research Chile.
- Robertson, C. and J.C. Crofts. 1992 Information's Effects on Residents' Perceptions of Tourism Development. *Visions in Leisure and Business* 11:32-37.
- Rokeach, M. 1973 *The Nature of Human Values*. New York: Free Press.
- Ross, G.F. 1992 Resident Perceptions of the Impact of Tourism on an Australian City. *Journal of Travel Research* 30(3):13-17.
- Rothman, R. 1978. Residents and Transients: Community Reaction to Seasonal Visitors. *Journal of Travel Research* 16(3):8-13.
- Ryan, C. and D. Montgomery. 1994 The Attitudes of Bakewell Residents to Tourism and Issues in Community Responsive Tourism. *Tourism Management* 15:358-369.
- SAS Institute. 1990. *SAS/STAT User's Guide, Version 6, Fourth Edition (Volume 1)*. Cary, NC: SAS Institute.
- Schkade, D.A. and J.W. Payne. 1994. How People Respond to Contingent Valuation Questions: A Verbal Protocol Analysis of Willingness to Pay for an Environmental Regulation. *Journal of Environmental Economics and Management* 26:88-109.
- Schokkaert, E. 1987. Preferences and Demand for Local Public Spending. *Journal of Public Economics* 34:175-188.
- Schulze, W.D., R.G. Cummings, D.S. Brookshire, M.A. Thayer, R. Whitworth, and M. Rahmatian. 1983. *Methods Development in Measuring Benefits of Environmental Improvements: Experimental Approaches for Valuing Environmental Commodities*. Vol. 2. Draft Report to Office of Policy Analysis and Resource Management, U.S. Environmental Protection Agency, Washington, D.C.
- Schwartz, S.H. and W. Bilsky. 1987 Toward a Universal Psychological Structure of Human Values. *Journal of Personality and Social Psychology* 53:550-562.
- Sheldon, P.J. and T. Var. 1984. Resident Attitudes to Tourism in North Wales. *Tourism Management* 5:40-47.
- Smith, S. 1994. Environment, Social Issues Top 1995 Agenda Concerns, *TTRA News* 25(5)1.

- Smith, V.K. 1992. Comment: Arbitrary Values, Good Causes, and Premature Verdicts. *Journal of Environmental Economics and Management* 22:71-89.
- Smith, V.K. 1993. Nonmarket Valuation of Environmental Resources: An Interpretive Approach. *Land Economics* 69:1-26.
- Smith, V.L., ed. 1977. *Hosts and Guests: The Anthropology of Tourism*. Philadelphia: University of Pennsylvania Press.
- Stankey, G.H., D.N. Cole, R.C. Lucas, M.E. Petersen, and S.S. Frissell. 1985. *The Limits of Acceptable Change (LAC) System for Wilderness Planning*. USDA Forest Service General Technical Report, INT-176. Ogden, Utah: Intermountain Forest and Experiment Station.
- Stevens, T.H., T.A. More, and R.J. Glass. 1994. Interpretation and Temporal Stability of CV Bids for Wildlife Existence: A Panel Study. *Land Economics* 70:355-363.
- Um, S. and J.L. Crompton. 1987. Measuring Resident's Attachment Levels in a Host Community. *Journal of Travel Research* 25(3):27-29.
- Weinberger, M., G. Thomassen and R. Willecke. 1991. *Kosten des Lärms in der Bundesrepublik Deutschland*. Berichte des Bundesumweltamtes 9/91. Berlin: Erich Schmidt Verlag.
- West, S.G., J.F. Finch, and P.J. Curran. 1995. Structural Equation Models with Nonnormal Variables: Problems and Remedies. In *Structural Equation Modeling: Concepts, Issues, and Applications*, ed. R.H. Hoyle, 56-75. Thousand Oaks, Calif.: Sage Publications.
- Whitehead, J.C. 1990. Measuring Willingness-to-pay for Wetlands Preservation with the Contingent Valuation Method. *Wetlands* 10:187-201.
- Whitehead, J.C. 1994. Item Nonresponse in Contingent Valuation: Should CV Researchers Impute Values for Missing Independent Variables? *Journal of Leisure Research* 26:296-303.
- Whittington, D, V.K. Smith, A. Okorafor, A. Okore, J.L. Liu, and A. McPhail. 1992. Giving Respondents Time to Think in Contingent Valuation Studies: A Developing Country Application. *Journal of Environmental Economics and Management* 22:205-225.
- Wicksell, K. 1967. A New Principle of Just Taxation. In *Classics in the Theory of Public Finance*, eds. R.A. Musgrave and A.T. Peacock. New York: St. Martins.

**APPENDIX**

## APPENDIX: DESCRIPTIVE STATISTICS FOR SURVEY ITEMS

The following are responses to each question contained in the surveys used in this research. The surveys were customized for each community and included information for residents and interviewers that is not reproduced here.

Each respondent was asked the questions on the telephone survey. Half of these respondents were then sent the "tourism" mail survey; the other half were sent the "general" mail survey. Comments beginning with "NOTE" were not on the original surveys and are included here to assist readers.

**Unless otherwise noted, all numbers are percentages of all residents responding to question. Totals may not add to 100 because of rounding or omission of categories with less than one percent.**

### Telephone Survey

#### Part I

Q1. First, please tell me what are the most important industries in your community. (Multiple responses permitted so total percentage may be greater than 100.)

46	Lumber and wood products
48	Fishing
61	Tourism/retail stores
9	Agriculture
1	Retirement
4	Shipping
1	None
6	Other (e.g., hospital, construction)
1	Don't know

Now I'm going to read a list of industries. For each one, please tell me whether you EXPECT that the industry will increase, decrease, or stay the same in your community in the next five years.

	EXPECT			
	Increase	Decrease	Same	Don't know
Q2. Commercial fishing	12	61	25	3
Q3. Lumber and wood products	10	62	25	2
Q4. Tourism/stores	87	2	11	1
Q5. Agriculture	20	14	62	5
Q6. Retirement	89	2	8	1
Q7. High tech. industry	25	9	57	9

I'm going to read the list of industries again. This time, please tell me if you WANT each of these industries to increase, decrease, or stay the same in the next five years:

	WANT			
	Increase	Decrease	Same	Don't care
Q8. Commercial fishing	72	7	20	2
Q9. Lumber and wood prod.	59	15	23	2
Q10. Tourism/stores	64	13	22	2
Q11. Agriculture	64	2	30	4
Q12. Retirement	51	13	33	3
Q13. High tech. industry	68	6	21	5

Q14. In the next five years, would you prefer to see the number of people living in your community stay as it is now, grow a little, grow a lot, or decrease?

Stay as it is now	28
Grow a little	54
Grow a lot	11
Decrease	8
Don't know	0

Q15. Next, I'll read a list of issues that are important for some coast residents. For each one, please tell me how important this issue is to you or your community.

	IMPORTANT?			
	Very	Somewhat	Not	Don't Know
Traffic congestion on Highway 101	67	25	8	0
Lack of low-income housing for needy families	59	29	11	1
Noise or minor crime in residential areas	52	33	14	0

Q16. During the busy tourist season, how often do you interact with tourists during an average week?

Everyday	35
Often, but not everyday	34
Rarely	24
Not at all (SKIP TO Q18)	7

Q17. When you do interact with tourists, how pleasant or unpleasant is it? Is it ...

Very pleasant	29
Pleasant	55
Neither pleasant nor unpleas.	12
Unpleasant	3
Very unpleasant	1
Don't know	1

Q18. In some communities, tourism is concentrated in the summer and in others it is spread throughout the year. For your community, should tourism be ...

Highly concentrated in summer	11
Somewhat concentrated in summer	6
Somewhat spread out	35
Fully spread out	28
Doesn't matter	19
Don't know	1

Q19. Would you prefer that tourism facilities (such as motels and restaurants) be concentrated in one AREA of your community (such as in the downtown area or waterfront) or spread more evenly across the community? Should they be ...

Highly concentrated	11
Somewhat concentrated	15
Somewhat spread across community	36
Fully spread across community	25
Doesn't matter	13
Don't know	1

Q20. Are there places in this community where you would prefer that tourists not go? (Multiple responses permitted for residents saying "yes" so total percentage may be greater than 100.)

81 No

Yes -- Which places?

11	Some residential areas
2	Some campgrounds/recreation areas
1	Beach
3	Other (usually natural areas)
1	Don't know

Q21. In the past five years, have you stopped going somewhere in your community because of the number of tourists there? (Multiple responses permitted for residents saying "yes" so total percentage may be greater than 100.)

70 No

Yes -- Which places?

19	Downtown/old town/city center/stores/restaurants
4	Bayfront/harbor
2	Public parks/campgrounds
5	Beach
3	Highway 101 or other main roads
1	Other
1	Don't know

Q22. What do you think are the most important BENEFITS of tourism development for YOUR COMMUNITY? (Multiple responses permitted so total percentage may be greater than 100.)

60	Money/revenue into community (general community benefit)
39	Money for local businesses (good for hotels, restaurants, etc.)
26	Jobs for local residents
15	Other economic benefits for residents, including property values
3	Revenue for local government
8	Better services, facilities and events
1	Community pride, image
1	Attracts new residents
1	Encourages residents and local government to make community nicer
5	Tourists bring new ideas and culture, are pleasant to interact with
1	None
4	Don't know

Q23. What do you think are the most important PROBLEMS of tourism development in YOUR COMMUNITY? (Multiple responses permitted so total percentage may be greater than 100.)

45	Heavy traffic/congestion on roads (e.g., Highway 101)
9	Crowded parking places
12	Crowding/congestion in downtown/stores/restaurants
7	Crowding/congestion at parks, beaches, and recreation sites
4	Noise
14	Crime
6	Litter
8	Tourists are uncareful/unthinking/rude/disrespectful/unappreciative/impatient
4	Jobs are low income
6	Stress/demand on city services (police, sewer, water, etc.)
1	Raises taxes
2	Disrupts daily life
8	Environmental damage/violation of zoning
2	Inflation, competition for housing
6	Other
7	None
11	Don't know

## Part II

In this next section, I would like to ask you about programs that would deal with issues that are problems in some coastal communities. These programs cost money. One way of paying for them is for your community to set up an independent fund paid for by ALL local households. Fund revenues would be used only for the program described. They will not go to the government.

These programs are HYPOTHETICAL. However, your responses may be used to guide future policies, so please answer the questions as carefully as possible.

NOTE: The "reference months" for each scenario were customized for the situation in each different community. Each resident was asked either the low or the high congestion scenario, not both.

## LOW CONGESTION SCENARIO

The Oregon Department of Transportation is currently developing options for reducing traffic congestion along Highway 101 by, for example, adding turning or passing lanes. Some of the cost of these options may have to be paid by local communities.

We estimate that one option would reduce traffic congestion on Highway 101 by 25 percent during busy periods. This would mean there would be as little traffic congestion on 101 during August as there currently is during May.

1. If you had a chance to vote on a ballot measure that would reduce congestion on Highway 101 by this amount, but would require your household to pay \$\_\_\_\_\_ each year, would you vote for or against it? As with all ballot measures, at least half of the voters would have to support the measure for it to pass.

NOTE: The amount each household would pay (the bid) varied across residents. The votes for and against the measure for each bid are given below:

Bid (\$)	Percent voting For	Percent voting Against	Percent of "Don't Know"
5	56	40	4
10	62	38	0
20	67	30	4
30	89	11	0
40	57	43	0
50	63	33	4
60	63	31	6
75	32	66	2
100	30	63	7
125	40	58	2
150	31	59	10
200	23	69	9
300	6	88	6
350	0	100	0
500	22	74	4
750	22	78	0
1000	8	83	8

NOTE: The following questions were asked only of residents who voted against the measure. The numbers for each response reflect the number, not percentage, of respondents.

1a. And why would you vote against the measure?

- 66 Not a problem
- 22 A problem, but not worth the money
- 56 Can't afford it
- 38 Opposed to taxes/new taxes (GO TO 1b)
- 14 Opposed to government (inefficient, corrupt, etc.) (GO TO 1c)
- 19 Should not have to pay for it/businesses or tourists should pay (GO TO 1d)
- 31 Would not work or would cause more problems than solve (GO TO 1e)



1b. Can you tell me why you are opposed to using taxes to pay for this program?

- 9 Opposed in principle
- 5 Can't afford to pay
- 2 Program isn't worth the money
- 14 Government will waste money
- 4 Too many taxes

1c. If this program was managed by a group not associated with the government, would you vote for the program?

- 3 Yes
- 7 No
- 3 Don't know

1d. If you knew that funding by local residents was the only way to solve this problem, would you vote for the measure?

- 7 No, I still would not vote for the measure
- 1 Yes, I would vote for the measure
- 2 Don't know

1e. If there was a way to make the program work so that the problem would be solved without causing additional problems, would you be willing to vote for the program?

- 8 Yes
- 4 No
- 0 Don't know

## HIGH CONGESTION SCENARIO

The Oregon Department of Transportation is currently developing options for reducing traffic congestion along Highway 101 by, for example, adding turning or passing lanes. Some of the cost of these options may have to be paid by local communities.

We estimate that one option would reduce traffic congestion on Highway 101 by 50 percent during busy periods. This would mean there would be as little traffic congestion on 101 during August as there currently is during January.

1. If you had a chance to vote on a ballot measure that would reduce congestion on Highway 101 by this amount, but would require your household to pay \$\_\_\_\_\_ each year, would you vote for or against it? As with all ballot measures, at least half of the voters would have to support the measure for it to pass.

NOTE: The amount each household would pay (the bid) varied across residents. The votes for and against the measure for each bid is given below:

Bid (\$)	Percent voting For	Percent voting Against	Percent of "Don't Know"
5	68	18	14
10	63	33	4
20	74	15	11
30	75	25	0
40	63	30	7
50	60	35	5
60	57	39	4

75	58	43	0
100	36	62	2
125	44	48	8
150	36	62	3
200	26	74	0
300	22	78	0
500	0	100	0
750	13	80	7
1000	8	75	17

NOTE: The following questions were asked only of residents who voted against the measure. The numbers for each response reflect the number, not percentage, of respondents.

1a. And why would you vote against the measure?

- 60 Not a problem
- 18 A problem, but not worth the money
- 67 Can't afford it
- 23 Opposed to taxes/new taxes (GO TO 1b)
- 11 Opposed to government (inefficient, corrupt, etc.) (GO TO 1c)
- 29 Should not have to pay for it/businesses or tourists should pay (GO TO 1d)
- 21 Would not work or would cause more problems than solve (GO TO 1e)
- 6 Other reason
- 2 Don't know

1b. Can you tell me why you are opposed to using taxes to pay for this program?

- 3 Opposed in principle
- 10 Can't afford to pay
- 5 Government will waste money
- 2 Too many taxes

1c. If this program was managed by a group not associated with the government, would you vote for the program?

- 2 Yes
- 4 No
- 3 Don't know

1d. If you knew that funding by local residents was the only way to solve this problem, would you vote for the measure?

- 9 No, I still would not vote for the measure
- 2 Yes, I would vote for the measure
- 1 Don't know

1e. If there was a way to make the program work so that the problem would be solved without causing additional problems, would you be willing to vote for the program?

- 4 Yes
- 2 No
- 0 Don't know

## HOUSING SCENARIO

Now I would like to ask you about some more programs. Please think of each program separately. Your vote should not depend on whether or not the other programs pass.

The lack of low-income housing is a problem in some coastal communities. One possibility to increase low-income housing is to provide business incentives to developers. This would increase the units available to families that qualify for public-housing programs. These housing units would be located where they would not reduce the value of other houses in the community.

1. If you had a chance to vote on a ballot measure that would provide low-income housing for all the families in your community that qualify, but would require your household to pay \$\_\_\_\_\_ each year, would you vote for or against it? Again, please ignore the other programs.

NOTE: The amount each household would pay (the bid) varied across residents. The votes for and against the measure for each bid is given below:

Bid (\$)	Percent voting For	Percent voting Against	Percent of "Don't Know"
5	82	14	4
10	74	17	9
15	57	39	4
20	70	27	2
30	67	28	6
40	50	43	7
50	67	28	5
60	51	44	5
75	48	46	5
100	45	50	5
125	49	47	4
150	36	56	8
200	38	57	5
300	40	51	9
500	13	88	0
750	9	86	5
1000	19	81	0

NOTE: The following questions were asked only of residents who voted against the measure. The numbers for each response reflect the number, not percentage, of respondents.

1a. And why would you vote against the measure?

70	Not a problem
24	A problem, but not worth the money
141	Can't afford it
54	Opposed to taxes/new taxes (GO TO 1b)
16	Opposed to government (inefficient, corrupt, etc.) (GO TO 1c)
32	Should not have to pay for it/businesses or tourists should pay (GO TO 1d)
73	Would not work or would cause more problems than solve (GO TO 1e)
15	Other reason
6	Don't know

1b. Can you tell me why you are opposed to using taxes to pay for this program?

- 11 Opposed in principle
- 21 Can't afford to pay
- 14 Government will waste money
- 5 Too many taxes

1c. If this program was managed by a group not associated with the government, would you vote for the program?

- 6 Yes
- 6 No
- 2 Don't know

1d. If you knew that funding by local residents was the only way to solve this problem, would you vote for the measure?

- 15 No, I still would not vote for the measure
- 2 Yes, I would vote for the measure
- 0 Don't know

1e. If there was a way to make the program work so that the problem would be solved without causing additional problems, would you be willing to vote for the program?

- 6 Yes
- 13 No
- 1 Don't know

### NOISE/CRIME SCENARIO

Another issue for some coast residents is the amount of noise and minor crimes like burglary, vandalism, and disorderly conduct. One option to address this problem is to increase the number of police officers on patrol during summer and holiday periods. We estimate that the improved enforcement would reduce noise and minor crime violations during these periods by 30%. As a result there would be as little noise and minor crime violations during July and August as there currently is in October.

1. If you had a chance to vote on a ballot measure that would reduce noise and minor crime by this amount, but would require your household to pay \$\_\_\_\_\_ each year, would you vote for or against it? Again, please ignore the other programs.

NOTE: The amount each household would pay (the bid) varied across residents. The votes for and against the measure for each bid is given below:

Bid (\$)	Percent voting For	Percent voting Against	Percent of "Don't Know"
5	58	36	7
10	62	32	6
20	62	32	6
30	78	17	4
40	57	37	5
50	50	38	12
60	60	40	0

75	50	49	1
100	49	48	3
125	44	52	4
150	45	49	6
200	18	79	3
300	27	71	2
500	22	71	8
750	8	83	8
1000	17	83	0

NOTE: The following questions were asked only of residents who voted against the measure. The numbers for each response reflect the number, not percentage, of respondents.

1a. And why would you vote against the measure?

186	Not a problem
33	A problem, but not worth the money
114	Can't afford it
27	Opposed to taxes/new taxes (GO TO 1b)
16	Opposed to government (inefficient, corrupt, etc.) (GO TO 1c)
17	Should not have to pay for it/businesses or tourists should pay (GO TO 1d)
68	Would not work or would cause more problems than solve (GO TO 1e)
5	Other reason
4	Don't know

1b. Can you tell me why you are opposed to using taxes to pay for this program?

6	Opposed in principle
11	Can't afford to pay
1	Program isn't worth the money
3	Government will waste money
3	Too many taxes

1c. If this program was managed by a group not associated with the government, would you vote for the program?

5	Yes
8	No
3	Don't know

1d. If you knew that funding by local residents was the only way to solve this problem, would you vote for the measure?

8	No, I still would not vote for the measure
1	Yes, I would vote for the measure
0	Don't know

1e. If there was a way to make the program work so that the problem would be solved without causing additional problems, would you be willing to vote for the program?

12	Yes
6	No
0	Don't know

NOTE: The following question was asked only of residents of Cannon Beach.

CB1. Last year the Cannon Beach City Council voted to ban short-term vacation rentals effective 1997. If this ban was presented as a ballot measure for citizens to vote on, would you vote for or against it? (Multiple responses permitted for residents saying "against" so total percentage may be greater than 100.)

49 For

Against -- can you tell me why you would vote that way?

8 Not a problem  
 6 Bad image/makes people think we don't want visitors  
 25 Violates private property rights/ability to do what you want  
 10 Financial impact/people need income/would hurt property values  
 4 Alternative/self-regulation would be better  
 4 Other  
 0 Don't know

NOTE: The following question was asked only of residents of Seaside.

SS1. Last year the Seaside City Council voted to restrict ownership of short-term vacation rentals to current owners and their heirs. The result of this regulation will be a slow phaseout of these rentals in Seaside. If this regulation was presented as a ballot measure for citizens to vote on, would you vote for or against it? (Multiple responses permitted for residents saying "against" so total percentage may be greater than 100.)

36 For

Against -- can you tell me why you would vote that way?

3 Not a problem  
 6 Bad image/makes people think we don't want visitors  
 32 Violates private property rights/ability to do what you want  
 11 Financial impact/people need income/would hurt property values  
 1 Alternative/self-regulation would be better  
 3 Other  
 11 Don't know

### Part III

Now I'd like to ask you some questions about you and your household. Again, all responses are CONFIDENTIAL and individual responses will not be reported.

Q1. How many years you have lived in this community?

27	Less than 5 years
20	5 to 9 years
20	10 to 19 years
33	20 or more years

(IF 5 OR MORE SKIP TO Q6)

Q2. Where did you live just before moving to this community?

10	Elsewhere on the Oregon coast
31	In Oregon, but not on the coast
24	In California
12	Washington
2	Idaho
2	Colorado
1	Montana
15	Elsewhere in US
1	Canada
2	Other foreign country

Q3. What was the most important reason or reasons for moving to this community? (Multiple responses permitted so total percentage may be greater than 100.)

29	Natural environment (ocean, forests)
25	Lifestyle (small-town life, quality of life)
27	Job opportunity/closer to job
2	To start a business here
25	Family reasons (be closer to family, moved with family)
5	Cost of living (e.g., cheaper than California)
6	Climate, weather, to get away from earthquakes
1	Better access to medical facilities
8	Other

Q4. Before moving to the coast, did you visit the area as a tourist?

32	No (SKIP TO Q6)
68	Yes

Q5. Would you say that your experience as a tourist ...

18	Was the main reason why you moved to the coast.	
42	Was part of the reason why you moved to the coast.	OR
39	Had nothing to do with why you moved to the coast.	

Q6. In the past five years, have you considered moving away from this community? (Multiple responses permitted for residents saying "yes" so total percentage may be greater than 100.)

65 No

Yes -- Why?

3	Cost of living
4	Lack of cultural/social opportunities
1	Tourism problems generally
1	Congestion/crowding specifically related to tourism
1	Growth problems
2	Opposition to taxes/government
1	Traffic congestion
2	Crowding (downtown, stores, etc.)
8	Personal reasons (not related to community)
11	Job reasons (transferred, opportunities elsewhere)
2	Health reasons (access to medical facilities)
3	Weather
1	Crime/drug problems in community
2	Other (includes going to school)

Q7. In the past five years, have any friends or members of your family moved away from this community? (Multiple responses permitted for residents saying "yes" so total percentage may be greater than 100.)

63 No

Yes -- Why?

2	Cost of living
2	Lack of cultural/social opportunities
1	Tourism problems generally
1	Congestion/crowding related to tourism
1	Growth problems
1	Opposition to taxes/government
9	Personal reasons (not related to community)
24	Job reasons (transferred, opportunities elsewhere)
2	Health reasons (access to medical facilities)
1	Weather
2	Other (includes going to school)

Q8. Do you live in an apartment, a townhouse, a single-family house, or mobile home?

13	Apartment
6	Townhouse/multiplex
69	Single-family house
12	Mobile home/trailer
1	Other

Q9. Do you rent or own your home?

31	Rent
69	Own



Q10. Have you been employed during any part of the past year?

- 41 No (SKIP TO Q17)
- 59 Yes

Q11. In what industry was your primary job during the past year?

- 5 Lumber and wood products (for example, mills, and logging)
- 0 Agriculture (including processing of agricultural products)
- 3 Commercial fishing (including processing of fish products)
- 22 Professional and business services (for example, banking or insurance)
- 15 Retail trade (for example, foodstores and general merchandise)
- 14 Government (including education)
- 10 Construction, maintenance, repair companies
- 2 Arts/craft
- 1 Transport
- 2 Medical/health
- 1 Real estate/property management
- 7 Other
- 18 Tourism (for example, hotels, restaurants, charter fishing)

All those not working in the tourism industry skip to Q16.

Q12. In an average week how many hours do you work in the tourism industry?

- 65 35 or more hours per week
- 30 20 to 35 hours per week
- 5 Less than 20 hours per week

Q13. How many months per year do you work in the tourism industry?

- 71 12 months (all year)
- 15 6 to 12 months
- 14 Less than 6 months

Q14. What industry did you work in before working in the tourism industry?

- 2 Lumber and wood products
- 2 Agriculture
- 7 Commercial fishing
- 13 Professional and business services
- 14 Retail trade
- 4 Government (including education)
- 6 Construction, maintenance, repair companies
- 1 Transport
- 1 Medical/health care
- 16 Other
- 33 None -- first job or only industry (SKIP TO Q17)

Q15. Is your salary in the tourism industry less per year than it was in your previous job?

50 No

Yes -- Was it ...

7 Very close to what you were earning before  
 15 About three-quarters of what you were earning before  
 16 About one-half of what you were earning before  
 7 Less than one-half of what you were earning before  
 4 Don't know

NOTE: The following question was skipped for those working in the tourism industry.

Q16. Even if you do not work in the tourism industry itself, your job may depend indirectly on tourism. In your opinion, how dependent is your current job on tourism? Is it ....

16 Very dependent  
 40 Somewhat dependent  
 44 Not at all dependent

Q17. How many of your friends or relatives work in the tourism industry?

41 None  
 39 A few  
 10 Many  
 10 Most or all

GENDER: 39 Male  
 61 Female

## Mail Survey, Tourism Version

NOTE: The two following sets of items are related and were on opposing pages in the survey. Thus, the respondent could see his/her rating of the change caused by tourism while he/she assessed how he/she felt about that change.

Please tell us how **tourism** has changed your community in the last five years. For each of the following items, please circle the number that shows the kind of change caused by tourism. Try to ignore how the item has been affected by other things, such as changes in the timber and fishing industries.

For example, if you feel that tourism has led to a moderate increase in the number of movie theaters in your community, you would circle as follows:

ITEM	<b>HOW HAS TOURISM CHANGED THE ITEM?</b>					
	Large Decrease	Moderate Decrease	No Change	Moderate Increase	Large Increase	Don't Know
number of movie theaters in the area .....	1	2	3	4	5	DK

ITEM	<b>HOW HAS TOURISM CHANGED THE ITEM?</b>					
	Large Decrease	Moderate Decrease	No Change	Moderate Increase	Large Increase	Don't Know
number of full-time jobs available for current residents .....	2	8	17	59	5	9
amount of traffic in the area .....	0	1	5	34	58	1
price of groceries and household goods .....	0	2	31	46	15	6
number of shops in the area .....	0	3	9	60	26	3
amount of property taxes residents pay .....	0	1	11	35	36	17
attractiveness of the community .....	3	9	18	50	16	3
value of houses in the area .....	0	0	6	29	59	6
standard of living for your household .....	1	11	63	22	2	1
number of people living in the community .....	1	1	8	73	12	6
number of restaurants, entertainment, and recreation places in the area .....	0	1	13	69	14	2
community spirit among local residents .....	4	12	42	31	2	10
amount of crime in the community .....	0	2	32	45	14	7
availability of parking in residential areas .....	6	23	52	10	4	6

number of people at my favorite recreation sites (beaches, fishing holes, etc.)	0	2	11	54	30	3
amount of litter in the community	1	3	24	50	19	5
amount of local government revenue from taxes on tourism businesses	0	0	11	42	8	40
amount of noise and unruly behavior in residential areas	0	2	45	38	9	7
number of part-time jobs available for current residents	1	6	11	55	15	12
availability of downtown parking	19	32	27	16	4	2
attractiveness of the scenery along Highway 101	10	14	48	21	6	2

We'd also like to know how you **feel** about each of these changes. In our example on the last page we circled the number 4 to show that there was a moderate increase in the number of movie theaters in the area. If you really like to go to the movies, on this page you would circle 5 to show that you like this change a lot.

Try to think only about the **changes** caused by tourism, and not how you feel about that item in general.

ITEM	HOW DO YOU FEEL ABOUT THE CHANGE CAUSED BY TOURISM?					
	Dislike it a lot	Dislike it a little	Neutral	Like it a little	Like it a lot	Don't Know
number of movie theaters in the area	1	2	3	4	5	DK

ITEM	HOW DO YOU FEEL ABOUT THE CHANGE CAUSED BY TOURISM?					
	Dislike it a lot	Dislike it a little	Neutral	Like it a little	Like it a lot	Don't Know
number of full-time jobs available for current residents	7	5	19	22	37	9
amount of traffic in the area	33	34	25	5	3	0
price of groceries and household goods	20	24	47	3	1	5
number of shops in the area	1	7	32	32	24	3
amount of property taxes residents pay	39	21	23	1	1	16
attractiveness of the community	6	10	23	26	33	1
value of houses in the area	16	19	24	20	14	7

standard of living for your household .....	10	8	62	10	8	3
number of people living in the community .....	5	16	44	24	8	3
number of restaurants, entertainment, and recreation places in the area .....	1	6	29	40	21	2
community spirit among local residents .....	5	9	43	21	15	7
amount of crime in the community .....	39	22	26	3	4	6
availability of parking in residential areas .....	11	28	49	5	3	4
number of people at my favorite recreation sites (beaches, fishing holes, etc.) .....	11	31	45	8	4	2
amount of litter in the community .....	41	29	25	2	2	2
amount of local government revenue from taxes on tourism businesses .....	5	4	29	20	12	30
amount of noise and unruly behavior in residential areas .....	21	29	43	1	2	5
number of part-time jobs available for current residents .....	6	6	18	33	26	10
availability of downtown parking .....	25	32	30	8	4	1
attractiveness of the scenery along Highway 101 .....	14	14	38	14	17	3

There are different types of tourism, including hotels and motels, vacation rentals, destination resorts, and day visitors. Destination resorts are self-contained hotel and restaurant complexes, usually outside cities. We would like your opinion about these different types of tourism and their effects.

For each item, please circle the number that shows your opinion of each type of tourism. If you do not know the effect of that type of tourism, please circle DK.

Your opinion of the **number of jobs** created by:

	<i>Hardly Any</i>	<i>A Few</i>	<i>Many</i>	<i>Very Many</i>	<i>Don't Know</i>
Hotels and motels .....	3	33	40	14	10
Long-term vacation rentals (1 week or longer) .....	25	36	10	2	26
Short-term vacation rentals (less than 1 week) .....	22	32	17	6	24
Destination resorts (like Salishan) .....	10	18	25	10	37
Day visitors .....	9	26	32	16	18

Your opinion of the amount of **disruption (congestion, noise, and so on)** created by:

	<i>None</i>	<i>Small Amount</i>	<i>Moderate Amount</i>	<i>Large Amount</i>	<i>Don't Know</i>
Hotels and motels .....	12	42	29	6	10
Long-term vacation rentals (1 week or longer) .....	20	39	18	3	19
Short-term vacation rentals (less than 1 week) .....	17	34	20	12	17
Destination resorts (like Salishan) .....	21	28	14	5	31
Day visitors .....	8	29	34	20	9

Your opinion of the **effect on the natural environment** created by:

	<i>Very Negative</i>	<i>Negative</i>	<i>Positive</i>	<i>Very Positive</i>	<i>Don't Know</i>
Hotels and motels .....	8	40	28	1	23
Long-term vacation rentals (1 week or longer) .....	6	33	29	2	30
Short-term vacation rentals (less than 1 week) .....	12	35	24	1	28
Destination resorts (like Salishan) .....	8	23	25	4	40
Day visitors .....	16	36	25	2	21

During the telephone interview, we asked what you expect and want to happen to some coastal industries. Now we would like to ask the same kind of questions about tourism in your community.

For each type of tourism, please circle whether you **EXPECT** the type of tourism to decrease, stay about the same, or increase in the next five years.

I **EXPECT** this type of tourism to:

	<i>Decrease</i>	<i>Stay about the same</i>	<i>Increase</i>	<i>Don't Know</i>
Hotels and motels .....	1	23	74	1
Long-term vacation rentals (1 week or longer) .....	4	37	53	7
Short-term vacation rentals (less than 1 week) .....	9	27	57	7
Destination resorts (like Salishan) .....	3	26	49	23
Day visitors .....	2	13	82	4

Next, for each type of tourism, please circle whether you **WANT** the type of tourism to decrease, stay the same, or increase in the next five years.

I **WANT** this type of tourism to:

	Decrease	Stay about the same	Increase	Don't Care
Hotels and motels . . . . .	3	55	38	5
Long-term vacation rentals (1 week or longer) . . . . .	7	45	39	9
Short-term vacation rentals (less than 1 week) . . . . .	17	43	33	7
Destination resorts (like Salishan) . . . . .	6	36	41	17
Day visitors . . . . .	15	42	38	6

NOTE: The following questions were customized for each respondent based on community of residence, bids used in the telephone survey, and responses from telephone survey. The blank spaces were filled in based on this customization.

During the telephone interview we asked if you would vote for or against a program that would reduce traffic congestion on Highway 101 by \_\_\_\_% during busy periods (so that traffic during August would be about the same as it currently is in \_\_\_\_\_). This program would cost your household \$ \_\_\_\_ each year. You said that you would vote \_\_\_\_\_ this program.

Sometimes people change their mind about how they would vote, perhaps because there isn't much time to think about it on the telephone. Have you changed your mind about this program? Please circle one of the following answers:

91 No, I would still vote \_\_\_\_\_ this program

9 Yes, I have changed my mind and would vote \_\_\_\_\_ this program.

In some communities, it makes sense to address two or three problems at the same time. This could be done with packages that combine two or three programs. As before, to pay for a package every household in the community would have to contribute money to an independent fund. We would like to ask you about two of these packages.

**The first package** would:

- AND
1. Provide low-income housing for all the families in your community that qualify.
  2. Increase police patrols to reduce noise and minor crime by 30%, so that noise and minor crime during \_\_\_\_\_ would be about the same as it currently is in \_\_\_\_\_.

If you had a chance to vote on a ballot measure that would implement this package but would require your household to pay \$ \_\_\_\_ each year, would you vote for or against it? As with all ballot measures, at least half the voters would have to vote for the measure for it to pass.

NOTE: The amount each household would pay (the bid) varied across residents. More bid levels were offered for these packages than for individual programs, so responses for averages of three bids at a time are presented here. The votes for and against the measure for each average bid are given below.

Ave. bid (\$)	Percent voting For	Percent voting Against	Percent of "Don't Know"
22	58	21	21
58	37	44	19
85	40	53	7
109	18	73	9
146	60	40	0
186	20	56	24
243	21	50	29
309	23	62	15
391	17	69	14
629	20	60	20
1039	9	74	17

**The second package would:**

- 1. Reduce traffic congestion on Highway 101 by 50%, so that traffic during August would be about the same as it currently is in January.
- AND
- 2. Provide low-income housing for all the families in your community that qualify.
- AND
- 3. Increase police patrols to reduce noise and minor crime by 30%, so that noise and minor crime during \_\_\_\_\_ would be about the same as it currently is in \_\_\_\_\_.

If you had a chance to vote on a ballot measure that would implement this package but would require your household to pay \$ \_\_\_\_ each year, would you vote for or against it?

NOTE: The amount each household would pay (the bid) varied across residents. More bid levels were offered for these packages than for individual programs, so responses for averages of three bids at a time are presented here. The votes for and against the measure for each average bid are given below.

Ave. bid (\$)	Percent voting For	Percent voting Against	Percent of "Don't Know"
29	43	29	29
98	32	59	9
134	18	73	10
159	13	63	25
235	31	56	13
270	20	47	33
293	5	84	11
371	28	59	13
507	21	61	18
653	16	84	0
823	17	83	0
950	7	70	23
1222	15	85	0



NOTE: Several questions concerning the community, economy, and local government policy were asked in both the tourism and general surveys. Those results are combined and presented in the general survey, which follows this tourism survey. The following question was asked only on the tourism survey.

We are also interested in your opinions on some general issues. Please tell us how much you agree or disagree with the following statements.

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree	Don't Know
In general, it is okay to allow some environmental impact in order to increase the number of jobs available in this community . . . . .	17	22	10	31	18	3

What do you think is the most important concern facing your community right now?

Responses to this question have not yet been analyzed.

NOTE: The following demographic data are for both the tourism and the general surveys.

Finally, we would like to ask a few questions about you and your household. Please remember that all responses are CONFIDENTIAL and that individual responses will NOT be reported.

What is your age group?

8	18-29 years old
18	30-39 years old
20	40-49 years old
17	50-59 years old
39	60 years old or older

What is your highest level of education?

0	Some elementary school
7	Some high school
22	Completed high school
7	Completed vocational school or apprenticeship
32	Some college
20	Completed college
12	Completed a graduate degree

Are you currently in school?

4	Yes
96	No

How many people, including yourself, live in your household?

26	1 person
45	2 people
13	3 people
9	4 people
5	5 people
2	6 or more people

If you own your home, what is the assessed value of the property? That is, how much do you think your home would sell for if you wanted to sell it?

5	Less than \$20,000
3	to \$34,999
8	\$35,000 to \$49,999
10	\$50,000 to \$64,999
15	\$65,000 to \$79,999
27	\$80,000 to \$124,999
21	\$125,000 to \$199,999
11	\$200,000 or more

Into what group does your **total household** income fall (before taxes)?

13	Less than \$10,000
19	\$10,000 to \$19,999
22	\$20,000 to \$29,999
16	\$30,000 to \$39,999
11	\$40,000 to \$49,999
13	\$50,000 to \$74,999
4	\$75,000 to \$99,999
3	\$100,000 or more

About how much of your total household income is dependent on tourism (either from employment or from investments in the tourism industry)?

31	None
19	Some, but less than a quarter (25%)
7	More than a quarter but less than a half (25-50%)
5	More than a half but less than three quarters (50-75%)
8	More than three quarters (75-100%)

## Mail Survey, General Version

First, please tell us about your community. For each statement, please circle the number that shows how much you agree or disagree with the statement. For example, if people are really great at helping each other out in times of need, you would circle as follows:

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree	Don't Know
People in this community help each other in times of need .....	1	2	3	4	5	DK
	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree	Don't Know
This community is one of the most attractive on the Oregon coast .....	2	8	6	30	53	1
Local residents are proud of this community .....	1	4	9	39	45	1
If I had the opportunity, I would move away from this community .....	51	13	13	11	8	4
Local residents work well together to deal with issues that affect the community .....	7	22	18	39	10	3
Residents sometimes need to make personal sacrifices for the good of the community .....	4	6	19	47	20	4
I enjoy spending time with other people in this community .....	2	2	12	36	47	1
Compared to other communities, this community doesn't have much going for it .....	49	26	7	11	6	2
Tourists visiting the coast are pretty much the same kind of people as those who live here .....	13	30	13	29	12	3
In this community, newer residents and longer-term residents don't get along well .....	18	26	18	22	9	7

What do you think is the most important concern facing your community right now?

Responses to this question have not yet been analyzed.

Next, please tell us what you think is happening with the local economy in your community. Again, please circle the number that shows how much you agree or disagree with the statement.

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree	Don't Know
The success of the local economy depends on the hard work of residents and the effective leadership of local government .....	2	7	3	35	52	1

This community is able to deal with changes in the local economy and still do okay .....	6	18	11	52	10	3
The local economy is mostly controlled by decisions made in Salem, Portland and Washington, DC. Residents can't control what happens. ....	17	32	9	22	14	7
Creating jobs for residents should be a high priority for this community .....	1	5	7	25	62	0
Fish resources belong to everyone, so it is okay for fishermen from outside Oregon to fish off the Oregon coast .....	29	28	14	16	11	2
Newcomers bring skills and business opportunities that contribute to the local economy .....	2	9	11	45	33	1
Residents must accept changes if they want to keep the local economy healthy .....	2	6	10	45	36	1

There are several different industries on the coast, including commercial fishing, lumber and wood products, tourism, and agriculture. We can also think of retirement as an industry since it brings in money from outside the community.

In many communities, these industries are changing. To help us identify how these changes are affecting your community, we would like your opinion about the different industries. Please circle the number that shows how each industry rates for each item.

Your opinion of the **number of jobs** created by:

	<i>Hardly Any</i>	<i>A Few</i>	<i>Many</i>	<i>Very Many</i>	<i>Don't Know</i>
Commercial fishing .....	17	34	33	9	6
Lumber and wood products .....	13	29	40	12	6
Tourism .....	0	7	37	53	2
Agriculture .....	24	48	16	5	8
Retirement .....	4	28	37	27	4

Your opinion of the **quality of jobs** created by:

	<i>Low</i>	<i>Medium/Low</i>	<i>Medium/High</i>	<i>High</i>	<i>Don't Know</i>
Commercial fishing .....	19	39	27	5	11
Lumber and wood products .....	12	30	43	6	9
Tourism .....	15	32	31	19	4
Agriculture .....	23	37	20	6	14
Retirement .....	8	38	31	15	9

Your opinion of the **effect on the natural environment** created by:

	<i>Very Negative</i>	<i>Negative</i>	<i>Positive</i>	<i>Very Positive</i>	<i>Don't Know</i>
Commercial fishing .....	7	34	38	3	19
Lumber and wood products .....	19	38	30	4	9
Tourism .....	4	25	46	16	9
Agriculture .....	4	13	53	10	21
Retirement .....	3	14	50	18	16

Next, we'd like to find out more about these different industries. As you did in the first section, please circle the number that shows how much you agree or disagree with each statement.

	<i>Strongly Disagree</i>	<i>Somewhat Disagree</i>	<i>Neutral</i>	<i>Somewhat Agree</i>	<i>Strongly Agree</i>	<i>Don't Know</i>
Fishing involves understanding and working with nature, and therefore, it is more satisfying than other jobs .....	6	16	29	34	5	9
Tourism helps diversify the local economy, and therefore, it is an important industry for this community .....	1	5	4	35	55	0
The fishing industry can cause a bad smell in town .....	24	18	18	26	12	2
Agriculture is the most basic occupation in our society, and almost all other occupations depend on it .....	11	13	22	30	18	7
Overall, <i>for me personally</i> the benefits of tourism outweigh the costs of tourism .....	11	11	23	29	22	4
Overall, <i>for my community</i> the benefits of tourism outweigh the costs of tourism .....	4	6	12	42	33	3
Logging involves understanding and working with nature, and therefore, it is more satisfying than other jobs .....	12	22	28	21	8	10
Having tourists around really changes this community in ways I don't like .....	22	25	19	23	11	0
Logging can involve clearcuts that ruin the scenery of the area .....	9	9	6	25	51	0

Next, please tell us about the things that make a community special, and whether these things have changed in your community.

**Is living in a community where you can count on your neighbors to help you out in time of need** an important part of what makes a community special?

Very Important	71	Somewhat Important	26	Not Important	3
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Are you currently satisfied with this aspect of your community?

Very Satisfied	45	Somewhat Satisfied	46	Not Satisfied	9
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In the last five years, has this aspect of your community changed?  
(Don't know = 3%)

Changed for the worse	17	Stayed the same	65	Changed for the better	16
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Why has it changed?

Responses to this question have not yet been analyzed.

**Is having jobs that depend on natural resources, like fishing, logging, and farming,** an important part of what makes a community special?

Very Important	45	Somewhat Important	44	Not Important	11
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Are you currently satisfied with this aspect of your community?

Very Satisfied	13	Somewhat Satisfied	56	Not Satisfied	30
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In the last five years, has this aspect of your community changed?  
(Don't know=3%)

Changed for the worse	58	Stayed the same	34	Changed for the better	5
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Why has it changed?

Responses to this question have not yet been analyzed.

**Is living in an area with natural scenery and opportunities for outdoor recreation** an important part of what makes a community special?

Very Important	89	Somewhat Important	10	Not Important	0
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Are you currently satisfied with this aspect of your community?

Very Satisfied	62	Somewhat Satisfied	32	Not Satisfied	6
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In the last five years, has this aspect of your community changed?  
(Don't know=1%)

Changed for the worse	24	Stayed the same	60	Changed for the better	15
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Why has it changed?

Responses to this question have not yet been analyzed.

<b>Is living in a community where things don't change much</b> an important part of what makes a community special?	Very Important	16	Somewhat Important	50	Not Important	35
Are you currently satisfied with this aspect of your community?	Very Satisfied	19	Somewhat Satisfied	59	Not Satisfied	21
In the last five years, has this aspect of your community changed? (Don't know=2%)	Changed for the worse	23	Stayed the same	51	Changed for the better	24

Why has it changed?

Responses to this question have not yet been analyzed.

Are there other things that make your community special? Please list them here:

- 4 Citizen involvement in local government
- 33 Natural beauty, recreation, or climate
- 17 Arts, cultural and other community activities
- 25 Community spirit, nice people, concern for other residents
- 12 Small size, absence of congestion, crime, litter, and other city problems
- 10 Other (including good shopping and dining facilities)

NOTE: The following questions were customized for each respondent based on community of residence, bids used in the telephone survey, and responses from telephone survey. The blank spaces were filled in based on this customization.

During the telephone interview we asked if you would vote for or against a program that would reduce traffic congestion on Highway 101 by \_\_\_\_% during busy periods (so that traffic during August would be about the same as it currently is in \_\_\_\_\_). This program would cost your household \$\_\_\_\_ each year. You said that you would vote \_\_\_\_\_ this program.

Sometimes people change their mind about how they would vote, perhaps because there isn't much time to think about it on the telephone. Have you changed your mind about this program? Please circle one of the following answers:

87 No, I would still vote \_\_\_\_\_ this program

13 Yes, I have changed my mind and would vote \_\_\_\_\_ this program.

In some communities, it makes sense to address two problems at the same time. This could be done with packages that combine two programs. As before, to pay for a package every household in the community would have to contribute money to an independent fund. We would like to ask you about two of these packages.

**The first package** would:

1. Reduce traffic congestion on Highway 101 by 50%, so that traffic during August would be about the same as it currently is in January.

AND

2. Increase police patrols to reduce noise and minor crime by 30%, so that noise and minor crime during \_\_\_\_\_ would be about the same as it currently is in \_\_\_\_\_.

If you had a chance to vote on a ballot measure that would implement this package but would require your household to pay \$ \_\_\_\_ each year, would you vote for or against it? As with all ballot measures, at least half the voters would have to vote for the measure for it to pass.

NOTE: The amount each household would pay (the bid) varied across residents. More bid levels were offered for these packages than for individual programs, so responses for averages of three bids at a time are presented here. The votes for and against the measure for each average bid are given below.

Ave. bid (\$)	Percent voting For	Percent voting Against	Percent of "Don't Know"
31	38	41	21
89	43	36	21
126	18	65	18
136	33	47	20
148	31	50	19
178	15	70	15
211	33	54	13
286	12	69	19
510	15	65	21
779	22	65	13
969	12	82	6

**The second package would:**

1. Reduce traffic congestion on Highway 101 by 50%, so that traffic during August would be about the same as it currently is in January.
- AND
2. Provide low-income housing for all the families in your community that qualify.

If you had a chance to vote on a ballot measure that would implement this package but would require your household to pay \$ \_\_\_\_ each year, would you vote for or against it?

NOTE: The amount each household would pay (the bid) varied across residents. More bid levels were offered for these packages than for individual programs, so responses for averages of three bids at a time are presented here. The votes for and against the measure for each average bid are given below.

Ave. bid (\$)	Percent voting For	Percent voting Against	Percent of "Don't Know"
37	30	55	15
80	33	48	19
109	31	46	23
124	30	45	25
162	21	70	9
202	20	60	20
266	29	53	18
316	10	76	14
429	10	80	10
570	11	79	11
899	17	76	7



In this section, please tell us how you feel about your local government and the opportunities for you to affect what happens in your community. As before, please circle the number that shows how much you agree or disagree with each statement.

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree	Don't Know
Local government works hard to address the concerns of local residents . . . . .	11	25	10	39	12	3
Local government pays too much attention to the needs of tourism businesses . . . . .	8	24	22	23	17	6
This community has good fire, police, and other public services . . . . .	2	6	9	38	44	0
In general, local government is effective in using tax revenue to pay for programs that benefit the community . . . . .	10	19	18	34	8	12
I can personally influence how tourism is developed in this community . . . . .	20	17	24	21	6	13
Local government should use property tax revenues to attract more tourists to this community during the low tourist season . . . . .	24	19	18	26	9	4
Local government should use property tax revenues to attract and retain businesses in this community . . . . .	12	10	13	37	23	4
Local governments should take an active role in controlling the negative aspects of tourism and other industrial development . . . . .	2	5	11	40	39	3
Residents of this community are willing to pay taxes if the money is used for a good cause . . . . .	9	14	12	39	17	9

Many coastal communities are looking for ways to create new jobs for residents. Unfortunately, most options for increasing jobs have some costs. These costs might be economic, social, or environmental.

In this section, we list a few of these options. For each one, please think about whether the benefit of increasing jobs for residents in your community is worth paying the cost. Please circle the number that shows whether you feel the option is:

*Not acceptable* -- it would not be okay if it happened because the benefits are less than the costs  
OR

*Acceptable* -- it would be okay if it happened because the benefits are about the same as the costs  
OR

*Desirable* -- you want it to happen because the benefits are greater than the costs

OPTION	THIS OPTION IS		
	<i>Not Acceptable</i>	<i>Acceptable</i>	<i>Desirable</i>
Change government regulations so it will be easier for industries that cause some air and water pollution to build factories here .....	82	13	4
Raise local taxes and use the revenue to help traditional industries, like fishing and timber, if they need it to survive .....	61	33	6
Change zoning regulations so that residential areas in the community can be turned into commercial areas .....	68	27	5
Change zoning regulations so that forest and farm land can be turned into <i>residential</i> areas .....	58	33	9
Change zoning regulations so that forest and farm land can be turned into <i>industrial</i> or <i>commercial</i> areas .....	66	27	6

Are there any other options that would be desirable? Please write them here:

Of the 28 residents who answered this question, the most frequent suggestions were to reduce regulations for landowners and developers and to try to attract nonpolluting light industry and small businesses. Other residents suggested lowering taxes and facilitating tourism development by, for example, developing more attractions.