RESIDENTS' ATTITUDES TOWARD TOURISM, FOCUSING ON ECOCECENTRIC ATTITUDES AND PERCEPTIONS OF ECONOMIC COSTS: THE CASE OF IRIOMOTE ISLAND, JAPAN

By

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ABSTRACT

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Considerable research has been conducted about residents' attitudes toward tourism over the last 50 years. The purpose of this research is to develop an improved model to explain residents' attitudes toward tourism. The specific foci of this research are to: (a) examine the mediating effects of personal economic benefits from tourism among determinants of tourism impacts, benefits and costs from tourism development, and support for tourism development; (b) examine the impacts of a new variable introduced in the model, economic costs; and (c) test the impacts of residents' ecocentric attitudes on benefits and costs from tourism, and on support for tourism development. This study is based on a self-administered survey, hand-delivered to residents of Iriomote Island, Okinawa Prefecture, Japan during May and June 2011. This study found positive relationships between residents' ecocentric attitudes and economic costs, and negative relationships between residents' personal economic benefits from tourism and economic costs. This study also found positive relationships between residents' ecocentric attitudes and perceptions of economic, social and cultural, and environmental costs.

This dissertation is dedicated to my family. Your love

and patience have been paramount in my life's endeavor.

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CHAPTER I

INTRODUCTION

Background

In many national economies, tourism is a growing industry. Primarily because of tourism's potential positive impacts on local economies, many national and local governmental institutions promote tourism. Tourism may bring local communities economic benefits such as increased total income and tax receipts, direct and indirect employment generation (Lankford & Howard, 1994) and stimulation of secondary economic growth (DeKadt, 1979). Tourism also can be used as a diversification tool for rural communities seeking to improve the quality of life for their residents (Lankford & Howard, 1994). Furthermore, tourism can have positive social and cultural impacts on local economies. It can support cultural revitalization, leading to increased cultural pride, and can facilitate educational, scientific, and aesthetic advantages of cross-cultural contact (Preister, 1989). Tourism also can contribute to the quality of life of residents by improving local infrastructure, public services, and local recreational facilities, and by increasing opportunities for shopping (Pizam, 1978).

However, tourism may also bring serious negative impacts such as traffic congestion, litter, noise, vandalism, higher prices for goods and services, higher personal taxes, stress on infrastructure, drug abuse, and alcoholism (Pizam, 1978). Any tourism impacts that cause annoyance or irritation within the host community may lead to problems with the long-term sustainability of the industry. If tourism is not carefully planned to meet specific desired goals, tourism development can result in environmental degradation such as loss of vegetation and

habitat, overcrowding, pollution of natural areas, overbuilding, sewage problems, and housing problems (Goeldner, Ritchie, & McIntosh, 2000).

For tourism to be accepted and supported by communities, taking the views of the host community into account is important (Belisle & Hoy, 1980; Doxey, 1975). There are several reasons why community inclusion in tourism planning is important. If residents are not satisfied with the level or type of tourism development or tourist behavior, tourists may encounter negative interactions with residents. Tourists may experience poor service by an over-stretched tourism infrastructure and staff in retail outlets, hotels, parking lots, and attractions (Ryan & Montgomery, 1994), or feel they are being 'ripped off' (Farrell, 1982). If residents are not included in the decision making for tourism development, commercial tourism ventures may be hampered or terminated by excessive negative resident sentiment toward tourism (Williams & Lawson, 2001). Thus, having residents play an active role in the process, facilitation, and development of positive attitudes toward tourism is very important for the sustainability of tourism. For these reasons, research on residents' attitudes toward tourism has become an area of interest for numerous tourism scholars.

Study Need and Significance

During the last two decades, small island economies have been drawing considerable attention (Hoti, McAleer, & Shareef, 2007). Small-island economies are different from other large-state economies in economic and environmental contexts. Economically, some small islands are at a disadvantage relative to larger states. Their small size inhibits efficient domestic production, resulting in higher production costs and consumer prices (Thomas, 1982). Small size generally contributes to lower incomes, which lead to poor economic growth performance relative to that of larger states (Armstrong & Reed, 2002). Small size usually means limited local

natural resource availability and diversity and limited industry linkages, resulting in relatively high import content in relation to gross domestic product. Transportation costs for small islands are higher than for larger states due to their remoteness and isolation (Armstrong & Reed, 2002). Thus, small island economies are at a disadvantage relative to those of larger states.

Small economies are characterized by their unique and fragile biodiversity and ecosystems, which are highly sensitive to development pressures (McLean, 1980; Nunkoo, Gursoy, & Juwaheer, 2010). Environmentally, small islands are more vulnerable than larger states. In recent years, natural disasters such as typhoons, hurricanes, heavy rains and earthquakes have been witnessed around the world. Although such natural disasters occur everywhere, the impacts of such calamities are higher in small-island states because of their small size (Briguglio, 1996). Small islands are also open to wave action from the sea on all sides (McLean, 1980). Thus, small islands are more vulnerable than larger states. Although small islands have unique characteristics and the significance of tourism for islands is clear, there is limited research about residents' attitudes toward island tourism development (Andriotis, 2005). Several scholars recommend further research into the relationship between tourism and development in different parts of the world (Beeton, 2006). Islands are one such location type needing additional research attention.

Statement of the Problem

The problem underlying this study is the absence of a comprehensive model for explaining residents' attitudes toward tourism to address diverse tourism impacts. Specifically, residents' attitudes as they influence perceptions of tourism impacts and support for tourism is a complex process, consisting of various determinants. Although the variety of tourism impacts have been addressed in models in previous studies, the variable 'perceptions of economic costs'

has not been addressed and empirical research has not been conducted. In addition, there has been limited research on residents' attitude toward tourism in island contexts, with a particular focus on residents' relationships with their environment (ecocentric attitudes). Lastly, there have been a few studies on residents' attitudes toward tourism in Japanese destinations. Thus, there is a need to modify or extend models that have been developed for western contexts.

Therefore, this study extends the models developed by Jurowski, Uysal, and Williams (1997) , Gursoy, Jurowski, and Uysal (2002), Gursoy and Rutherford (2004) and Perdue et al. (1990) by introducing and testing the new variable, perceptions of economic costs, and testing the effects of ecocentric attitudes on all the identified tourism impact variables as well as on general support for tourism development in Japanese island location.

By testing ecocentric attitudes on all tourism impact variables in this study, the results should enhance understanding of residents' attitudes toward tourism in an island location and facilitate tourism planners and community leaders in developing an appropriate and desirable blue print for future tourism. In addition, this study will contribute to the Japanese tourism literature by introducing a study in a Japanese location using theories explaining residents' attitudes toward tourism that were developed in the western world. Also, assessing residents' attitudes toward tourism on the Island of Iriomote, an island located in Japan, contributes to the existing tourism literature by adding an island-based case.

Research Purpose

The purpose of this research is to develop and test a holistic model to explain residents' attitudes toward tourism development. To achieve this purpose, models developed by Jurowski, et al. (1997) , Gursoy, et al. (2002), Gursoy and Rutherford (2004) and Perdue et al. (1990) and based on social exchange theory were used as the foundation.

The proposed model (see Figure 1) incorporates variables of ecocentric attitudes, community attachment, and utilization of tourism resources, as they have been identified by others, as determinants of residents' attitudes toward tourism development. These are three exogenous variables that influence residents' perceptions of tourism impacts, economic, social and cultural, and environmental costs and benefits, which in turn are considered as endogenous variables that influence the ultimate dependent variable of support for tourism development. The variable "personal economic benefits from tourism development" is also included in the model as a mediating variable between exogenous and endogenous variables.

In developing a more holistic model than those tested previously, this study focuses on addressing three specific steps. The study tests personal economic benefits as a mediating variable; adds and tests perceptions of economic costs as an endogenous variable; and assesses the impact of ecocentric attitudes on all endogenous variables included in the model. In this study, the relationships among exogenous, endogenous, and the ultimate dependent variable were tested following proposed model.

The first focus of the model is to test personal economic benefits as a mediating variable for assessing residents' perceptions of tourism impacts. This study tests all the exogenous variables in Jurowski et al.'s (1997) model. Their model assesses perceptions of tourism impacts and support for tourism development; however, it does not differentiate between residents who received personal economic benefits from tourism and those who do not, as was done in the study by Perdue et al. (1990). Previous studies (Perdue et al., 1990; McGehee & Andereck, 2004, Latkova & Vogt, 2011) have shown that there are differences in perceptions of tourism impacts and support for tourism development between the residents who receive personal economic benefits and those who do not. Thus, the reason for the first focus is to refine the model

developed by Jurowski et al. (1997), Gursoy et al. (2001), and Gursoy and Rutherford (2004) by examining the influence of residents' personal economic benefits from tourism (PEB) on attitudes toward tourism and deciding on an appropriate model between a model using PEB as a mediating variable and a model using PEB as an exogenous variable.

The second focus of the model is to add and test a new variable, economic costs, as an endogenous variable. Residents perceive a variety of economic costs resulting from tourism development. For example, residents perceive that the price of goods and services has risen due to an influx of tourists (Ahmed, 1986). Residents notice that the price of land increases as investment from outside of the locality increases. Many researchers have tested the influence of ecocentric attitudes, community attachment, and utilization of tourism resources on various tourism impacts (perceptions of economic benefits, social and cultural benefits and costs, and environmental benefits and costs). However, there have been no studies testing perceptions of economic costs separately from perceptions of other tourism impacts. Jurowski et al. (1997) and Vagas-Sanchez, Plaza-Mejia, and Porras-Bruno (2009) noted perceptions of economic costs as a potential variable of importance. However, previous studies have not tested the effects of exogenous variables solely on economic costs or the singular effect of this variable on support for tourism. Thus, this study tests perceptions of economic costs as one of the endogenous variables in the proposed model.

The third focus of the model is to assess the impact of ecocentric attitudes on all endogenous variables. Previous studies have shown that people who live on islands hold stronger ecocentric attitudes than people in metropolitan areas due to their proximity to and everyday contact with natural resources. Thus, effects of ecocentric attitudes on all six categories of tourism impacts and on support for tourism development are examined in this study.

The results of the relationships examined in previous studies among exogenous, endogenous, and ultimate variables are presented in Table 1. In the next section, the 10 original research hypotheses are stated. More details about the hypotheses are presented in the Literature Review, "Synthesis of the Literature and Hypotheses."

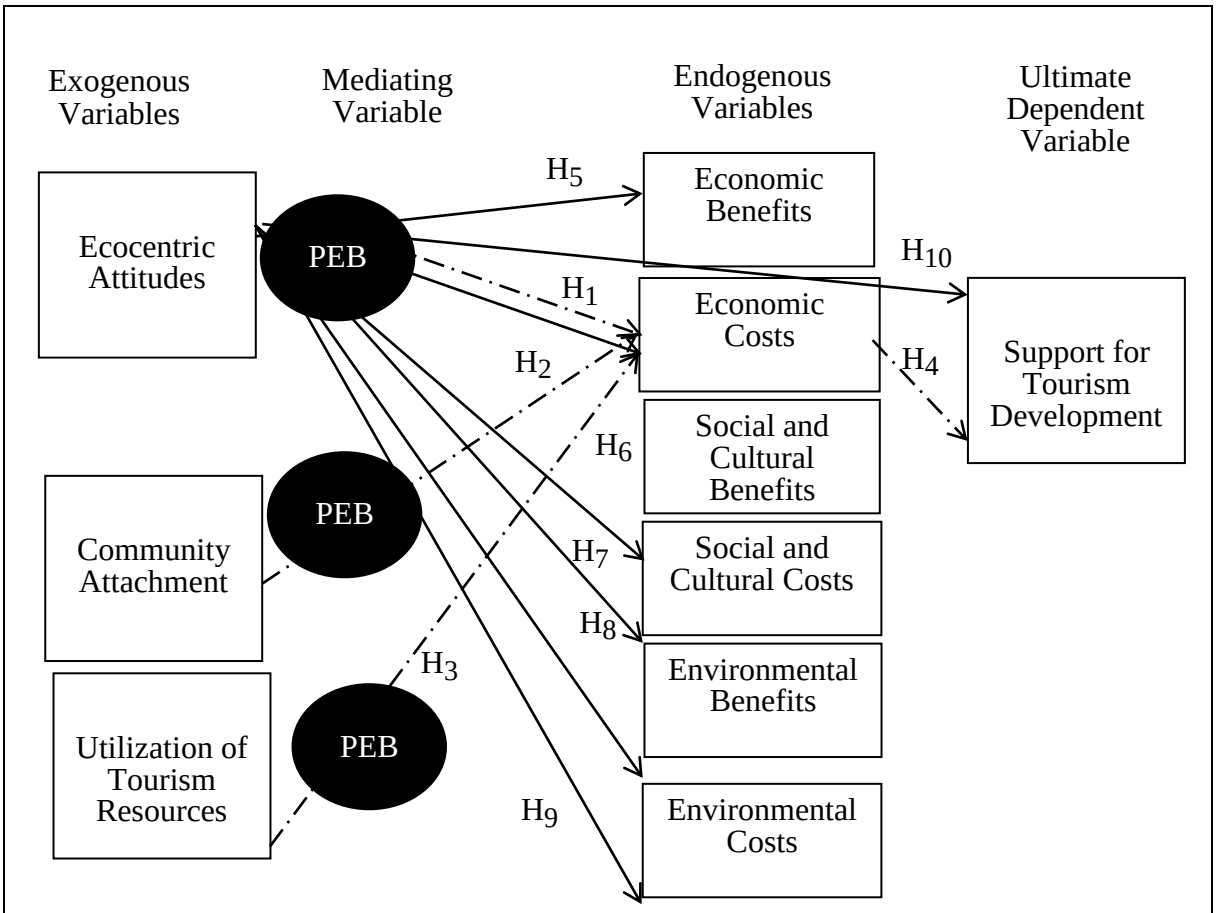

Figure 1. Proposed model using personal economic benefits from tourism development (PEB) as a mediating variable. Solid lines show the relationships between ecocentric attitudes and endogenous variables, and ecocentric attitudes and support for tourism development. Dotted lines indicate the relationships between exogenous variables and one of the endogenous variables, economic costs, and the relationship between economic costs and support for tourism development. PEB, personal economic benefits from tourism, signifies a mediating variable.

Table 1

Relationships among Variables in Models from the Previous Research

Independent variables	Dependent variables	Type of relationship	Significance	Authors
Ecocentric Attitudes	Economic Benefits	Negative	Significant	Gursoy & Rutherford (2004) Kaltenborn et al. (2008)
	Social Benefits	Negative	Significant	Gursoy & Rutherford (2004)
	Social Costs	Positive	Significant	Gursoy & Rutherford (2004)
	Socio-Cultural Benefits	Negative	Significant	Kaltenborn et al. (2008)
	Socio-Cultural Costs	Positive	Not significantt	Kaltenborn et al. (2008)
	Environmental Impacts	Negative	Significant	Jurowski et al. (1997)
	Environmental Benefits	Negative	Significant	Kaltenborn et al. (2008)
	Environmental Costs			
	Support for Tourism Development	Negative	Significant	Jurowski et al. (1997)
		Negative	Significant	Kaltenborn et al. (2008)
Community Attachment	Economic Benefits	Positive	Significant	Gursoy & Rutherford (2004) Kaltenborn et al. (2008)
	Social Benefits	Positive	Significant	Gursoy & Rutherford (2004)
	Socio-cultural Benefits	N/A	Not significant	Kaltenborn et al. (2008)
	Socio-Cultural Costs	No relationship		Gursoy & Rutherford (2004)
	Environmental Benefits	Positive	Significant	Kaltenborn et al. (2008)
	Environmental Impacts	Positive	Significant	Jurowski et al. (1997)
	Support for Tourism Development	Positive	Significant	Gursoy & Rutherford (2004)

Table 1 (cont'd.)

Independent variables	Dependent variables	Type of relationship	Significance	Authors
Personal Economic Benefits	Economic Impacts	Positive	Significant	Jurowski et al. (1997)
	Economic Benefits	Positive	Significant	Kaltenborn et al. (2008)
	Socio Cultural Benefits	N/A	Not Significant	Kaltenborn et.al. (2008)
	Social Impacts	Positive	Significant	Jurowski et al. (1997)
	Environmental Impacts	Positive	Significant	Jurowski et al. (1997)
	Environmental Benefits	Positive	Not Significant	Kaltenborn et.al. (2008)
	Support for Tourism Development	Positive	Significant	Kaltenborn et.al. (2008)
		Positive	Significant	Perdue et al. (1990)
Utilization of Tourism Resources	Economic Impacts	Positive	Not Significant	Jurowski et al. (1997)
	Social Impacts	Positive	Significant	Jurowski et al. (1997)
	Cultural Costs	Positive	Significant	Gursoy & Rutherford (2004)
	Environmental Impacts	Positive	Not Significant	Jurowski et al. (1997)
	Support for Nature-based Tourism	Positive	Not Significant	Jurowski et al. (1997)
Economic Benefits	Support for Tourism Development	Positive	Significant	Gursoy & Rutherford (2004)
		Positive	Significant	Kaltenborn et al. (2008)
Cultural Benefits	Support for Tourism Development	Positive	Significant	Gursoy & Rutherford (2004)
Social and Cultural Benefits	Support for Tourism Development	N/A	Not Significant	Kaltenborn et al. (2008)
Cultural Costs	Support for Tourism Development	Negative	Not Significant	Gursoy & Rutherford (2004)
Social Impacts	Support for Tourism Development	Positive	Significant	Jurowski et al. (1997)
Environmental Benefits	Support for Tourism Development	Positive	Significant	Kaltenborn et al. (2008)
Environmental Impacts	Support for Tourism Development	Positive	Not Significant	Jurowski et al. (1997)

Research Hypotheses

The model is proposed to better explain residents' attitudes toward tourism by identifying factors that influence perceptions of various tourism impacts and, ultimately, support for tourism development. Ten hypotheses were used to guide testing of relationships among variables shown in the model.

Hypotheses related to the first and second study foci (effects of exogenous variables on economic costs).

H_1: Using PEB as a mediating variable, a direct positive relationship exists between ecocentric attitudes of residents and perceptions of economic costs.

H_2: Using PEB as a mediating variable, a direct positive relationship exists between community attachment and perceptions of economic costs.

H_3: Using PEB as a mediating variable, a direct positive relationship exists between utilization of tourism resources and perceptions of economic costs.

H_4: A direct negative relationship exists between perceptions of economic costs and support for tourism development.

Hypotheses related to the first and third study foci (effects of ecocentric attitudes on endogenous variables, and effects of ecocentric attitudes on support for tourism).

H_5: Using PEB as a mediating variable, a direct negative relationship exists between ecocentric attitudes of residents and perceptions of economic benefits.

H_1: Using PEB as a mediating variable, a direct positive relationship exists between ecocentric attitudes of residents and perceptions of economic costs. (H_1 is stated again

because H_1 includes ecocentric attitudes and economic costs. In other words, it is related to both the first and second study foci, and the first and third study foci.)

H_6: Using PEB as a mediating variable, a direct negative relationship exists between ecocentric attitudes of residents and perceptions of social and cultural benefits.

H_7: Using PEB as a mediating variable, a direct positive relationship exists between ecocentric attitudes of residents and perceptions of social and cultural costs.

H_8: Using PEB as a mediating variable, a direct negative relationship exists between ecocentric attitudes of residents and perceptions of environmental benefits.

H_9: Using PEB as a mediating variable, a direct positive relationship exists between ecocentric attitudes of residents and perceptions of environmental costs.

H_{10}: Using PEB as a mediating variable, a direct negative relationship exists between ecocentric attitudes of residents and support for tourism.

Of all the hypotheses, Hypothesis 1 is related to all three study foci, as it describes the relationship between eococentric attitudes and economic costs using personal economic benefits from tourism as a mediating variable.

Definitions

Terms, as used in this study, are:

Attitude: A learned disposition to respond in a consistently favorable or unfavorable manner with respect to a given object (Fishbein & Ajzen, 1975)

Community Attachment: The social bond and local sentiment residents express toward their community (Jurowski et al., 1997)

Ecocentric Attitude: Strong belief in the preservation and protection of the environment (Jurowski et al., 1997)

Personal Economic Benefits from Tourism : The degree of economic benefits that respondents perceive that they directly benefit from tourism development (Perdue et al., 1990)

Utilization of Tourism Resources: "The importance residents place on the use of the tourism resource" (Jurowski et al., 1997, p5)

Exogenous Variable: A predetermined variable whose causes remain unexplained, unanalyzed, and outside the scope of a model (Knoke, Bohrnstedt, & Mee, 2002)

Endogenous Variable: A variable whose cause(s) of variation is represented in a model (Knoke et al., 2002)

Delimitations

This study is delimited to a random sample of Japanese households on Iriomote Island, Okinawa, Japan, having at least one resident aged 18 years or older.

CHAPTER II

LITERATURE REVIEW

Tourism Impacts

Since the late 1960s, research has examined many different aspects of residents' attitudes toward tourism. Research at the end of the 1960s and 1970s was primarily descriptive, identifying various economic, social, and environmental impacts for residents and their communities. Studies identified various positive economic impacts such as rise in income, employment generation (Rothman, 1978), and improvement of local facilities (Belisle & Hoy, 1980). Other studies suggested negative impacts such as induced price increase; increased noise, litter, traffic, and crime; and overcrowding (Rothman, 1978). Research in the 1990s shifted focus from the impacts themselves to the study of residents at the community level (McGehee & Andereck, 2004). These have included studies about the relationship between personal characteristics, personal benefits from tourism, community attachment, and attitudes toward tourism development. In the next section, use of the term "attitudes" and the aforementioned resident variables are discussed.

Attitudes

In much of the research about residents' attitudes toward tourism, the words "attitudes" and "perceptions" have been used interchangeably, without clear definitions of the two concepts. The word "attitude" sometimes is used interchangeably with "perception of impacts on tourism." Also, the word "attitude" sometimes is assumed as an antecedent construct in development of support for tourism and sometimes as synonymous with support for tourism generally. McGehee and Andereck (2004, p.132) explain that "the difference between impact perceptions and

attitudes appears to be a matter of semantics, given that the studies generally included the same types of measures." However, a few studies attempt to clarify the meaning of attitude. For example, a study by Gursoy and Rutherford (2004) explains the objectives of their research as the identification of perceived impacts and the factors that are likely to influence the perception of impacts and subsequent support for development. However, the title of the research is "Host Attitudes toward Tourism" and does not include "the perception of impacts." Other studies explain residents' attitudes toward tourism as perceptions of tourism impacts (Perdue et al., 1990; McGehee & Andreck, 2004).

According to the Oxford Dictionary of English (2010), perception means "1. Ability to see, hear, or become aware of something through the senses. 2. The way in which something is regarded, understood, or interpreted." Attitude means "a settled way of thinking or feeling about something." The Oxford definition of attitude can be considered relevant to that used in literature about residents' attitudes toward tourism. Consistent with this definition, Allport (1966, p. 24) defined attitude as "a state of mind of the individual toward a value." Attitude also is defined as an enduring disposition toward a particular aspect of one's environment (McDougall & Munro, 1987). Similarly, attitudes are predispositions or action tendencies toward some object (Kurtz & Boone, 1984). Attitudes are reinforced by perceptions and beliefs of reality, but are closely related to deeply held values, and even to personality. Unlike opinions, attitudes do not change quickly (Getz, 1994).

According to Alreck (2004), attitude is always focused on some object, which can be a physical or material thing, a person or group, or an idea or issue. Attitude has three parts: (1) what the person knows or believes about the topic, (2) how the person feels about the topic or how it is valued, and (3) the likelihood that the individual will take action based on the attitude.

Numerous studies have described impacts of tourism as attitudes toward tourism, implying Alreck's explanation of attitudes, knowledge and beliefs about the topic, and feelings and values toward the topic. Also, several studies of residents' attitudes toward tourism have discussed the construct of support for tourism as Alreck's explanation of attitude, the likelihood that an individual will take action. Thus, in this study, constructs such as support for tourism, personal economic benefits from tourism, community attachment, ecocentric attitudes, utilization of tourism resources, and economic, social and cultural and environmental benefits and costs are consistent with the aforementioned definitions. Also, all the constructs are considered to contribute to the concept of attitude.

Variables Affecting Residents' Attitudes toward Tourism

Socio-economic and demographic variables.

Researchers have recognized that residents' attitudes toward tourism may vary due to certain characteristics or circumstances associated with the residents. Variables associated with or affecting attitudes toward tourism include socio-economic and demographic characteristics such as gender, age, education, occupation, and income. Other variables about certain characteristics or circumstances associated with residents are personal economic dependency; community attachment; ecocentric attitudes; utilization of tourism resources; physical distance from tourism destinations; and the community's stage of tourism development.

A stable socio-economic and demographic variable, gender, has been found by Harril and Potts (2003), in a study in South Carolina, to be a significant determinant of perceived economic benefits from tourism, with more men than women positively disposed toward tourism. Similarly, Mason and Shane (2000), in a study in rural New Zealand, discovered that women were more opposed to tourism development than men due to their perception of negative impacts

such as increases in traffic, noise and crime. However, they acknowledged positive benefits also, including expanded community tourism facilities and regional economic benefits.

Although some general results have been drawn from research addressing gender as a factor, the results of other socio-economic and demographic factors have not been conclusive. Age is one such variable. Studies by Haralambopoulis and Pizam (1996), on the Greek island of Samos and Ritchie (1989), in Alberta and British Columbia, Canada, found younger residents were more favorable toward tourism development than older residents. On the other hand, Tomlijenovic, Renata, and Faulker (1999), in a study of Australia's Gold Coast, found that older residents were nearly as favorably inclined toward tourism development as young residents. However, Cavus and Tanrisevdy's (2002) study of Kudasasi, Turkey discovered that older residents had more negative perceptions than younger residents.

Education as a factor influencing residents' attitudes toward tourism also has shown mixed results. A study by Ritchie (1989) indicated that more educated residents are more involved and supportive. On the other hand, a study by Ahmed (1986), of Sri Lanka, indicated that more educated residents resent tourism more than less educated residents.

Income has been found to be positively associated with residents' attitudes toward tourism. The study by Haralambopoulis and Pizam (1996) indicates that the higher the income, the more positive the attitude toward tourism.

Antecedents to residents' attitudes toward tourism.

Although some general conclusions have been drawn from research addressing demographic factors as related to residents, results have not been conclusive for some variables that have been identified as antecedents to residents' attitudes toward tourism. Community attachment is one such variable. Community attachment is often measured by indicators such as

length of residence and/or growing up in a community (McGehee & Andereck, 2004). Liu and Var's (1986) study of Hawaiian residents did not find significant differences in attitudes based on ethnicity or length of residence. Similarly, Allen et al.'s (1993) study of 10 rural Colorado communities found no significant influence of length of residence on attitudes toward tourism. On the other hand, Um and Crompton's (1987) study of New Braunfels, Texas found a significant relationship between length of residence and residents' attitudes toward tourism. Similarly, Gursoy and Rutherford (2004) found that those residents who expressed a high level of attachment to their communities were more likely to view tourism as being both economically and socially beneficial.

Ecocentric attitude has been found to be related to attitudes toward tourism in some research studies (Jurowski et al., 1997; Kaltenborn et al., 2008). Liu and Var (1986), in their study of four counties in Hawaii, found that residents regarded protection of the environment as being more important than the economic benefits from tourism, though they did not test the difference statistically. Jurowski et al. (1997), in their study of Mount Rogers Recreation Area, found that an individual's environmental attitudes are negatively related to their support for tourism. Kaltenborn et al. (2008), in their study of a second home region in Sweden, found that environmental attitudes negatively relate to support for tourism. Gursoy and Rutherford (2004) found that residents with high ecocentric attitudes were concerned about both social benefits and costs in addition to economic benefits. Many of these research studies have used the New Ecological Paradigm (NEP scale) as a measure of 'ecocentrism' (Dunlap & Van Liere, 1978; Dunlap, Van Liere, Mertig, & Jones, 2000). This scale is a set of 17 items designed to include five elements of an ecological world view: the reality of limits to growth, the fragility of nature's

balance, a rejection of exceptionalism, a rejection of anthropocentrism, and the possibility of ecological catastrophe (Dunlap et al., 2000).

Residential distance from the tourism area of the community is considered a factor that influences residents' perceptions of tourism impacts (Belisle & Hoy, 1980; Sheldon & Var, 1984). Past studies have found that the perceived negative impacts of tourism decrease as the distance between the individual's home and the tourism sector of the community increase (Haley, Snaith, & Miller, 2005; Murphy, 1983; Perdue et al., 1990). On the other hand, a study of Santa Marta, Columbia, by Belisle and Hoy (1980), found that those living further away from tourist destinations perceive tourism less favorably than those living closer. However, the overall impact of tourism on economic and social evolution is generally felt to be positive and this may be due to the community's incipient stage of development at that time.

A community or region's stage of tourism development has been considered a variable affecting residents' attitudes toward tourism. Doxey's (1975) Irridex Model has demonstrated the varying attitudes of residents toward tourism at different stages of tourism development. Doxey depicted residents' sentiment toward tourism as moving from euphoria in early stages of development to apathy, annoyance, and antagonism associated with progressive stages of development. Butler (1980) developed a model that explains the evolutionary lifecycle of tourist destinations and identified stages of tourism development as moving from euphoria to exploration, followed by involvement, development, consolidation, and stagnation. Impacts of these development stages can influence strategic choices. The exploration stage is characterized by an incipient condition characterized by visitation by a small number of people. The exploration stage is also characterized as the stage during which local facilities and contact with local residents are likely to be high. The involvement stage is characterized as a stage during

which the number of tourists increases, including those who visit regularly, and the number of locals involved in catering to visitors increases. At the same time, pressure is put upon governments and public agencies to provide or improve transportation and other facilities for visitors. The development stage is characterized as a mature stage during which the number of tourists grows, the tourist-generating area is heavily advertised, and changes in the physical appearance are noticeable. "The number of tourists at peak periods will probably equal or exceed the permanent local population" (Butler, 1980, p. 8). Local involvement and control of development will decline rapidly. Facilities run by locals will decrease, replaced by modern facilities provided by external organizations, particularly for visitor accommodation. Changes in the community's physical appearance will be noticeable as original natural and cultural attractions will be supported by constructed and imported facilities. In the consolidation stage, the rate of increase in number of visitors declines, although the total number still increases, and the total number of visitors exceeds the number of permanent residents. In this stage, a major portion of the area's economy will be tied to tourism. The large number of visitors and facilities for tourists can be expected to raise some opposition and discontent among local residents.

Using stage of development as a variable, Belisle and Hoy (1980), in their study of Santa Marta, Columbia, identified overall positive attitudes toward tourism when tourism development was in its incipient stage. Other studies suggest that the more a destination is developed as a tourist destination, the less its residents support tourism (Ap & Crompton, 1993; Faulkner & Tideswell, 1997; Mason & Cheyne, 2000; Ryan & Montgomery, 1994).

Among the factors influencing residents' attitudes toward tourism, personal economic dependency has been observed to influence attitudes based on economic benefit or employment (Milman & Pizam, 1988). Following the logic of social exchange theory, the existing research

has found that the overall favorability of tourism increases with an individual's economic dependency. According to Pizam (1978), the most negative attitudes toward tourism on Cape Cod, Massachusetts were expressed by residents employed in non-tourism enterprises, followed by residents employed in tourism enterprises, residents who were non-employed (they are retired, living on pensions and have no economic vested interest in tourism), and non-tourism business owners. Entrepreneurs in tourism expressed the most positive attitudes. Another study by Rothman (1978), in two beach communities in Delaware, found that those who favored tourism development were more likely to be economically dependent on vacationers. A case study in Spey Valley, Scotland (Getz, 1994) used longitudinal analysis (1978 and 1992) of residents' attitudes toward tourism development in a remote town where tourism devolvement was in the mature stage during the early 1990s study. Although this research did not test specifically for a relationship between economic dependence and attitudes toward tourism, it described that owners and managers of tourism-related businesses were more positive about tourism, growth, and change than people who were not involved in tourism. However, Liu and Var (1986) in their study of Hawaii, found that dependency on tourism did not explain attitudinal differences.

Theories Explaining Residents' Attitudes toward Tourism

Several social psychological theories have been applied to explain residents' attitudes toward tourism. This section presents prevalent theories that explain residents' attitudes toward tourism: social representation theory, stakeholder theory, and social exchange theory.

Social representation theory.

One of the dominant theories that explains residents' perceptions of tourism is social representation theory. The concept of social representations was used initially by Durkheim, and

expanded by Moscovici (Pearce, Moscardo, & Ross, 1996). Social representation theory facilitates understanding of how people create personal perceptions. Moscovici (1981) describes social representations as "concepts, statements and explanations originating in daily life in the course of inter-individual communications" (1981, p181). Social representations are considered as means of constructing and understanding social reality (Pearce et al., 1996). They are described as metasystems that include values, beliefs, and common-sense explanations of how the world operates (Far 1990). In the tourism context, perception of tourism is viewed as one of the social realities and is influenced by social representations such as values, beliefs, attitudes, and images, ideas, and knowledge about tourism (Pearce et al. 1996). In addition, social representation theory assumes that communities are heterogeneous and consist of various groups of people who hold similar views about social phenomena. As applied to the tourism context, the theory suggests that segments of residents within host communities can be identified by examining residents' perceptions of and attitudes toward tourism development (Pearce et al., 1996). Based on this theory, previous studies (Davis, Allen, & Cosenza, 1988; Ryan & Montgomery, 1994) have segmented communities into several groups based on similar views toward tourism development, and determined that these groups had different attitudes toward tourism development, and determined that these groups had different attitudes toward tourism development.

Stakeholder theory.

Stakeholder theory, introduced by Freeman (1984), suggests that a phenomenon is characterized by its relationships with various groups and individuals who can affect or who are affected by its activities. A stakeholder is defined as one who has the right and capacity to participate in the process (Gray, 1989). Stakeholder theory posits that stakeholders must be

satisfied; otherwise, policies, organizations, communities, and even countries will fail. In the tourism context, as key stakeholders in a tourism system, residents' needs must be identified, considered, and satisfied (Bryson et al. 2002). Various uses of the collaborative approach, based on stakeholder theory as applied to tourism management, have been described in previous studies (Sauter & Leisen, 1999, Graci & Dodds, 2010)

Social exchange theory.

Social exchange theory has been one of the most referenced among the theories related to residents' attitudes toward tourism including the ones described above. This specifically has been instrumental in explaining the influence of material and psychological exchanges on residents' attitudes. Social exchange theory suggests that individuals will engage in exchanges if (a) the resulting rewards are valued, (b) the exchange is likely to produce valued rewards, and (c) perceived costs do not exceed perceived rewards (Skidmore, 1975). These notions imply that residents will be willing to enter into an exchange with tourists if they can get some benefit without inducing costs (Turner, 1986). Social exchange theory is based on an assumption that individuals engage in systematic or mindful processing of available information. Humans perceive phenomena based on self-interest and behave based on systematic processing of the information outside of themselves (Pearce et al., 1996).

Ap (1992) applied social exchange theory to the tourism field, explaining that residents evaluate tourism in terms of expected benefits or costs obtained in return for the services they supply. Thus, it is assumed that host residents seek tourism development for their community to satisfy their personal economic, social, and psychological needs and to improve the community's well-being (Ap, 1992). Previous studies generally have concluded that the residents who benefit from tourism perceive greater economic impacts and less social and environmental impacts from

tourism than those who do not benefit (Pizam, 1978; Murphy, 1983). However, some studies have shown that people with no apparent benefits are also supportive of tourism (Davis et al., 1988; Liu et al, 1987; Madrigal, 1993; Keogh, 1997). Several research studies have used social exchange theory to explain residents' attitudes toward tourism. In the next section, several models based on social exchange theory are explained.

Models Based on Social Exchange Theory

A number of researchers who have investigated residents' attitudes toward tourism have developed models by employing social exchange theory as a theoretical framework. Perdue et al. (1990), in their study of 16 rural Colorado communities, developed a model that examined the relationships among residents' perceptions of tourism impacts, support for additional tourism development, restrictions on tourism development, and support for special tourism taxes (see Figure 2). The model by Perdue et al. (1990) is distinct in terms of adding a mediating variable of personal benefits from tourism, placing its influence between the exogenous variables (resident characteristics) and endogenous variables (perceived positive and negative impacts from tourism development). Social exchange theory implies that those who benefit personally from tourism may perceive the tourism impacts favorably. Thus, by mediating personal benefits from tourism, researchers can measure the specific effects of other determinants of residents' attitudes toward tourism.

The model tested four major hypotheses. First, the study found that resident characteristics were not significantly related to positive perceptions of tourism impacts, although the relationships were positive when personal benefits from tourism development was used as a mediating variable. Also, the study found that resident characteristics were unrelated (negatively associated, although the result was insignificant) to negative tourism impact perceptions when

controlling for personal benefits from tourism development. Second, the research found that perceived positive impacts of tourism positively influenced support for tourism development and perceived negative impacts of tourism negatively influenced support for tourism development. Third, the variable 'perceived future of community' was found to influence support for additional tourism development. Finally, the study found that support for additional tourism development negatively influenced support for restrictions on tourism development, and support for special tourism taxes. Support for additional tourism development negatively influences support for restrictions on tourism development. However, the study found that there was no relationship between support for additional tourism development and support for special tourism taxes.

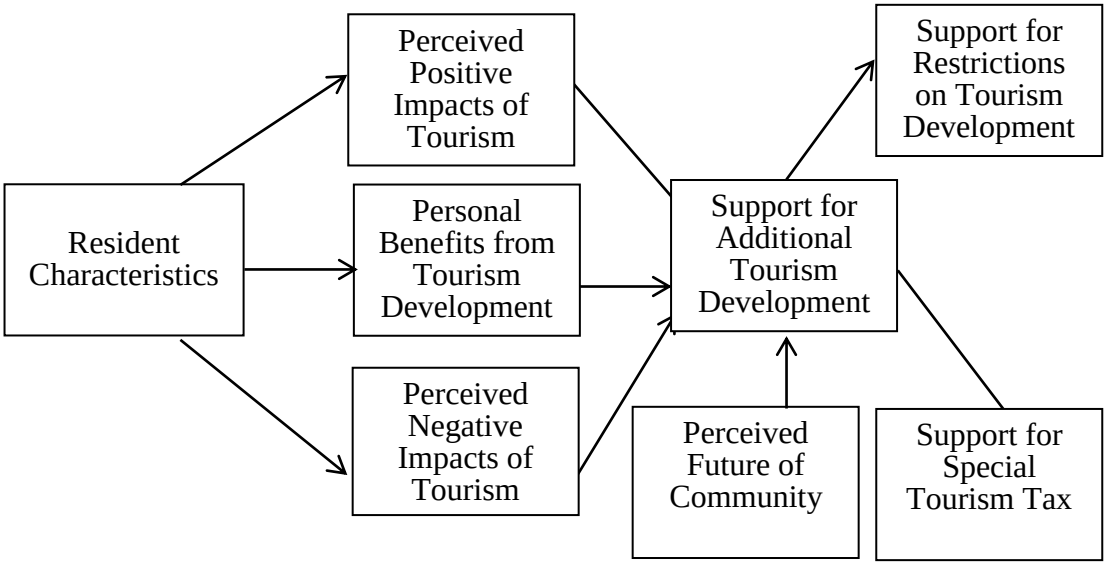

Figure 2. Respondents' tourism perceptions. Adapted from "Resident support for tourism development" by R. Perdue, T, Long and R. Allen, 1990, Annals of Tourism Research, p.17. Copyright 1990 by Elsevier Ltd.

This model by Perdue et al. (1990) contributed to the literature by introducing new variables: support for restrictions on tourism development, support for special tourism taxes (taxing on tourism businesses), and the perceived future of the community. Also, the model filled a gap in the literature by introducing the mediating variable of personal benefits from tourism and assessing residents' attitude toward tourism by differentiating two groups - residents who receive benefits and those who do not. However, the kinds of perceived positive and negative impacts were not specified. Many researchers after them continued to research from this perspective and developed models for residents' attitude toward tourism.

Jurowski et al. (1997), in their study of Mt. Rogers National Recreation Area in southwest Virginia, identified factors that affect the perception of impacts of tourism (economic gain, resource use, community attachment, ecocentric attitudes). By using path analysis, this research demonstrated that the perception of tourism's impact is a result of benefits and costs and that this evaluation is influenced by the elements that residents value (see Figure 3).

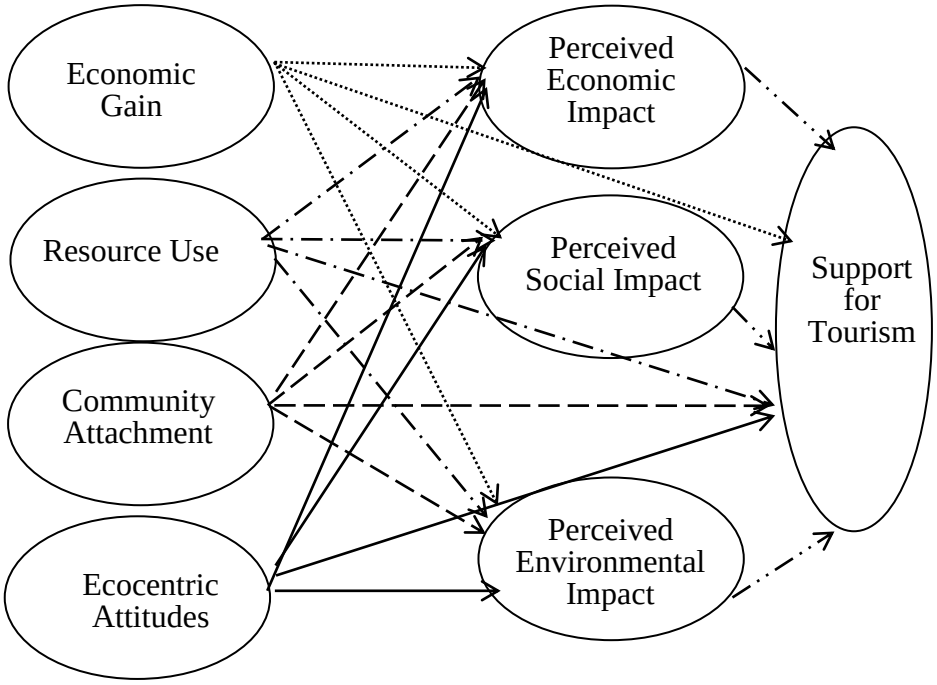

Figure 3. Model of resident support for tourism based on path analysis. Adapted from "Path Model with Support for Nature-based Tourism as the Dependent Variable" by C. Jurowski, M. Uysal and R.Williams, 1997, Journal of Tourism Research, p. 5. Copyright 1997 by SAGE Publications

Relationships with Economic Gain
Relationships with Ecocentric Attitudes
Relationships with Resource Use
Relationships with Community Attachment
Relationships with Impact (benefits/costs) variables

The model by Jurowski et al.'s(1997) model was criticized by Gursoy et al. (2002) for its aggregation of cost and benefit impacts of tourism. Gursoy et al. (2002) modified the model by aggregating economic, social and environmental impacts, then clustering impacts as either positive or negative, regardless of the type (see Figure 4). In addition, their model removed the exogenous variable of economic gain, added the exogenous variable of community concern, and added the variable of state of the local economy.

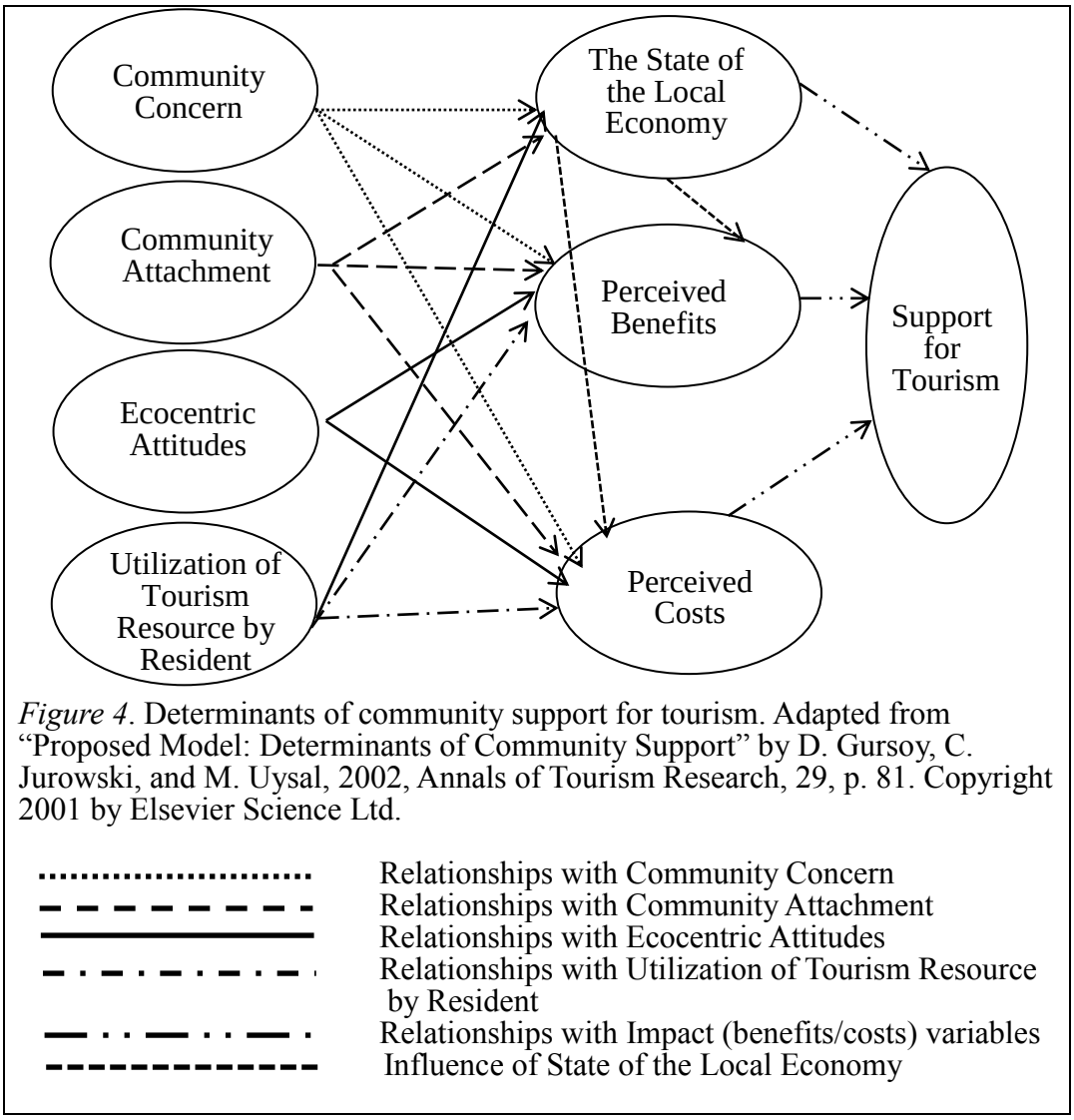

Figure 4. Determinants of community support for tourism. Adapted from "Proposed Model: Determinants of Community Support" by D. Gursoy, C. Jurowski, and M. Uysal, 2002, Annals of Tourism Research, 29, p. 81. Copyright 2001 by Elsevier Science Ltd.

Gursoy and Rutherford (2004), in their study of five counties surrounding a Virginia recreation area, expanded Gursoy et al.'s (2001) model by disaggregating positively perceived benefits into economic benefits, social benefits, and cultural benefits, and perceived costs into social costs and cultural costs (see Figure 5). As implied in social exchange theory, the variety of costs and benefits is expressed in the model by Gursoy and Rutherford (2004).

However, the model does not include economic costs that can be incurred by tourism development. As some research studies have demonstrated, residents not only benefit

economically from tourism, they also can be disadvantaged by costs incurred from tourism, examples of which have been identified by numerous studies. Residents may suffer from price increases for land and commodities, increased personal taxes, and stress on infrastructure (Pizam, 1978). Although the model by Gursoy and Rutherford (2004) explains a variety of determinants of residents' attitudes toward tourism, it does not explain the specific effects of these determinants because it does not mediate the factor of personal benefits from tourism. Personal benefits from tourism can be described as benefits to a person who is in the tourism business or a person who has family members who work in tourism-related businesses.

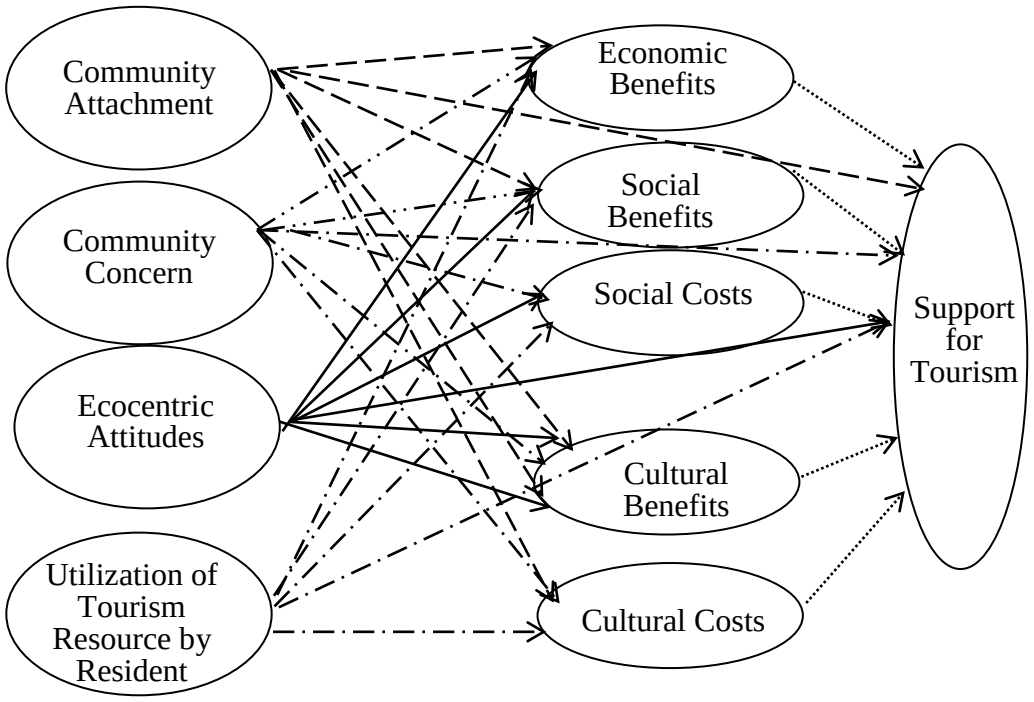

Figure 5. Determinants of community support toward tourism using a variety of tourism impacts as exogenous variables. Adapted from "Host Attitude Toward Tourism" by D. Gursoy and D. Rutherford, 2004, in Annals of Tourism Research, 31, p. 498. Copyright by Elsevier Ltd.

Relationships with Community Attachment
Relationships with Community Concern
Relationships with Ecocentric Attitude
Relationships with Utilization of Tourism Resources
Relationships with Impact (benefits/costs) variables

Building on the model by Perdue et al. (1990), Latkova and Vogt (2011) examined residents' attitudes toward existing and future tourism development in three rural areas in Michigan at different stages of tourism and economic development (see Figure 6). This model used both social exchange theory and the destination life cycle model to examine the impacts of tourism development on residents' attitudes when considered in conjunction with a community's total economic activity. These communities were three counties (Emmet County, Tuscola County, and Saginaw County) having different combinations of levels of tourism and levels of economic development.

This model introduced three new variables in predicting residents' support for tourism: residents' level of knowledge about tourism; involvement in decision making (power) (Kayat, 2002; Madrigal, 1993); and economic role of tourism (Andereck, Valentine, Knopf, & Vogt, 2005).

Regarding residents' characteristics, the study found that, in Emmet County (high level of tourism and high level of economic development), the older the residents, the more they perceived tourism to have positive impacts. Also, residents with higher levels of education agreed more strongly that tourism has positive impacts compared with those who had lower levels of education. On the other hand, residents with lower levels of education in Tuscola County (low level of tourism and low economic development level) agreed more strongly that tourism had positive impacts compared with residents with higher levels of education.

Among the variables introduced in this study, social exchange variables such as personal benefits from tourism and perceived economic role of tourism were found to be the strongest and most consistent determinants of tourism impacts across the three counties. In all three counties, the study found that the more residents benefited from tourism, the more they agreed with

positive impacts of tourism. The residents in all three counties who believed tourism has a dominant economic role in their country agreed more strongly with positive impacts of tourism than those who do not. In all three counties, no differences were found regarding perceptions of positive impacts and support for future tourism development based on an area's stage of development in tourism and level of economic development. On the other hand, some differences were found for negative impact, support for restrictions, and community future variables. The residents in Emmet County (high level of tourism and economic development) were more concerned about negative impacts of tourism, more supportive of restrictions on future tourism, and more optimistic about the future of their community than the residents in Saginaw County (low level of tourism and high level of economic development) and Tuscola County (low level of tourism and economic development).

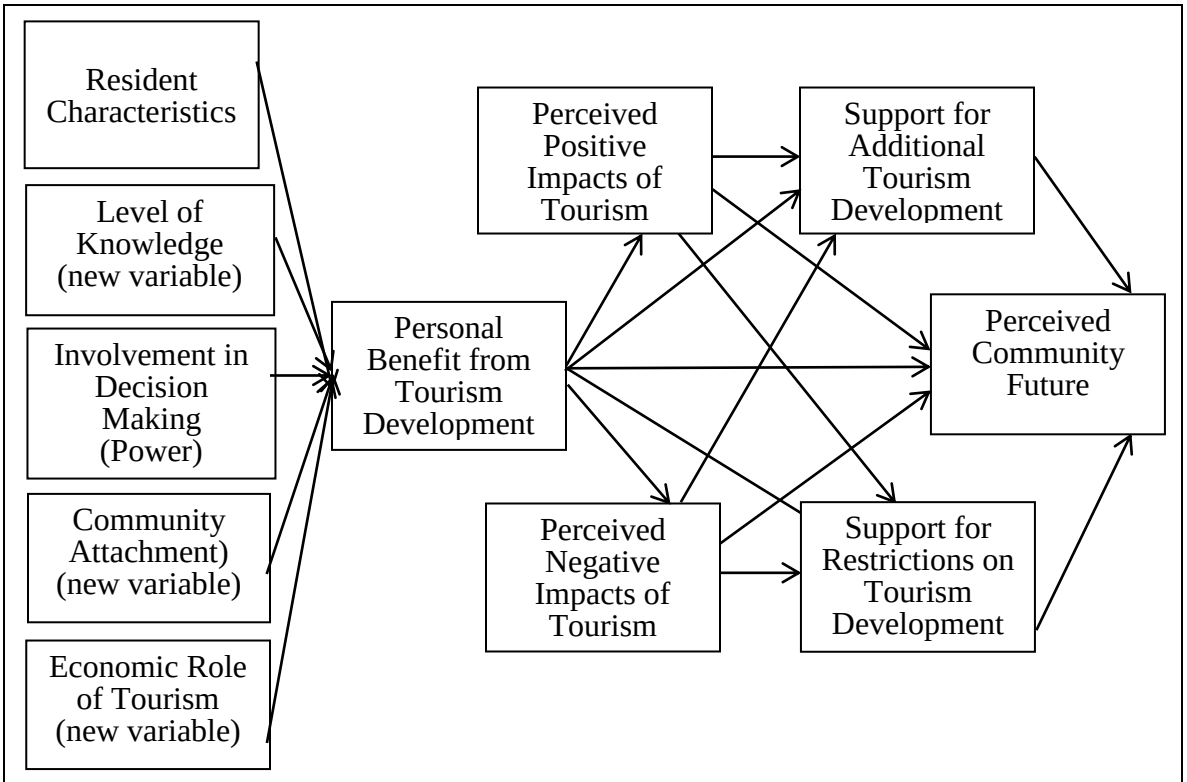

Figure 6. Proposed Extended Model of Residents' Tourism. Adapted from "Proposed Extended Model of Residents' Tourism Perceptions" by Latkova and Vogt, 2011, in Journal of Travel Research, p. 4. Copyright 2011 by Sage.

Synthesis of the Literature and Hypotheses

The model for this study was developed from a combination of the aforementioned studies (Jurowski et al. [1997], Gursoy et al. [2002], Gursoy and Rutherford [2004], and Perdue, Long et al. [1990]). The study has three foci: to test the mediating effects of personal economic benefits from tourism; to add and test impacts of a new variable, economic cost; and to examine relationships between ecocentric attitudes and all endogenous variables, and support for tourism.

The first focus was to test whether perceptions of all six tourism impacts (economic benefits and costs, cultural and social benefits and costs, environmental benefits and costs) and support for tourism development are different between groups who receive personal economic benefits and those who do not.

For the second focus, the proposed model adds economic cost as a new variable to the Gursoy and Rutherford's (2004) model. In previous research, price increases for land and commodities, increased personal taxes, and stress on infrastructure are depicted as economic costs that tourism can incur (Pizam, 1978). The economic costs variable is used as one of the components (latent variable) of negative impacts of tourism that was examined in a study by Sanchez et al. (2009). They examined the relationship between attitudes toward additional tourism development, personal benefit from tourism development, positive perceptions of tourism impacts, and negative perceptions of tourism impacts. In the Jurowski et al. (1997) study, which tested the relationship between determinants of residents' attitudes toward tourism (economic gain, resource use, community attachment, ecocentirc attitude) and perceived economic impact, they recognized that their questionnaires for economic impact items included both economic benefits and economic costs. Thus, identifying economic cost in the model is important, so the new variable "economic costs" is introduced in the proposed model.

The third focus is to assess the relationships between one critical exogenous variable, residents' ecocentric attitudes, and all the endogenous variables (economic benefits and costs, social and cultural benefits and costs, environmental benefits and costs), and between ecocentric attitudes and the ultimate dependent variable (support for tourism development). The reason for focusing this study on testing the relationships between ecocentric attitudes, the six exogenous variables and the ultimate dependent variable is that environmental identity has particular relevance to small islands' residents (Nunkoo et al., 2010). Intimate contact with the natural world has been found to be essential in forming important attachments with, and promoting positive values toward, the natural environment (Kellert, 2002). A large proportion of poor people in developing economies are close to the environment on a day-to-day basis (Frank, 1996). In this sense, the fact that people are close to the environment is a similar situation for small-island communities where daily interaction with the biophysical resources is an important part of their survival (Douglas, 2006). Thus, environmental identity can be an important determinant of residents' attitudes toward tourism development. The relationships among ecocentric attitudes, all the endogenous variables, and ultimate dependent variable were examined in the Jurowski et al.'s (1997) study. However, the relationships between ecocentric attitude and all the impact variables (differentiated by benefits and costs) have not been examined previously. Thus, the following hypotheses were constructed based on the literature review.

Perceptions of economic costs as an endogenous variable.

Previous studies have recognized that there are economic costs incurred from tourism development. Examples of economic costs are increases in the cost of living, increases in the price of products and services, and increases in the cost of housing. Perceptions of economic

costs is a new endogenous variable introduced in this study, so the relationship between community attachment and economic costs will be examined. Thus,

H_1: Using personal economic benefits from tourism as a mediating variable, a direct positive relationship exists between ecocentric attitudes of residents and perceptions of economic costs.

H_2: Using personal economic benefits from tourism as a mediating variable, a direct positive relationship exists between community attachment and perceptions of economic costs.

H_3: Using personal benefits from tourism as a mediating variable, a direct positive relationship exists between utilization of tourism resources and perceptions of economic costs.

H_4: A direct negative relationship exists between perceptions of economic costs and support for tourism development.

Exogenous variables: ecocentric attitude as an independent variable.

Several hypotheses are associated with ecocentric attitudes. The construct of ecocentric attitudes has been studied as one of the important determinants for examining residents' attitude toward tourism. Gursoy and Rutherford (2004) and Kaltenborn et al. (2008) found that a direct negative relationship exists between ecocentric attitudes of residents and perceptions of economic benefits.

Thus,

H_5: Using personal economic benefits from tourism as a mediating variable, a direct negative relationship exists between ecocentric attitudes of residents and perceptions of economic benefits.

The relationships between ecocentric attitudes and perception of economic costs have never been studied before, so the relationship between ecocentric values and economic costs will be examined. Hypothesis H_1 is as same as H_1 in the first study purpose. Thus,

H_1: Using personal economic benefits from tourism as a mediating variable, a direct positive relationship exists between ecocentric attitudes of residents and perceptions of economic costs.

Gursoy and Rutherford (2004) and Kaltenborn et al. (2008) found that a direct negative relationship exists between ecocentric attitudes of residents and perceptions of social and cultural benefits. Thus,

H_6: Using personal economic benefits from tourism as a mediating variable, a direct negative relationship exists between ecocentric attitudes of residents and perceptions of social and cultural benefits.

Kaltenborn et al. (2008) did not find a relationship between ecocentric attitudes of residents and perceptions of social and cultural costs. Jurowski et al. (1997) also did not find such a relationship. However, they did not test the relationship between ecocentric attitudes of residents and perceptions of social and cultural costs. Thus,

H_7: Using personal benefits from tourism as a mediating variable, a direct positive relationship exists between ecocentric attitudes of residents and perceptions of social and cultural costs.

Kaltenborn et al. (2008) found that ecocentric attitudes were negatively related to perceptions of environmental benefits. Jurowski et al. (1997) found that ecocentric attitudes were negatively related to overall perceptions of environmental impacts. Because Jurowski et al. (1997) did not differentiate between environmental costs and environmental benefits, separate hypotheses are used in the proposed study.

H_8: Using personal economic benefits from tourism as a mediating variable, a direct negative relationship exists between ecocentric attitudes of residents and perceptions of environmental benefits.

H_9: Using personal economic benefits from tourism as a mediating variable, a direct positive relationship exists between ecocentric attitudes of residents and perceptions of environmental costs.

Jurowski et al. (1997) and Kaltenborn et al. (2008) found that ecocentric attitudes negatively relate to support for tourism. They did not test the relationship using personal economic benefits from tourism as a mediating variable. Thus,

H_{10}: Using personal benefits from economic tourism as a mediating variable, a direct negative relationship exists between ecocentric attitudes of residents and support for tourism.

CHAPTER III

METHODS

This study assesses a variety of factors that may contribute to the formation of attitudes toward tourism held by local residents of a small island in Japan. Specifically, this study investigates how factors of community attachment, ecocentric attitudes, and utilization of tourism resources influence economic impacts (positive and negative), socio-cultural impacts (positive and negative), environmental impacts (positive and negative), and support for tourism. This chapter discusses methods for this study, including description of the study site, sampling plan, data collection, survey instrument, and reliability testing and data analysis.

This study used a printed, self-administered survey. The advantage of survey research is its ability to measure a variety of attributes, including respondents' physical and demographic characteristics, attitudes, preferences and lifestyle patterns. Because survey research uses sampling, information about a large population can be obtained from a relatively small sample of people, and the results can be generalized to the population from the sample (Alreck & Settle, 2004). For this survey, a self-administered questionnaire (Appendix A) was developed based on previous research and theories, revised to reflect the context of Iriomtoe Island, and then translated to Japanese.

Description of the Study Site

Background of Iriomote Island.

Iriomote is one of the islands of Okinawa Prefecture, an island chain of 169 islands that spans the southernmost area of Japan (see Figure 7). Okinawa Prefecture has been a growing tourism destination since the 1500s among Japanese and boasts a distinct history, culture, and

society. Okinawa was an independent country, called the Ryukyu Kingdom, from 1535 to 1857 when Japan annexed the kingdom. Due to its geographical position and distance from Okinawa, the island had trade relationships with eastern Asian countries such as China, Korea, Vietnam, and Cambodia. During World War II, American military forces landed there before landing on the Japanese main island, and a severe battle was fought. After the American military occupation from 1945 to 1975, Okinawa reverted to Japan's governance. Since the 1960s, tourism in Okinawa has flourished due to its eventful history, distinct culture, and pristine nature, including the ocean and its subtropical flora and fauna.

Iriomote Island is an outer island of Okinawa Prefecture that belongs to Taketomi cho. Outer islands are popular among tourists from mainland Japan because they feature "unspoiled" wilderness as compared with the more developed mainland of Okinawa, "Okinawa Honto. Iriomote has the second largest land area (289 km^2) after Okinawa's main island (1,208 km^2) in Okinawa Prefecture (Okinawa Prefectural Government, 2011).

Iriomote Island is famous for its prehistoric nature and is described as "Galapagos of the Orient" and "Amazon of Japan." The island is famous for the discovery of a rare indigenous species, the Iriomote Mountain Cat, in 1967, other endangered species such as the crowned eagle and box turtle, and subtropical jungle. In 1972, Iriomote Island was designated a National Park. Iriomote National Park spans the western parts of the island (12,506 hectares) and Sekiseisho-ko sea lagoon (about 400 km^2) (Global Oceanographic Data Center), which boasts Japan's greatest diversity of coral species, numbering 360 species. In August 2007, the National Park was extended to include the coastal areas of neighboring Ishigaki Island (Ministry of Environment, 2007).

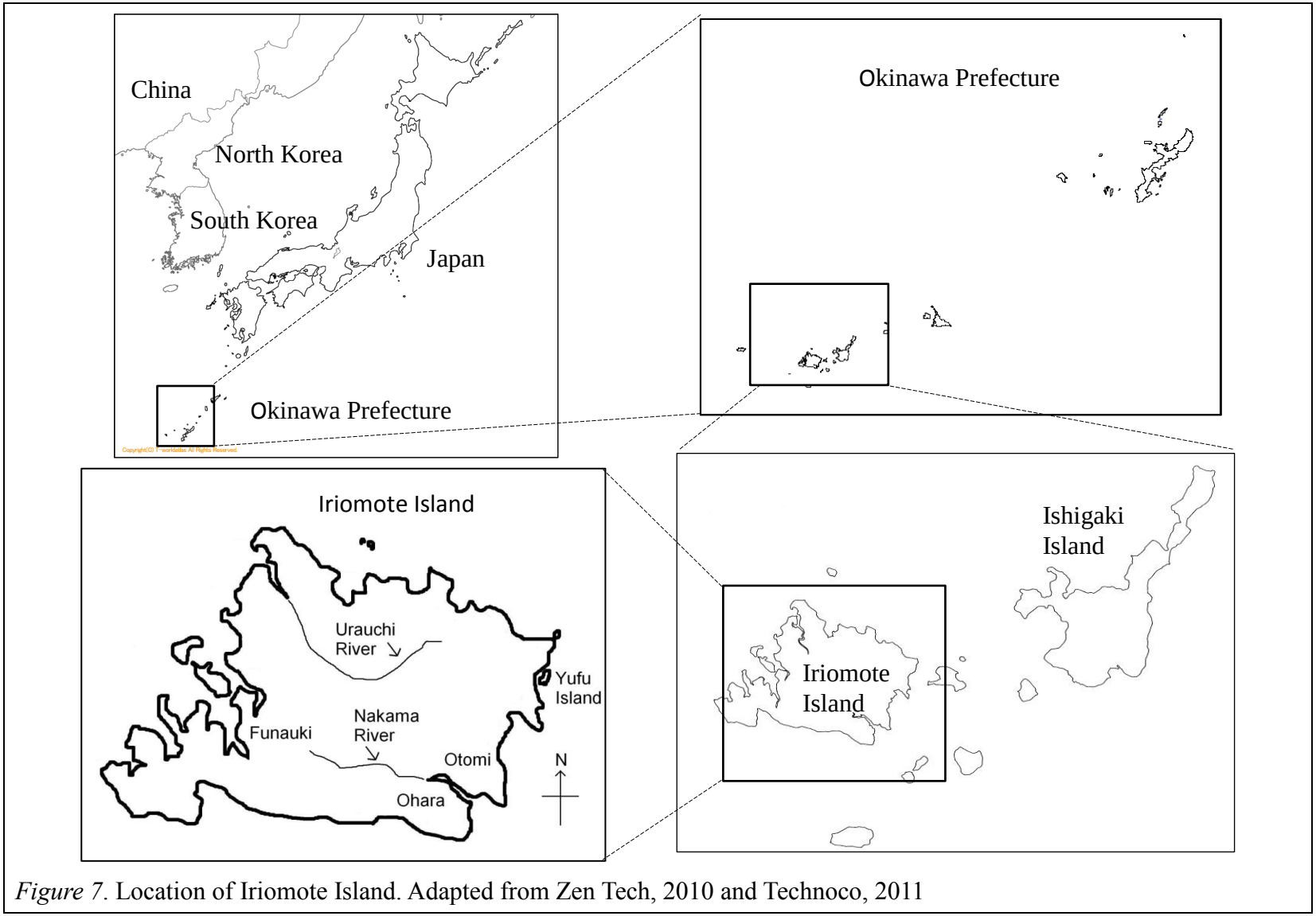

Figure 7. Location of Iriomote Island. Adapted from Zen Tech, 2010 and Technoco, 2011

History of Iriomote Island.

Early history of Iriomote Island has not been recorded, but there is some evidence of the existence of human inhabitants in the 8th and 9th centuries. The mainstays of its economy have long been cultivation of rice, sugarcane, and potatoes, and hunting of wild hogs and mountain crabs. The name "Iriomote" originated in the 18th century. Several events brought immigration into Iriomote Island. In 1609, under the occupation of the Satsuma clan of the Ryukyu kingdom, five hundred people were forced to migrate to Iriomote Island from Ryukyu Island and neighboring Miyako Island. People were taxed heavily, in the form of rice and cloth, by the Ryukyu Kingdom.

Coal was discovered on Iriomote in the 1890s. In 1910, due to many political decisions after the Meiji Restoration in 1868, Meiji Government launched a large-scale coal mining project on Iriomote Island. Many prisoners and laborers from mainland Japan, Okinawa Prefecture, Taiwan, and China immigrated to Japan. These laborers were working in very harsh conditions. They were paid minimal salaries in special cash that could be used only within the coal mining town. Thus, they could not leave the island even though they wanted to. Many of them tried to escape from the island because of harsh working conditions and malaria outbreaks (Miki, 2006). In 1945, malaria resulted in a death toll of 3,600, surpassing the death toll of Iriomote in World War II. In 1962, malaria was eradicated by the American military forces. Since eradication of malaria and the scientific introduction of the Iriomote Mountain Cat, construction of ports, port facilities, and a major road that connected the island occurred in the 1970s. As a result, the number of visitors to Iriomote Island has started to increase (Ankei, 2007).

Population and Economy of Iriomote Island.

As of 2011, the population of the island is 2,203, and the number of households is 1,057 (Okinawa Prefectural Government, 2011). The population density is 6.5 per square kilometer, compared to 20.5 per square kilometer on Okinawa's main island. Figure 8 shows the employment profile of residents on Iriomote Island. Residents who are employed in the primary industries (agriculture 15%, fishery 2%) account for 17% of all employed residents. They produce pineapples, sugarcane, mangos, rice, and beef. The residents who are employed in manufacturing industries (construction 7% manufacturing 4%) account for 11% of all employed residents. Most residents are working in service industries and account for 72% of the total employed residents. Among them, residents employed in tourism-related industries (restaurants, accommodations, and transportation) account for more than 30%. The service section includes residents who engage in various tour operations and ecotourism guiding services (Sonohara, 2001). Iriomote Island has six elementary schools and four junior high schools. There are no high schools on the island.

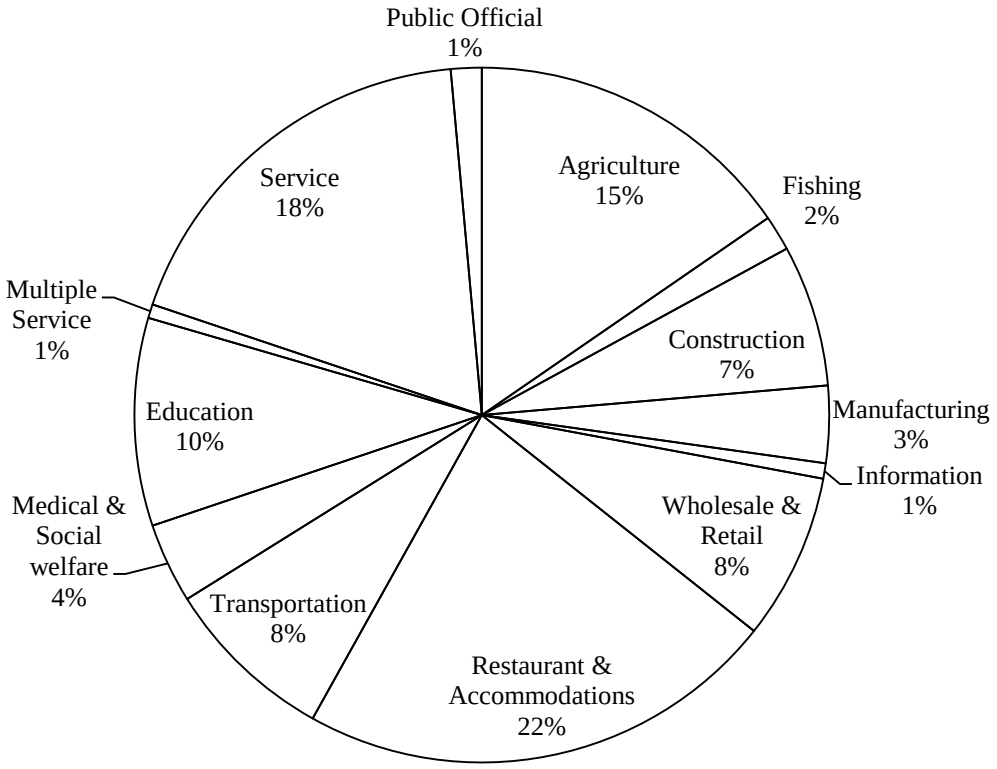

Figure 8. Percentage of employed residents on Iriomote Island. Adapted from the statistics published by Outer Islands Section (Okinawa Prefectural Government, 2011).

Tourism of Iriomote Island.

Visitation to Iriomote has been growing since the early 1970s (Tomikawa, 2003), from an annual average of approximately 30,000 in the 1970s to 400,000 in the 2000s (see Figure 9). The number of foreign tourists is not recorded currently by the tourism promotion department of Okinawa Prefecture. (S. Tamamoto, personal communication, October 12, 2011)

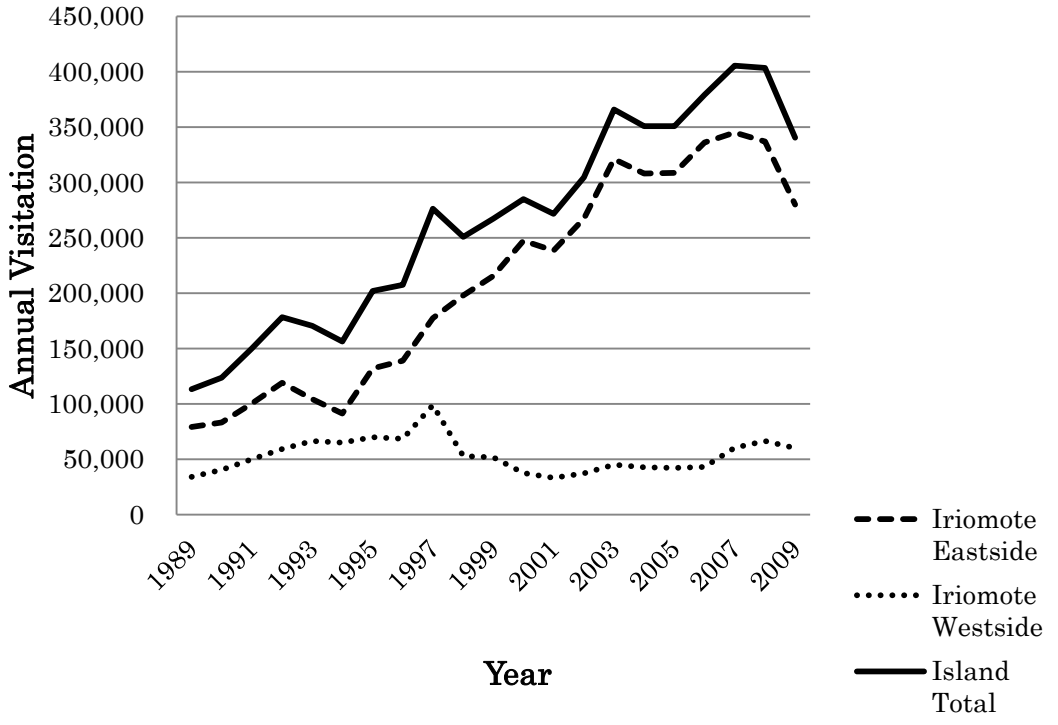

Figure 9. Trends in tourist visitation to Iriomote Island. Source: Developed from the statistics published by Taketomi Town, Okinawa Prefecture (2009).

As shown in Table 2, there are 24 bed and breakfast facilities and seven hotels on the island. After the reversion of Okinawa Prefecture to Japan in 1975, most of the bed and breakfasts and Japanese style hotels (Ryokan) were built. Most of the bed and breakfasts have long played a role in social bonding in the communities between residents and tourists. Most of the large-scale hotels were built in the 1980s. Approximately half of the owners of accommodation facilities came from outside of Iriomote Island (Sonohara, 2001).

Table 2.

Number of Accommodations on Iriomote Island (Okinawa Prefectural Government 2011)

	Bed & Breakfast		Hotels & Ryokan*		Total	
	Number	Capacity	Number	Capacity	Number	Capacity
East side	4	124	3	100	7	224
West side	20	788	4	167	24	955
Total	24	912	7	267	31	1179

Note. *Ryokan is the name of Japanese style hotels.

Iriomote has two major rivers, Urauchi River (Okinawa's largest and longest river) and Nakama River. Approximately 90% of the island is covered with forest. Tourists enjoy trekking and canoeing around the mountains and rivers. Swimming, snorkeling, and diving are also popular tourist activities around the marine and coastal areas of the island. Also, there are several cultural tourism destinations on the island. One of the major cultural attractions is "Yufujima" (Yufu Island), cow-driven carriage rides offered by a private tour operator that transfer people from Iriomote Island to Yufu Island through water approximately 20 centimeters deep, taking advantage of the low tide in the afternoon. Cow-driven carriage rides themselves are the tourist attraction, during which some of the drivers sing local songs accompanied by the traditional guitar, "Shamisen." Another attraction is "Jugon," a grass boat tour of Sea Lagoon, "Sekisei-shoko," offered by a private company. Iriomote Wildlife Conservation Center, a museum and a research center about the Iriomote mountain cat and ecology of Iriomote, is open to the public free of charge. It is operated by Japan's Ministry of Environment. Boat tours of tropical mangrove swamps and waterfalls, canoe trips, and various guided nature tours are offered on both sides of the island by private companies. The Ministry of Environment aids in a variety of ways for the purpose of developing sustainable tourism. For example, it constructs

and maintains walkways, observation decks, and wayside signs for tourists in and outside of the protected areas in the National Park, Also, the Ministry of Environment monitors environmental impacts of wave action caused by the tour boats to mangrove forests (protected areas of the National Park) in cooperation with local tourism businesses (Ministry of Environment, 2011).

The tourism of Iriomote often has been described as "ecotourism." However, it is a blend of mass tourism and ecotourism. Mass tourism is defined as tourism that involves concentration and/or volume of people visiting one place, which may bring positive economic impacts but also often lacks much regard for local nature and culture, resulting in negative impacts on local society (Clarke, 1997). Ecotourism is defined as a kind of tourism that includes protection of natural and socio-cultural resources of the destination, incorporates tourist education, and contributes economically and otherwise to local communities (Blamey, 1997).

Iriomote is accessed only by ferry from the neighboring Ishigaki Island (population: 47,973 as of 2010), which has a much larger economy than Iriomote's (population: 2,203 as of 2010) (Okinawa Prefectural Government, 2011). Most tourists fly to Ishigaki Island from mainland Japan or Okinawa's main island, then take a ferry from Ishigaki Island to Iriomote. Due to an expanded ferry service (three companies running approximately six inter-island ferries per day), most tourists participating in group tours spend only a few hours on the island rather than multiple days. Therefore, tourists spend little money while on the island. Some residents complain that tourists spend little on the island but leave trash behind (T. Tamamori, personal communication, March 28, 2009).

In 2002, UNIMAT, a construction and resort company, built a controversial large-scale resort on a fragile site, the coast of Tsukigahama. The beach has been a habitat for sea turtles for a long time. Without much consultation with the people of the village, UNIMAT constructed

the hotel. Its construction caused environmental damage, such as erosion of the coastal area and loss of habitat for sea turtles (T. Morimoto, personal communication, March 24, 2009). In 2008, UNIMAT purchased another plot of land in the community of Funauki on which to construct a resort facility. The news has dismayed the community of Funauki (population: 45), which can be accessed only by boat, because construction of a big resort may bring various negative consequences such as an unusual influx of people, resulting in overuse of resources and infrastructure, changes to the socio-cultural fabric of the region, and change to the cozy atmosphere of the quaint little town (N. Yoshime, personal communication, March 25, 2009).

Iriomote has two major waterfalls that are popular among tourists: Mariud Falls (selected as one of Japan's 100 Best Falls) and Pinaisara Falls. However, these falls have been polluted with trash and human waste. Thus, some residents don't visit these falls as they used to, and they complain about not being able to enjoy the falls because of the pollution (Y. Yamamoto, personal communication, March 28, 2009). Other residents are seriously concerned about the environment around the falls. Iriomote's municipality of Taketomi Town has not enforced its environmental ordinances for the water and land passage toward these falls and this has been a problem (N. Yamamoto, personal communication, March 28, 2009).

Communities of Iriomote are described as the West and the East sides. Before construction of the major inter-island road in 1970, there was little communication between the East and the West. Since the beginning of the 1980s, immigrants from mainland Japan have been increasing. Some of them went to launch tourism businesses; others went for extended vacations, then decided to live there. Thus, the West has more immigrants as compared with the East. However, both east and west have traditional towns whose populations are active in hosting village events and festivals.

Iriomote residents' relationship with nature.

Residents in Iriomote have been utilizing natural resources since the recording of history, 500 years ago. People on the island have been living by collecting wood and vegetables from mountains, fishing on the river and oceans, and hunting hogs and mountain crabs. Because of Iriomote residents' dependence on the island's natural resources, people on the island think that plants and animals have their own gods, so residents have large and small rituals before they use natural resources. For example, they have ceremonies when they go into the mountains to hunt for wild hogs. They have special greetings before they go into caves. Even after the 1970s, when agriculture and tourism became the major source of Iriomote income, the rituals and festivals about natural resources continue. A variety of annual festivals enable residents to pray for successful rice cultivation and to worship ocean gods for safe fishing. Several of them have been designated as Japan's Important Cultural Treasures (Ankei, 2007).

Many hunting areas are within the boundaries of the National Park. Residents must have hunting licenses to be able to hunt on Iriomote Island, including within the park area; the number of traps for hunting wild hogs is limited by the Ministry of Environment. The period for hunting also is limited to November through February (Ankei, 2007). No fences surround the park area and residents are not restricted from going into the area (N. Watanabe, personal communication, October 12, 2011). However, they are not allowed to develop any park land for rice or vegetable fields, which they used to do along the rivers. Thus, some residents complain. Complaints about not being able to hunt wild hogs are not heard (S. Tamamori, personal communication, October, 12, 2011). Occasionally, Iriomote mountain cats attack chickens in cages that residents own. National Park officials inform residents of these incidents and advise

them to locate chicken cages in safer places or to make durable chicken cages that cannot be broken by Iriomote mountain cats (Ankei, 2007).

Iriomote has several community building organizations. In 1996, the Iriomote ecotourism association was established. In 1995, "Iriomote wo horiokosu kai" (Association for Rediscovering and Rebuilding Iriomote Island) was formed. This association contracts with many outside consultants and researchers to rediscover Iriomote's history and culture (Matsushima 2003). Iriomote Island Ecotourism Association established in 1996 hold seminars, environmental education programs, and training programs for interpreters.

Iriomote Island hosts several university research centers, including the Tropical Biosphere Research Center established by University of the Ryukyus in 1971 and Okinawa Regional Research Center founded in 1976 by Tokai University in Tokyo. They conduct research on natural resources and host community outreach programs, including for local elementary and junior high schools and various levels of educational institutions outside of Iriomote Island.

Faced with an increasing number of tour operations, emerging construction of resort facilities, and threats to the natural environment, the communities of Iriomote have great concerns about the future of tourism. However, there has not been any island-wide discussion about or planning for the future of tourism. This research assesses residents' attitudes about tourism development to help provide a basis for such discussion and planning.

Development of Survey Instrument

Several steps were taken to develop the survey instrument for this study. First, the initial survey instrument was created based on previous studies (see Appendix A). The instrument was reviewed by dissertation committee members. The purpose of this process was to detect any

fault in the design of the questionnaire and to confirm readability. Second, the revised questionnaire was translated into Japanese. Modifications were made until the translations were consistent and accurately reflected the questions' intent. The instrument was reviewed by two eastside and two westside residents of Iriomote Island. In the following sections, details about organization of the survey, development of survey instrument from previous studies, revision by local university's faculty members, and revision by local residents are discussed.

Organization of the survey.

The questionnaire consists of four sections: residents' opinions about various impacts of tourism, residents' relationships with their community and environment, residents' relationships with tourism resources and tourism development, and residents' socio-economic and demographic characteristics. The first section, soliciting opinions about various impacts of tourism, measured intervening endogenous variables that influence residents' support for tourism development: economic benefits and costs of tourism, social and cultural benefits and costs of tourism, and environmental benefits and costs of tourism. The second section, residents' relationships with their community and environment, measured two exogenous variables that influence residents' level of support and non-support for tourism development, including community attachment and ecocentric attitude. The third section, residents' relationships with tourism resources and economic development, asked respondents about additional exogenous variables that influence residents' attitudes toward tourism development, including their utilization of tourism resources and perceptions of personal economic benefits from tourism development. Finally, respondents were asked about their support for tourism development, the ultimate dependent variable. The fourth section, demographic information,

asked respondents about their demographic attributes and residence patterns: gender, age, education level, income, and length and pattern of residence on Iriomote Island.

The instrument was developed based on a review of the literature about residents' attitudes toward tourism, including Jurowski et al. (1997), Gursoy et al. (2002), Gursoy and Rutherford (2004), Perdue et al. (1990), Dunlap et al. (2000), and Dunlap and Van Liere (1978). The instruments used in the aforementioned literature have been tested for internal consistency reliability[1] and construct validity[2].

Appendix A shows the variable names, scale items contributing to each variable, and sources of the items. For most of the questions, respondents were asked their level of agreement on a 5-point Likert scale, with strongly disagree on one end of the scale (1) and strongly agree on the other end (5). Perceptions of tourism impacts were measured on a satisfaction scale that asks for residents' level of satisfaction with quality of life indicators (Getz, 1994).

Measurement of exogenous variables.

Exogenous variables included ecocentric attitude, community attachment, personal economic benefits from tourism development, and utilization of tourism resources. The section for ecocentric attitude was adapted from the studies of Jurowski et al. (1997) and Kaltenborn et al. (2008), in which they adapted NEP. The scale for eccocentric attitude in this study consisted

[1] Internal consistency reliability is based on the average correlation between all items of a test. It is an indication of the degree to which items measure the attribute consistently (Teddie & Tashakkori, 2009). Cronbach's internal consistency reliability (expressed as a correlation coefficient ranging from 0 to 1) has been the most widely used reliability method in studies developing scales for measurement of residents' attitudes toward tourism. A coefficient score of 0.7 or higher demonstrates an acceptable level of reliability coefficient (Nunnaly & Berstein, 1994).

[2] Construct validity is the degree to which a measure is related to other variables as expected within a system of theoretical relationships. Construct validity can offer a weight of evidence that a measure either does or does not meet the quality a researcher wants it to measure.

of five items. Internal consistency tests confirmed the reliability with a Cronbach's alpha of 0.82 (Kaltenborn et al., 2008).

Four items were used to measure community attachment. The section for community attachment variables was adapted from Gursoy and Rutherford (2004). This instrument was found to be reliable, with a Cronbach's alpha of .82. Possible response sets, as appropriate to specific questions, were "not at all, a little, some, a lot, very much" and "none, a little, some, quite a bit, a lot." Items proposed that the variable "personal economic benefits from tourism development" (PEB) had two types of impacts. First, PEB influences endogenous variables directly as one of the exogenous variables. Second, PEB functions as an intervening or mediating variable for exogenous variables (ecocentric attitude, community attachment, utilization of recreation resources) and the ultimate dependent variable (support for tourism development). Measurement items for personal economic benefits from tourism development were adapted from the studies by McGehee and Andereck (2004), Latkova (2008), and Jurowski et al. (1997). This construct consisted of four items. In the study by McGehee and Andereck (2004), internal consistency tests confirmed reliability with a Cronbach's alpha of 0.75.

The section for utilization of tourism resources was adapted from the studies of Gursoy et al. (2002) and Gursoy and Rutherford (2004). This variable used a set of three items. Internal consistency tests confirmed reliability with a Cronbach's alpha of .92 (Gursoy et al., 2002).

Measurement of endogenous intervening variables.

The endogenous intervening variables used in this study were economic benefits, economic costs, social and cultural benefits, social and cultural costs, environmental benefits, and environmental costs.

The economic benefits variable comprised five items. Among them, four items had confirmed internal consistency, with a Cronbach's alpha of .86 (Jurowski et al., 1997). The economic costs variable comprised five items. Among them four items had internal consistency reliability, with a Cronbach's alpha = .10 (Vagas-Sanchez et al., 2009). The economic costs variable is a new variable introduced in this study.

The social and cultural benefits variable was adapted from Gursoy and Rutherford (2004), which includes four social benefits items and three cultural benefits items. Internal consistency tests confirmed the reliability, with Cronhach's alphas of 0.78 and 0.74 respectively. The social and cultural costs variable comprised four social costs items and three cultural costs of tourism, having internal consistency reliability, with Cronbach's alphas of 0 .81 and 0.87 respectively.

The environmental benefits of tourism items were adapted from the study by Latkova and Vogt (2011). This scale consisted of four items. Internal consistency tests confirmed reliability, with a Cronbach's alpha of 0.70. The environmental costs of tourism items were adapted from the study of Sanchez et al. (2009), with confirmed internal consistency reliability of Cronbach's alpha of 0.85.

Measurement of ultimate dependent variable.

The items for the ultimate dependent variable, support for tourism development, were adapted from studies by Perdue et al. (1990) and McGehee and Andereck (2004). This domain is represented by a set of four items. In the study by McGehee and Andereck (2004), internal consistency tests confirmed reliability with a Cronbach's alpha of .94.

In this study, all the question items were tested for internal consistency after data collection. The question items that did not meet the acceptable level of internal consistency were removed from the question item set to raise the level of internal consistency.

Revision of the Questionnaire and Back Translation

After the draft survey instrument was revised based on committee member comments, the revised questionnaire was translated into Japanese. It was given for review to two faculty members in the Department of Tourism Sciences and Industrial Management at the University of the Ryukyus, who read both English and Japanese versions of the questionnaire. They checked for correct wording, comparable meanings, and appropriate nuances. Two kinds of change were suggested by a faculty member. One was to add subscript numbers for each response option on each question to facilitate data input. Another was to add the response option (other specify_____) to the question "Which best represents the pattern of years you've lived on Iriomote Island?".

Next, the instrument was reviewed by two eastside and two westside residents of Iriomote Island. One reason for including reviewers from each side of the island was because people on Iriomote often distinguish the east side and the west side in conversation. An uninhabited region of 30 km wide separates residents of the two population clusters, so using reviewers from these two locations assured adequate community representation. Residents from the west side suggested adding two multiple choice questions to reflect some part of the content of the two open-ended questions about current tourism practices and desirable future directions of tourism. The reason is that some residents may not be used to writing extensively about tourism and have difficulty answering open-ended questions. One added question asked respondents to identify the types of tourism currently conducted on Iriomote Island. Eight

multiple choice responses were created (Ecotourism, Group Tourism, Day-Trips, Extended Trip, School Excursion Tour, Study-Trips [e.g., Iriomote School], Heritage Tourism, Others). Another added question asked respondents to choose the types of tourism they want to be conducted on Iriomote Island in the future, using the same eight response options.

Lastly, the translated survey was back-translated from Japanese to English by one faculty member (different from the two who checked the accuracy of the translation from English to Japanese) in the Department of Tourism Sciences and Industrial Management at the University of the Ryukyus. Modifications were made until the translations were consistent and accurately reflected the questions' intent.

Sampling Plan

Survey instruments were hand-delivered to a random sample of 300 households on Iriomote Island. In this section, sampling frame and sample size are explained.

Sampling frame.

The sampling frame is the list or quasi-list of units composing a population from which a sample is selected (Babbie, 2004). When such a list is not available, the sample is drawn based on an explicit rule (Trochim, 2000). In the present study, the sampling frame was all the households whose residences are located on Iriomote Island. The present study used systematic random selection (Knoke et al., 2002) to draw a sample based on the explicit rule of taking every *k*th case from the residences on Iriomote Island, following a pre-determined route and beginning with a randomly chosen start.

Sample size determination.

When determining sample size, the following factors were considered: sampling error, population size, desired precision, heterogeneity of population, resources available (Alreck &

Settle, 2004), and expected response rate. The sample population was 1,195 Iriomote households, based on the record of basic residents' register (Okinawa Prefectural Government, 2011). Sample size was calculated using the following equation (Dillman, 2007):

$$Ns = \frac{(Np)(p)(1-p)}{(Np-1)\left(\frac{B}{C}\right)^2 + (1-P)}$$

Where: Ns = completed sample size needed for desired level of precision

Np = size of population

P = proportion of population expected to choose one of the two response categories

B = acceptable amount of sampling error

C = Z statistic associated with the confidence level; 1.96 corresponds to the 95% CI

In this study, with a sample population of 1,195 residents, a C.I. of 95%, and the final size of 172 was determined based on a 95% confidence level with a margin of error of 5%.

$$NS = \frac{(1195)(.5).(5)}{(800-1)\left(\frac{.05}{1.96}\right)^2 + (1-.5)}$$

The response rate in most studies of residents' attitudes toward tourism using hand-delivered surveys ranges between 67% and 87% (Perdue et al., 1990; Mcgehee & Andereck 2004). The number of surveys to be distributed was calculated based upon a past survey response rate of 67%, which yielded a survey distribution number of 256 surveys. This number was rounded up to the nearest ten; thus, 260 surveys were distributed door to door. This sample size also meets the acceptable level for conducting multiple regression, the main analysis used in this study. Sample size for multiple regression can be calculated by using the equation $N \geq 50 + 8m$ (where m is the number of independent variables) (Tabachnick & Fidell, 2001). This study has 10 independent variables (4 exogenous variables and 6 endogenous variables). Thus, the sample

size of 172 meets the acceptable minimum sample size of 130 ($N \geq 50 + [8 \times 10]$) using the aforementioned equation.

Sample selection and data collection procedures.

A self-administered questionnaire was hand-delivered to randomly selected households by the researcher because higher response rates occur with this method than other methods, as indicated in past studies (Andereck & Nickerson, 1997). Households were selected using systematic sampling with a random starting point. Specifically, distribution of questionnaires began at a randomly selected point in the community, then every 3rd household was selected. The count for "third" started with the adjacent house along a prescribed route after the first questionnaire was distributed.

In the case of multiple family residences, each living unit was considered a household. If a house appeared vacant, the researcher went to an adjacent house. If the house appeared to be occupied but no one was home, the researcher returned at another time. If no one was home on the return visit, the researcher went to an adjacent house (Perdue et al., 1990). The researcher left a survey at a house only if the researcher spoke with someone in the house; no survey was left on a door handle.

At each house, the person who was at least 18 years old and whose birthday was on the closest upcoming date was asked to complete the questionnaire. A specific protocol (see Appendix B) was used to briefly explain the survey, and included its importance in the community, a request to respond, an explanation of the voluntary and confidential nature of their comments, and approximately how long it would take to complete the survey. A time for survey pick-up was scheduled. If this person did not agree to take the survey or was not

available, the 18 years or older person with the next closest upcoming birthday was asked to participate (and so on, until a resident agreed).

Approximately one week later, the researcher returned to the house to collect the completed survey. A 'thank you card' then was given to the respondent. Also at that time, a separate form to acquire the respondent's name and address was given to the respondent if they chose to be entered into a drawing for one of several incentive gifts (coupons for a local restaurant or a spa ticket to local hot springs).

To comply with Michigan State University and federal regulations, the survey instrument was submitted to the appropriate Institutional Review Board (IRB) at Michigan State University for its review before printing of surveys and the beginning of data collection. for the survey process are provided in Appendices B through G: Cover letters for survey administration (Appendix B); Interview protocol (Appendix C); Route for survey distribution (Appendix D); Contact and Front-End Interview form (Appendix E); Thank you card for returning the survey (Appendix G). Survey (Appendix H); Photos of Incentives (Appendix I); Japanese cover letters for the survey (Appendix J); Japanese survey (Appendix K).

Preparation for Data Analysis

Data cleaning.

After distributing questionnaires, 198 surveys were collected. Though most of the surveys had answers on all the question items, some surveys had many missing answers. List-wise deletion is a popular method for dealing with incomplete data, through which cases having a missing value for any item contributing to a variable in the data are excluded from all computations. Questionnaires with missing answers were removed from the sample using the list-wise deletion method (Byrne, 2010), based on pre-determined rules designed by the author.

Path analysis was used to examine the indirect effects of Personal Economic Benefits from Tourism Development on endogenous variables used in this study (mediation analysis is included in path analysis), which is a special kind of Structural Equation Modeling (SEM). For SEM, complete data are required; thus, this method has been widely used by researchers who use SEM for analysis (Byrne, 2010). The disadvantage of the list-wise deletion approach is loss of information resulting from the reduced sample size. However, list-wise deletion was used because there were a sufficient number of responses for the proposed analysis after removal of questionnaires.

Using the list-wise deletion approach, 26 surveys were removed from the sample, reducing the sample size to the targeted minimum number needed (n = 172). After removing the cases according to the list-wise method, there still were cases with missing values. Those cases were supplied with the average score of all the cases for the given construct according to the mean imputation method.

Test of reliability for variables in this study.

When instruments are constructed and evaluated, social scientists must consider two technical elements: reliability and validity. Reliability refers to the degree to which a particular technique, applied repeatedly to the same object, yields the same result each time (Babbie, 2004). In this study, internal consistency reliability was first evaluated based on use in previous studies, then was evaluated for responses provided in this study.

Validity refers to the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration (Babbie, 2004). In this study, convergent validity and construct validity were evaluated. Convergent validity refers to the extent to which a measure covers the range of meanings included in a concept. Construct validity refers to the

extent to which the scale item logically appears to reflect accurately what it is intended to measure. In this study, convergent validity and construct validity were evaluated based on review by tourism scholars who reviewed the questionnaires. (See section on Revision of the Questionnaire and Back Translation.)

In this study, reliability of variables was measured using internal consistency. Internal consistency indicates the extent to which items measure the same thing. Cronbach's internal consistency reliability test (correlation ranging from 0 to 1) has been used widely in developing scales for measuring residents' attitudes toward tourism. A coefficient score of .7 or higher indicates an acceptable level of reliability (Nunnaly & Berstein, 1994).

To compute internal consistency of scales, Cronbach's internal consistency reliability test and corrected item-to-total correlation (acceptable score of .3 or above) were used. Cronbach's alpha results for composite scales in the study are shown in Tables 3 and 4. All the composite scales in the study met the score of .7 except for environmental benefits from tourism (.55). To meet the acceptable score of item-to-total correlation, two statements were deleted from the composite scale of environmental benefits from tourism. Though the score for the composite scale of community attachment met the minimum score of .7, one item was deleted to raise Cronbach's alpha from 0.81 to 0.82. For the composite scale of personal economic benefits, one question item was deleted prior to conducting reliability and multiple regression analyses. The reason is that both this question and its response options were categorical, and the variable was conceptually different from the other three variables. This question was about involvement of respondent's family members in the tourism industry. The other three questions were about the respondent's involvement in the tourism industry.

Table 3

Internal Consistency of Items for Four Exogenous Variables

Exogenous variables	Question items	Cronbach's alpha (before)[a]	Cronbach's alpha (after)[b]
Ecocentric Attitudes	Q36. The balance of nature is very delicate and easily upset. Q37. Humans are severely abusing the environment. Q38. The so-called 'ecological crisis' facing humankind has been greatly exaggerated. (reverse-scaled)* Q39. Natural ecosystem processes are strong enough to cope with the impact of modern industrial nations. (reverse-scaled)* Q40. If things continue on their present course, we will soon experience a major ecological catastrophe.	.73	.73 (No items removed)
Community Attachment	Q32. How much do you feel "at home" on Iriomote Island? Q33. How satisfied are you with Iriomote Island as a place to live? Q34. What level of interest do you have in knowing what goes on in Iriomote Island?* Q35. How sorry would you be if you moved away from Iriomote Island? (reverse-scaled)	.81	.82
Personal Economic Benefits from Tourism	Q44. How much economic benefit do you personally receive from tourism in your community? Q45. How much of the income of the company you work for (or business you own) comes from the tourist trade? Q46. Which statement below most accurately explains your economic tie to the tourism industry in Iriomtoe Island? Q47 Are any of your family members living in your household involved in tourism industries?*	.85	.85
Utilization of Tourism Resources	Q41. Iriomote Island's natural destinations, such as waterfalls and beaches, are favorite places to go during my free time. Q42. Visiting Iriomote Island's natural destinations, such as waterfalls and beaches, are most satisfying to me. Q43. Iriomote Island's natural destinations express who I am.	.75	.75 (No items removed)

Note. * indicates question items that were removed to raise the score of Cronbach's Alpha for internal consistency. [a] indicates Cronbach's Alpha before removing cases. [b] indicates Cronbach's Alpha after removing cases.

Table 4

Internal Consistency of Items for Endogenous Variables and the Ultimate Dependent Variable

Endogenous variables	Questionnaire items	Cronbach's alpha (before)[a]	Cronbach's alpha (after)[b]
Economic Benefits	Q1. Tourism increases employment opportunities in Iriomote. Q3. Tourism increases investment opportunities in Iriomote. Q5. Tourism brings more business for local people and small businesses in Iriomote. Q7. Tourism increases revenues from tourists for Iriomote's government Q9. Tourism increases profits to locally-owned small businesses in Iriomote.	.73	.73 (No items removed)
Economic Costs	Q2. Tourism causes increases in house prices in Iriomote. Q4. Tourism causes increases in the cost of living in Iriomote. Q6. Tourism causes increases in the price of products and services in Iriomote. Q8. Tourism benefits only a small number of residents in Iriomote. Q10. Profits generated by tourism activity end up with companies and persons from outside Iriomote Island.	.75	.75 (No items removed)
Social and Cultural Benefits	Q11. Tourism provides incentives to locals to preserve Iriomote's local culture Q13. Tourism provides parks and other recreational areas for Iriomote residents. Q15. Tourism provides incentives to restore historical buildings in Iriomote. Q17. Tourism encourages improvement in the quality of roads and other public facilities in Iriomote. Q19. Tourism development provides cultural activities for residents in Iriomote. Q21. Tourism enhances cultural exchange between tourists and residents in Iriomote. Q23. Tourism has positive impacts on cultural identity of Iriomote residents.	.76	.76 (No items removed)

Note. * indicates question items that were removed to raise the score of Cronbach's Alpha for internal consistency. [a] indicates Cronbach's Alpha before removing cases. [b] indicates Cronbach's Alpha after removing cases.

Table 4 (cont'd)

Endogenous variables	Questionnaire items	Cronbach's alpha (before)[a]	Cronbach's alpha (after)[b]
Social and Cultural Costs	Q20. Tourism negatively affects Iriomote's culture. Q22. Tourism causes unpleasant overcrowding of public and leisure spaces in Iriomote. Q25. Tourism causes damage to the natural surroundings and to the countryside on Iriomote Island. Q27. Tourism causes destruction of Iriomote's ecosystem. Q29. Tourism increases environmental contamination (rubbish, wastewater) on Iriomote Island. Q31. Tourism increases noise on Iriomote.	.75	.75 (No items removed)
Environmental Benefits	Q24. Tourism development improves the physical appearance of Iriomote Island. Q26. Tourism provides incentives for local people to protect and conserve natural resources on Iriomote Island.* Q28. Tourism provides incentives for new park development in Iriomote Island. Q30. Tourism provides incentives for local people to purchase open space on Iriomote Island.*	.43	.55
Environmental Costs	Q25. Tourism causes damage to the natural surroundings and to the countryside on Iriomote Island. Q27. Tourism causes destruction of Iriomote's ecosystem. Q29. Tourism increases environmental contamination (rubbish, wastewater) on Iriomote Island. Q31. Tourism increases noise on Iriomote.	.83	.83 (No items removed)
Support for Tourism Development	Q48. Iriomote should try to attract more tourists. Q49. Tourism can be one of the most important economic development options for Iriomote Island. Q50. Additional tourism would help Iriomote grow in the right direction. Q51. I support tourism having a vital role in the Iriomote Island community.	.83	.83 (No items removed)

Note. * indicates question items that were removed to raise the score of Cronbach's Alpha for internal consistency.[a] indicates Cronbach's Alpha before removing cases. [b] indicates Cronbach's Alpha after removing cases.

Data Analysis

This study employed several statistical analysis tools to describe the sample and test the hypotheses associated with the proposed model. They were descriptive analysis, independent t-tests, multiple regression, and qualitative analysis of open-ended questions. The computer software used for this analysis was the Statistical Package for the Social Science (SPSS) version 18.0 for Windows.

Descriptive analysis.

To describe the sample population, socio-economic and demographic data (gender, age, occupation, income level and education level) were collected. In addition, native-born status, length of Iriomote Island residence, and residents' perceptions of where they live on the island were collected. Finally, open-ended questions about residents' identification of the primary benefits of tourism, their concerns about tourism development, and opinions about desirable tourism development were asked. Profiles of residents' characteristics were provided for each variable in frequencies and/or percentage.

Multiple regression analysis.

In this study, multiple regression analysis to test the effects of PEB as a mediating variable and to obtain a R square value (first study focus), and analysis of study hypotheses (the second and third study foci) were used. In addition, independent sample t-tests were conducted to develop an appropriate model for study hypotheses.

Regression analysis can be used to predict an outcome variable based on a predictor variable (Field, 2005). The predictor in a regression model has a coefficient (b_1) that represents the gradient of the regression line. The value of beta represents the change in the outcome variable resulting from a unit change in the predictor variable.

Multiple regression is an extension of simple regression. Rather than using values on one independent/predictor variable to estimate values on a dependent/criterion variable, values on several independent/predictor variables are used (Kachigan, 1991). Multiple regression establishes the effectiveness of a set of independent variables in explaining the proportion of the variance in a dependent variable using a significance test of R. By comparing beta weights, multiple regression determines which independent variables are the strongest predictors of dependent variables (Cohen & Cohen, 1983). The following assumptions have to be met to be able to draw conclusions about a population based on a regression analysis: linearity; multivariate normality; homoscedasticity; independence of errors; and absence of multicollinearity. In addition to these assumptions, all predictor variables must be either quantitative or categorical, and the outcome variable must be quantitative and continuous.

These assumptions for multiple regression were checked before the analysis. The assumption of linearity refers to a straight-line relationship between two variables. Nonlinearity is diagnosed either from residuals plots in analyses involving a predicted variable or from bivariate scatterplots between pairs of variable (Tabachnick & Fidell, 2001). In plots where standardized residuals are plotted against predicted values, nonlinearity is shown when most of the residuals are above the zero line on the plot at some predicted values and below the zero line at other predicted values (Tabachnick & Fidell, 2001). All the variables in the study were diagnosed by creating residuals plots and most of the residuals are below the zero line for all the variables in the study. Linearity between two variables is assessed by checking bivariate scatterplots. If both variables are normally distributed and linearly related, the scatterplot is oval-shaped. If one of the variables is not normal, the scatterplot between these variables is not oval (Tabachnick & Fidell, 2001). All the variables for this study were oval in shape.

The assumption of multivariate normality is the assumption that each variable and all linear combinations of the variables are normally distributed (Tabachnick & Fidell, 2001). Normality was examined in terms of skewness and kurtosis. Skewness refers to the symmetry of the distribution. Skewness within the range between -3 and 3 (Kline, 1998) is considered acceptable. All the variables in the study were within this acceptable range. Kurtosis indicates a relative excess of cases in the tails of a distribution relative to a normal distribution. A kurtosis score of between -10 and 10 (Kline, 1998) is considered acceptable. All the variables in the study were within this acceptable range.

The assumption of homoscedasticity means that the variance of the residual terms should be constant at each level of the predictor variable(s) (Field, 2005). Homoscedasticity can be checked by casewise diagnostics. In casewise diagnostics, it is expected that 95% of cases in the data should have standardized residuals within ±2.5. In this study, the number of cases outside of which standardized residuals outside of ±2.5 was within 5%.

The assumption of independent errors means that the residual terms should be uncorrelated for any two observations. Independence of errors can be checked by the Durbin-Watson test, which tests for serial correlation between errors. The test statistic can vary between 0 and 4 with a value of 2, meaning that the residuals are uncorrelated (Fields, 2005). In this study, the values of Durbin-Watson test for all the residual terms were between 1 and 3. Thus, the assumption of independent errors was met.

The assumption of absence of multicollinearity is that there is no strong correlation between two or more predictors in a regression model (Field, 2005). The assumption of absence of multicollinearity was assessed by obtaining correlation coefficients for each of the predictor variables (within the exogenous variables and the endogenous variables). Correlation

coefficients of above 0.8 indicate existence of multicollinearity. The correlation coefficient between exogenous variables ranged from -0.384 to 0.641. The correlations between endogenous variables ranged from -0.043 to 0.349. Tables for the correlation coefficient for exogenous variables and edogenous variables are provided in Appendix N. In summary, the correlation coefficients among all the predictors in this study are below 0.8. All the correlation coefficients between exogenous variables and between endogenous variables meet this criterion.

Multiple regression models used in the study.

To validate and extend the model developed previously by Jurowski et al. (1997), Gursoy et al. (2002), Gursoy and Rutherford (2004), and Perdue et al. (1990), several standard regression and standard multiple regression models were tested.

The variable of interest for the following regression models is perceptions of economic costs. Regression Model 1 was used to test hypotheses 1, 2, and 3. The effects of ecocentric attitude, community attachment, and utilization of tourism resources on economic costs were tested. (Regression Models 2, 3, and 4 were omitted; alternatively, hypotheses 1, 2, and 3 were incorporated into regression model 1.) Regression Model 4 was used to test hypothesis 4, the effects of economic costs on support for tourism development. In this model, the effects of the other endogenous variables (economic benefits, social and cultural benefits, social and cultural costs, environmental benefits, and environmental costs) on support for tourism development were tested simultaneously.

The variable of interest for the following regression models is ecocentric attitudes. Regression Model 5 was used to test hypothesis 5, the effects of ecocentric attitude on perceptions of economic benefits. In this model, the effects of the other exogenous variables (community attachment and utilization of tourism resources on economic benefits) were tested

simultaneously. Regression Model 6 was used to test hypothesis 6, the effects of ecocentric attitude on perceptions of social and cultural benefits. In this model, the effects of the other exogenous variables (community attachment and utilization of tourism resources) on social and cultural benefits were tested simultaneously. Regression Model 7 was used to test hypothesis 7, the effects of ecocentric attitude on perceptions of social and cultural costs. In this model, the effects of the other exogenous variables (community attachment and utilization of tourism resources) on social and cultural costs were tested simultaneously. Regression Model 8 was used to test hypothesis 8, the effects of ecocentric attitude on perception of environmental benefits. In this model, the effects of the other exogenous variables (community attachment and utilization of tourism resources) on environmental benefits were tested simultaneously. Regression Model 9 was used to test hypothesis 9, the effects of ecocentric attitude on perceptions of environmental costs. In this model, the effects of the other exogenous variables (community attachment and utilization of tourism resources) on environmental costs were tested simultaneously. Regression Model 10 was used to test hypothesis 10, the effects of ecocentric attitude on support for tourism development. In this model, the effects of the other exogenous variables (community attachment and utilization of tourism resources) on support for tourism development were tested simultaneously. All of the hypotheses except for hypothesis H4 were tested using personal economic benefits from tourism development as a mediating variable.

Qualitative analyses of open ended-questions.

The questionnaire included three open–ended questions, which asked about residents' opinions about the primary benefits resulting from tourism development, residents' concerns about tourism development, and types of tourism development residents desire in the future. Responses for the questions were organized into categories based on emerging response themes.

Table 5

Multiple Regression Models Used in this Study

Variables of interest and hypotheses	Independent variables	Dependent variables
	Model 1	
Economic Costs (H_1) Economic Costs (H_2) Economic Costs (H_3)	Ecocentric Attitude Community Attachment Utilization of Tourism Resource	Economic Costs
	Model 4	
Economic Costs (H_4) Other exogenous variables	Economic Costs Economic Benefits Social and Cultural Benefits Social and Cultural Costs Environmental Benefits Environmental Costs	Support for Tourism Development
	Model 5	
Ecocentric Attitude (H_5) Other exogenous variables	Ecocentric Attitude Community Attachment Utilization of Tourism Resource	Economic Benefits
	Model 6	
Ecocentric Attitude (H_6) Other exogenous variables	Ecocentric Attitude Community Attachment Utilization of Tourism Resource	Social and Cultural Benefits
	Model 7	
Ecocentric Attitude (H_7) Other exogenous variables	Ecocentric Attitude Community Attachment Utilization of Tourism Resource	Social and Cultural Costs
	Model 8	
Ecocentric Attitude (H_8) Other exogenous variables	Ecocentric Attitude Community Attachment Utilization of Tourism Resource	Environmental Benefits
	Model 9	
Ecocentric Attitude (H_9) Other exogenous variables	Ecocentric Attitude Community Attachment Utilization of Tourism Resource	Environmental Costs
	Model 10	
Ecocentric Attitude (H_{10}) Other exogenous variables	Ecocentric Attitude Community Attachment Utilization of Tourism Resource	Support for Tourism Development

Note: H means hypothesis.

CHAPTER IV

RESULTS

The broad purpose of this study was to examine residents' attitudes toward tourism in a Japanese island destination. At first, ten hypotheses were presented regarding residents' attitudes toward an island destination. After conducting three statistical analyses to determine an appropriate model, ultimately, eleven hypotheses were tested. In this chapter, the following topics are reported: (1) description of the sample based on socio-economic and demographic characteristics; (2) description of exogenous variables used in the conceptual model (ecocentric attitudes, community attachment, utilization of tourism resources, and support for tourism development), a mediating variable (personal economic benefits from tourism), and endogenous variables (economic benefits, economic costs, social and cultural benefits, social and cultural costs, environmental benefits, environmental costs); and ultimate dependent variable (support for tourism), and (3) results of analysis of the study hypotheses, based on use of standard multiple regression to examine the relationships among variables (H_1-H_{11}).

Socio-economic and Demographic Profile

The socio-economic and demographic characteristics of the respondents from Iriomote Island are presented in this section. The total number of usable questionnaires was 172. As shown in Table 6, the ages of participants ranged from 19 to 97 years, with greatest representation in the 40- to 49-year old age group (27%), the 50- to 59-year old group (25.9%) and the 30- to 39-year old group (23.8%). The average age of survey respondents was 46 (M = 46.08, SD =13.65). Three age groups (30-39, 40-49, 50-59 years old) represented the majority of respondents in this survey (76.8%). This does not reflect the percentage (47.81%) of the same

three age groups in the total population of Iriomote Island, based on census data compiled by Taketomi-cho Municipal Office. The reason for this discrepancy may be that the sample population for this study included only residents 18 years and older. Comparable group statistics are not available, so the exact percentage of the population segment less than 18 years old is unknown. Two different data sets are published by the municipal government of Taketomi-cho. In one of the data sets, age is segmented in increments of five years (e.g., 0 to 5 years old, 6 to 10 years old, 11 to 15 years old). The other data set segments the population into three categories, 0 to 15 years old, 16 to 65 years old, and 66 and over. Thus, comparable statistics are not available.

Table 6

Age of Iriomote Island Respondents

Age	No. responses (n = 170)	%
18-29	17	10.0
30-39	41	23.8
40-49	47	27.3
50-59	44	25.6
60-69	13	7.6
70 and over	8	4.7

As shown in Table 7, more than one half of survey respondents (56%) were female. This does not precisely reflect the gender profile of the Iriomote community, which has a male population of 1,209 (53%) and female population of 1,079 (47%) as of the census compiled by Taketomi-cho Municipal Office in 2011. This is a potential source of bias. Although efforts were not made specifically to get a male/female ratio that reflects the adult population of Iriomote in this survey, the respondents were identified according to a predetermined sampling procedure that should result in a profile reflective of the population. Other possible reason for

this discrepancy may be that the questionnaires returned by women respondents were eliminated through the list-wise deletion according to the predetermined rules in the data cleaning process. Possible reasons are that women were more likely to agree to complete the survey, or household female actually completed the survey for a male who accepted one, or the actual distribution profile was different from the population profile. Regardless of reason, the potential bias is likely to be minimal with a difference of 44.2% male versus 55.8% female.

Table 7

Gender of Respondents on Iriomote Island

Gender	No. responses (n = 172)	%
Male	76	44.2
Female	96	55.8

As shown in Table 8, the majority of respondents (34.3%) completed high school, but had no higher education degree. Almost one-quarter (24.4%) completed a four-year college degree. Smaller groups of residents had completed only a technical school degree (14.5%) or a two-year college degree (12.2%).

Table 8

Education of Iriomote Respondents

Highest level of education completed	No. responses (n = 167)	%
Elementary school	4	2.3
Junior high school	12	7.0
High school	59	34.3
Technical school degree	25	14.5
2-year college degree	21	12.2
4-year college degree	42	24.4
Graduate school or beyond	4	2.3

As shown in Table 9, almost half of the respondents (45.9%) indicated having an annual household income of less than ¥2,000,000, which, depending on exchange rates, equates to approximately $16,000 to $24,000 in U.S. dollars. The remaining half of the respondents had household incomes of ¥2,000,000 to ¥2,999,999 (19.4%), ¥3,000,000 to ¥3,999,999 (9.4%), ¥4,000,000 to ¥4,999,999 (7.5%), and ¥5,000,000 or more (7.5%). Residents having no income accounted for seven percent of respondents. The average income of Iriomote residents is not available. The average income of Taketomi-cho residents, which includes Iriomote residents (56% of the population of Taketomi-cho), is ¥25,000,000. The average income of residents in Okinawa prefecture, which includes Taketomi-cho, is ¥20,000,000.

Table 9

Annual Household Income of Iriomote Respondents

Income	No. responses (n = 172)	%
No income	12	7.0
Less than Y2,000,000	11	6.4
Y2,000,000-2,999,999	79	45.9
Y3,000,999-3,999,999	31	18.0
Y4,000,000-4,999,999	15	8.7
Y5,000,000 or more	12	7.0

With regard to occupation (Table 10), the largest groups of respondents were those who were self-employed (23.8%), worked in the private sector (21.5%), and were government employees (19.2%). The remaining respondents were teachers (7.0%), retired (3.5%), housewives (7.6%), and engaged in other occupations (11.6%).

Table 10

Occupation of Iriomote Respondents

Occupation	No. responses (n = 162)	%
Self-employed	41	23.8
Private sector employee	37	21.5
Government employee	33	19.2
Other	20	11.6
Housewife	13	7.6
Teacher	12	7.0
Retired	6	3.5

Regarding employment status (Table 11), the majority of residents (62.8%) held full-time positions and a sizable portion were part-time workers (19.2%). The rest were residents who did not work (11.6%) and students who had no work (1.7%).

Table 11

Employment Status of Iriomote Respondents

Employment status	No. responses (n = 164)	%
Full-time	108	62.8
Part-time	33	19.2
Do not work	20	11.6
Student no work	3	1.7

With regard to place of birth (Table 12), the majority of respondents were born on the Japanese Mainland (41.9%). A sizable number of respondents were born on Okinawa Main Island (20.9%), with small groups of residents born on other Okinawa Prefecture Islands (19.8%) and on Iriomote Island (17.4%). As illustrated by this data, the smallest group was those born on Iriomote Island. Over 80% were born elsewhere. One possible reason for such a large percent of non-Iriomote residents is that many residents came initially to the island as

tourists, seeking a different life-style and/or new job opportunities, then decided to stay or returned to the island to live. One possible reason for the small number of respondents born on Iriomote Island is that the highest level of education provided on the island is junior high school. Most junior high school graduates leave Iriomote Island to seek employment and/or higher education. Then they continue their lives in a location outside of Iriomote and do not return to the Island for a considerable portion of their adult lives. Consequently, only a small percentage of respondents are lifelong residents.

Table 12

Place of Birth of Iriomote Residents

Place of birth	No. responses (n = 172)	%
Iriomote Island	30	17.4
Okinawa Main Island	36	20.9
Other Okinawa Prefecture Island	34	19.8
Japanese Mainland	72	41.9

Regarding geographic residency on Iriomote, as shown in Table 13, more respondents lived on the westside (54.7%) than the eastside (43.6%). This closely reflects the geographic distribution of Iriomote Island's population, as indicated by population census compiled by Taketomi-cho Municipal Office in 2010, westside (57%) eastside (43%).

Table 13

Current Residence of Respondents on Iriomote Island

Location of current residence	No. responses (n = 170)	%
East side	75	43.6
West side	94	54.7
Other	1	0.6

Regarding respondents' total length of residency on Iriomote Island, the largest group (34.9%) had lived on Iriomote Island five years or less. However, as shown in Table 14, the next largest segment of respondents (19.8%) had resided on the island 31 years or more. Two groups of residents had lived on Iriomote Island for 11-15 years (14%), and 6-10 years (12.8%). One potential reason for having so many respondents who lived on Iriomote five years or less may be that teachers in junior high schools are transferred from island to island in Okinawa Prefecture every 3 to 5 years early in the teachers' careers. According to the statistics compiled by Taketomi-cho, about ten percent of working people in Iriomtoe are engaged in education, so this would account for only a portion of this large group of short-time residents.

Table 14

Total Number of Years Living on Iriomote Island

Total length of residency on Iriomote Island	No. responses (n = 169)	%
0-5 years	60	34.9
6-10 years	22	12.8
11-15 years	24	14.0
16-20 years	11	6.4
21-25 years	12	7.0
26-30 years	6	3.5
31 or more years	34	19.8

With regard to the pattern of residency on Iriomote Island, the largest group of respondents replied that "I was born elsewhere, but then moved to Iriomote Island and have lived here continuously since that time" (57.6 %). Less than one fifth of respondents replied that, "I was born on Iriomote Island, left for some years, then returned" (26.4 %). The next largest group was residents who replied "I have moved back and forth from Iriomote Island for two or more cycles (8.1%)." More than one quarter of respondents replied "Other" (10.5%). The

smallest group of residents replied, “I was born on Iriomote Island and have lived here my entire life (2.9%).”

Table 15

Patterns of Residence of Respondents on Iriomote Island

Patterns of residency on the Island	No. responses (*n*=164)	%
I was born elsewhere, but then moved to Iriomote Island and have lived here continuously since that time.	99	57.6
I was born on Iriomote Island, left for some years, then returned.	28	16.4
Others	18	10.5
I have moved back and forth from Iriomote Island for two or more cycles.	14	8.1
I was born on Iriomote Island and have lived here my entire life	5	2.9

Descriptions of Exogenous, Mediating, Endogenous, and Ultimate Variables in the Model

Descriptive statistics for each of the items comprising the three exogenous variables, ecocentric attitudes, community attachment, and utilization of tourism resources used in the model for hypothesis testing are provided in Table 16.

The variable ecocentric attitudes represents strong beliefs in the preservation and protection of the environment and is identified as a variable that influences attitudes toward tourism in previous research (Jurowski et al., 1997). To assess the exogenous variable of ecocentric attitudes, respondents were asked their level of agreement with several statements, using a five-point Likert scale, with responses ranging from strongly disagree to strongly agree. As shown in Table 16, the most strongly held belief about environmental conditions, based on the highest average score, is “If things continue on their present course, we will soon experience a major ecological catastrophe” (M = 3.96, SD = 1.21).

The next most strongly held belief about environmental conditions was "Humans are severely abusing the environment" (*M* = 3.94, *SD* = 1.13). The most weakly held belief about environmental conditions was "The balance of nature is very delicate and easily upset" (*M* = 3.86, *SD* = 1.27). However, the average score of all four items together still indicates ecocentric attitudes as a strong belief because three of the four scores are almost 4.

Table 16

Means and Standard Deviations of Items Comprising the Exogenous Variables

Ecocentric attitudes (α=.73)	*M*	*SD*
If things continue on their present course, we will soon experience a major ecological catastrophe	3.96	1.21
The balance of nature is very delicate and easily upset.	3.86[a]	1.27
Humans are severely abusing the environment.	3.94[a]	1.13
The so-called 'ecological crisis' facing humankind has been greatly exaggerated. (reverse scaled) (not used for hypotheses)	2.36[a]	1.21
Community attachment (α=.82)	*M*	*SD*
How much do you feel "at home" on Iriomote Island?	3.77[a]	1.12
How satisfied are you with iriomote Island as a place to live?	3.90[a]	1.01
How sorry would you be if you moved away from Iriomote Island?	3.83[a]	1.08
Utilization of tourism resources (α= .75)	*M*	*SD*
Iriomote Island's natural destinations, such as waterfalls and beaches, are favorite places to go during my free time.	4.26[a]	0.95
Visiting Iriomote Island's natural destinations such as waterfalls and beaches is most satisfying to me.	4.23[a]	0.99
Iriomote Island's natural destinations express who I am.	3.28[a]	0.93

Note. [a] Scale ranged from 1 = strongly disagree through 5 = strongly agree.

Community attachment has been shown in previous research to be an important variable for explaining residents' attitudes toward tourism. Community attachment is described as people's strong positive feeling toward community. The exogenous variable of community attachment consisted of three items with answers "not at all" on one end and "quite a lot" on the

other end. The most strongly held feeling about community attachment, based on the highest average score, was residents' degree of satisfaction with Iriomote Island (M =3.9, SD = 1.01). The next most strongly held feeling was the degree of disappointment that residents feel if they need to move away from Iriomote Island (M =3.83, SD = 1.08). The most weakly held feeling was the degree to which residents feel "at home" on Iriomote Island (M = 3.77, SD = 1.12).

The exogenous variable of utilization of tourism resources comprised three questions for which respondents were asked their strength of agreement, using a five-point Likert scale, with responses ranging from strongly disagree to strongly agree. The statement with which respondents agreed most strongly was "Iriomote Island's natural destinations, such as waterfalls and beaches, are favorite places to go during my free time" (M = 4.26, SD = 0.95). The statement with which respondents agreed next most strongly was "Visiting Iriomote Island's natural destinations such as waterfalls and beaches is most satisfying to me" (M = 4.23, SD = 0.99). The statement with which respondents agreed least strongly was "Iriomote Island's natural destinations express who I am" (M = 3.28, SD = 0.93), although the mean score is still above the neutral point.

The mediating variable of personal economic benefits from tourism development consisted of three questions (see Table 17 and 18). First, respondents were asked their involvement with the tourism industry based on these statements, with 1 being "directly employed," 2 being "indirectly involved," and 3 being "not employed in tourism industry." The majority of respondents chose the statement 3, "not employed in tourism industry,"

Second, respondents were asked the amount of economic benefit they personally receive from tourism in their community on a 5-point scale (1 = none, 2 = very little, 3 = some, 4 = quite a bit, 5 = a lot) (M = 2.56, SD = 1.53). Third, respondents were asked their estimate of

income of the company they work for or business they own (1 = 0%, 2= 1-25%, 3=26-50%, 4 = more than 50%, 5= dependent on tourism) (*M* = 2.73, *SD* = 1.56).

Table 17

Distribution of Responses for Employment in Tourism, One of the Personal Economic Benefits from Tourism (PEB) Items

Statement	Responses	Frequency	%	Mode	Median
Which statement below most accurately explains your economic tie to the tourism industry in Iriomtoe Island?	1: I am directly employed in the tourism industry	46	26.7	3	2
	2: I am indirectly employed in the tourism industry (your work place provides at least part of its products/services to tourism businesses, but this is not the focus of the business)	48	27.9		
	3: I am not employed in the tourism industry in Iriomote Island	78	45.3		
	Indicate your work/job type:_____				

Table 18

Distribution of Responses for Personal Economic Benefits from Tourism (PEB) Items, Economic benefits resident receive and Residents' Perceptions of Income of the company from Tourism

Statement	Responses	Frequency	%	*M*	*SD*
How much economic benefit do you personally receive from tourism in your community	1: None	66	38.4	2.56	1.53
	2: Very little	26	15.1		
	3: Some	28	16.3		
	4: Quite a bit	22	12.8		
	5: A lot	30	17.4		
How much of the income of the company you work for (or business you own) comes from the tourist industry?	1: 0%	63	36.6	2.73	1.56
	2: 1-25%	17	9.9		
	3: 26-50%	30	17.4		
	4: 51-75%	28	16.3		
	5: Dependent on tourism	34	19.8		

Descriptive statistics for each of the items comprising the six endogenous variables (economic benefits and costs, social and cultural benefits and costs, and environmental benefits and costs) are presented in Tables 19, 20, and 21.

Five items comprising the endogenous variable of economic benefits were measured using a five-point scale indicating level of agreement with each statement. The item receiving the strongest level of agreement was about contribution of tourism to employment generation on Iriomote Island (M = 4.40, SD = 0.9). The item receiving weakest level of agreement was about respondents' perceptions of tourism's contribution to increasing investment opportunities in Iriomote Island (M = 3.64, SD = 1.01), although even this item received positive support. Means for this variable ranged from 4.40 to 3.64.

Overall, respondents were fairly neutral in their agreement with items comprising the endogenous variable of economic costs, although means for all but one item indicated slight disagreement, as shown in Table 19. The item receiving the strongest level of agreement in perceiving economic costs from tourism was about respondents' perception of increase in the price of products and services in Iriomote due to tourism (M = 3.38, SD = 0.99). The statement showing the weakest level of agreement was about profits generated by tourism activity ending up with companies and persons from outside Iriomote Island (M = 2.63, SD = 1.19). Overall the scores for economic benefits variable were higher than those for the economic costs variable.

Table 19

Means and Standard Deviations of Perceived Economic Benefits and Costs

Economic benefits (α = .73)	*M*	*SD*
Tourism increases employment opportunities in Iriomote.	4.40	0.9
Tourism brings more business for local people and small businesses in Iriomote.	4.12	0.98
Tourism increases revenues from tourists for Iriomote's government.	3.87	1.07
Tourism increases profits to locally-owned small businesses in Iriomote.	3.74	0.96
Tourism increases investment opportunities in Iriomote.	3.64	1.01
Economic costs (α = .75)	*M*	*SD*
Tourism causes increases in the price of products and services in Iriomote.	3.38	0.99
Tourism causes increases in house prices in Iriomote.	3.22	1.0
Tourism benefits only a small number of residents in Iriomote.	3.16	1.25
Tourism causes increases in the cost of living in Iriomote.	3.03	1.1
Profits generated by tourism activity end up with companies and persons from outside Iriomote Island.	2.63	1.19

Note. Based on a five-point scale on which respondents indicated level of agreement, from 1=strongly disagree through 5=strongly agree.

As shown in Table 20, the endogenous variable of social and cultural benefits consists of seven items. The items receiving the strongest levels of agreement were about respondents'

perceptions about enhancement of roads and public facilities on Iriomote due to tourism (*M* = 3.74, *SD* = 1.01). The item receiving the weakest mean agreement score was about their perception of provision of parks and other recreational areas for Iriomote residents due to tourism. (*M* = 2.86, *SD* = 1.19). The range of respondent scores was 3.84 through 2.86.

As shown in Table 20, the endogenous variable of social and cultural costs comprised six statements. The statement receiving the highest level of agreement with perceived social and cultural costs was perceptions of increase in traffic accidents due to tourism (*M* = 3.81, *SD* = 1.65). The statement receiving the weakest level of agreement was respondents' perceptions of negative effects on Iriomote's culture due to tourism (*M* = 2.65, *SD* = 1.08). The range of respondent scores was 3.81 through 2.65. The ranges for item scores for social and cultural benefits and costs are similar to each other.

Table 20

Means and Standard Deviation of Perceived Social and Cultural Benefits and Costs

Social and cultural benefits (α = .76)	*M*	*SD*
Tourism encourages improvement in the quality of roads and other public facilities in Iriomote.	3.74	1.01
Tourism enhances cultural exchange between tourists and residents in Iriomote.	3.66	0.94
Tourism provides incentives to restore historical buildings in Iriomote.	3.64	0.95
Tourism provides incentives to locals to preserve Iriomote's local culture.	3.24	1.03
Tourism development provides cultural activities for residents in Iriomote.	3.09	0.96
Tourism has positive impacts on cultural identity of Iriomote residents.	3.09	0.93
Tourism provides parks and other recreational areas for Iriomote residents.	2.86	1.19
Social and cultural costs (α = .75)	*M*	*SD*
Tourism increases traffic accidents in Iriomote.	3.81	1.65
Tourism increases the crime rate in Iriomote.	3.37	1.19
Tourism causes unpleasant overcrowding of public and leisure spaces in Iriomote.	2.90	1.08
Tourism increases traffic congestion in Iriomote.	2.81	1.10
Tourists negatively affect Iriomote residents' way of living.	2.77	0.98
Tourism negatively affects Iriomote's culture.	2.65	1.10

Note. Based on a five-point scale on which respondents indicated level of agreement from 1=strongly disagree through 5=strongly agree.

As shown in Table 21, the endogenous variable of environmental benefits consisted of two statements and they indicated weaker levels of agreement than perceptions of environmental costs. These items were about tourism providing incentives for new park development in Iriomote Island (*M* = 2.77, *SD* = 1) and tourism improving the physical appearance of Iriomote Island (*M* = 2.63, *SD* = 1.16).

The endogenous variable of environmental costs consisted of four statements. The items receiving the highest levels of agreement regarding environmental costs were respondents' perceptions about increase in environmental contamination (rubbish, wastewater) on Iriomote Island due to tourism (*M* = 3.63, *SD* = 1.33) and destruction of Iriomote's ecosystem due to tourism (*M* = 3.47, *SD* = 1.19). The items for which means were closer to the neutral score were

respondents' perceptions of increase in noise on Iriomote due to tourism (*M* = 3.15, *SD* = 1.17) and damage to the natural surroundings and countryside of Iriomote Island due to tourism (*M* = 3.08, *SD* = 1.07).

Table 21

Means and Standard Deviations of Perceived Environmental Benefits and Costs

Environmental benefits (α = .55)	*M*	*SD*
Tourism provides incentives for new park development in Iriomote Island. (not used for hypotheses analysis)	2.77	1.05
Tourism development improves the physical appearance of Iriomote Island.	2.63	1.16
Environmental costs (α= .83)	*M*	*SD*
Tourism increases environmental contamination (rubbish, wastewater) on Iriomote Island.	3.63	1.33
Tourism causes destruction of Iriomote's ecosystem.	3.47	1.19
Tourism increases noise on Iriomote.	3.15	1.17
Tourism causes damage to the natural surroundings and to the countryside on Iriomote Island.	3.08	1.07

Note. Based on a five point-scale on which respondents indicated level of agreement, from 1 = strongly disagree through 5 = strongly agree.

As shown in Table 22, the ultimate dependent variable of support for tourism development consisted of four statements and the average agreements for all four were above the neutral score. The highest scores showing strong agreement in the level of support for tourism development were about respondents' perceptions of tourism's role in the Iriomote Island community (*M* = 3.95, *SD* = 1.01) and perceptions of tourism as the most important economic development option for Iriomote Island (*M* = 3.87, *SD* = 1.04): "Iriomote should try to attract more tourists" (*M* = 3.68, *SD* = 1.21) and "Additional tourism would help Iriomote grow in the right direction" (*M* = 3.42, *SD* = 1.17).

Table 22

Means and Standard Deviations of Support for Tourism

Support for tourism development (α = .9)	*M*	*SD*
I support tourism having a vital role in the Iriomote Island community.	3.95	1.01
Tourism can be one of the most important economic development options for Iriomote Island.	3.87	1.04
Iriomote should try to attract more tourists.	3.68	1.21
Additional tourism would help Iriomote grow in the right direction.	3.42	1.17

Note. Based on a five-point scale on which respondents indicated level of agreement, from 1=strongly disagree through 5 = strongly agree.

Analysis of the Study Hypotheses

Studies by Jurowski et al. (1997), Gursoy et al. (2002), Gursoy and Rutherford (2004), and Perdue et al. (1990) were used to develop the model proposed in this study. The models proposed for this study have three exogenous variables, six endogenous variables, and one ultimate dependent variable. The entire model is complex; however, this study has three foci.

The first focus is to test whether perceptions of all six tourism impacts and support for tourism are different between those who receive economic benefits from tourism and those who do not. This was done by testing the mediating effects of personal economic benefits from tourism (PEB) within the model proposed for the study.

The second focus is to add a new variable, perceptions of economic costs, to the models developed in previous studies based on social exchange theory. Subsequently, this study tested three exogenous variables (ecocentric attitudes, community attachment, utilization of tourism resources) on perceptions of economic costs using personal economic benefits from tourism as a mediating variable. Additionally, this study tested the effects of perceptions of economic costs on support for tourism.

The third focus is to examine the effects of ecocentric attitudes on six endogenous variables (economic benefits, economic costs, social and cultural benefits, social and cultural costs, environmental benefits, environmental costs) and the ultimate dependent variable (support for tourism development), using personal economic benefits from tourism as a mediating variable.

First focus: Assessing PEB as a mediating variable.

To examine the difference between residents who receive personal economic benefits from tourism (PEB) and those who do not, three statistical analyses were conducted: 1) sets of independent sample t-tests to compare endogenous variables between the respondents who receive higher PEB and those who do not; 2) multiple regression analysis to test the mediating effects of PEB on the relationships between exogenous and endogenous variables, and between endogenous variables and the ultimate dependent variable; and 3) comparison of R square between the model using PEB as a mediating variable (originally proposed model) and a model using PEB as an exogenous variables (modified model).

Difference between residents who receive personal economic benefits from toursim (PEB) and those who do not through examination of sets of t-tests.

Three sets of independent sample two-tail t-tests were conducted to distinguish between two groups, those who receive personal economic benefits (PEB) and those who do not. Tables 17 and 18 on page 78 show the item questions, scales, means and standard deviations for the variable of PEB used in the sets of t-tests.

The first set of t-tests was performed to determine if there were any significant differences between residents who are not employed in tourism industries (respondents who selected the answer 1= “residents who are not employed by tourism industries) and those who

are employed in the tourism industry, directly or indirectly (2 = “residents indirectly employed” and 3 = “residents directly employed”) as related to their responses to endogenous variables and the ultimate dependent variable. As shown in Table 23, t-tests indicate differences between “Not Employed” and “Employed” respondents on several variables. Significant differences between the two groups were found for four endogenous variables: perception of economic benefits (t = 3.5, p < .001), economic costs (t = -3.13, p < .05), social and cultural benefits (t = 2.71, p < .05), and social and cultural costs (t = -2.34, p < .05). However, differences between the two groups are small, with differences ranging from 0.36 to 0.52 on a scale within absolute value of four in the scale of five. The groups were not different on their average scores for environmental benefits (t = 1.18, p = ns) or environmental costs (t = - 1.18, p = ns).

Table 23

Differences Between "Employed" and "Not Employed" on Endogenous Variables and Ultimate Dependent Variable

Type of variable	Variables	Mean "employed" (n = 94)	Mean "not employed" (n = 78)	Mean difference (in absolute numbers)	t	p
Endogenous Variables	Economic Benefits	4.12	3.76	0.36	3.5	<.001
	Economic Costs	2.92	3.28	0.36	-3.13	<.05
	Social and Cultural Benefits	3.45	3.19	0.26	2.71	<.05
	Social and Cultural Costs	2.89	3.17	0.27	-2.34	<.05
	Environmental Benefits	2.99	2.88	0.12	1.01	n.s.
	Environmental Costs	3.24	3.44	0.20	-1.37	n.s.
Ultimate Dependent Variable	Support for Tourism	3.97	3.45	0.52	3.61	<.001

Note. Scale ranged from 1 = strongly disagree through 5 = strongly agree. n.s. = not significant.

The second set of t-tests was used to determine if there were differences between the two groups in their responses to endogenous variables and the ultimate dependent variable based on the amount of economic benefits they received from tourism development (1 = none, 2 = very little, 3 = some, 4 = quite a bit, 5 = a lot). The purpose of this set of t-tests was to determine differences between residents who gain little or no benefit from tourism (respondents who selected 1 and 2 on the scale) and residents who gain substantial benefits from tourism (respondents who selected 3, 4 and 5 on the scale). Results of the t-tests (Table 24) showed significant differences between the two groups for each of the endogenous variables: perceived

economic benefits (t = 4.05, p < . 001); perceived economic costs (t = -3.99, p < .001); perceived social and cultural benefits (t = 4.61, p < .001); perceived social and cultural costs (t = -2.8, p < .05); perceived environmental benefits (t = 2.22, p < .05); perceived environmental costs (t = -2.19, p < .05); and support for tourism (t = 4.66, p < .001). However, the difference in means for the endogenous variables between the two groups ranges from 0.46 to 0.63 on a scale having an absolute value of four.

Table 24

Differences Between "Gain Little or No Benefit" and "Gain Substantial Benefit" on Endogenous Variables and Ultimate Dependent Variables

Type of variable	Variables	Mean "a lot" (n = 80)	Mean "very little" (n = 92)	Mean difference (in absolute number)	t	p
Endogenous Variables	Economic Benefits	4.17	3.76	0.41	4.05	<.001
	Economic Costs	2.84	3.29	0.46	-3.99	<.001
	Social and Cultural Benefits	3.56	3.13	0.43	4.62	<.001
	Social and Cultural Costs	2.85	3.17	0.32	-2.8	<.05
	Environmental Benefits	3.08	2.83	0.25	2.22	<.05
	Environmental Costs	3.16	3.48	0.32	-2.19	<.05
Ultimate Dependent Variable	Support for Tourism	4.07	3.44	0.63	4.46	<.001

Note. Scale ranged from 1 = strongly disagree through 5 = strongly agree.

The third set of t-tests was used to determine if there were differences between groups in their responses to endogenous variables and the ultimate dependent variable based on the perceived tourism-based income received by the company for whom they work (or the business they owned). Respondents whose employer gained 25% or less of their income [labeled as "limited tourism-based income"] from tourism and those whose employer gained more than 25% of their income [labeled as "More than 25%"] on the endogenous variables (economic benefits and costs, social and cultural benefits and costs, environmental benefits and costs). Results showed that the two groups differed significantly on their perceptions of economic

benefits (t = 3.88, p < .001), perceptions of economic costs (t = -3.56, p < .001), perceptions of social and cultural benefits (t = 3.72, p < .001), and the ultimate dependent variable, support for tourism (t = 4.46, p< .001). However, the difference in means for the endogenous variables between the two groups ranges from 0.39 to 0.41 on a scale within absolute value of 4 in the scale of 5.

Differences in the two groups were not found for three endogenous variables, perceived social and cultural costs (t = -1.18, p < ns), perceived environmental benefits (t =1.18, p < ns), or perceived environmental costs (t = - 0.39, p < ns).

Table 25

Differences in Responses for Respondents Whose Employers Received "More than 25%" and Those Who Received "Limited" Income from Tourism

Type of variable	Variables	Mean "more than 25%" (n = 94)	Mean "limited tourism based income" (n = 78)	Mean difference	t	p
Endogenous Variables	Economic Benefits	4.14	3.75	0.39	3.88	<.001
	Economic Costs	2.9	3.31	0.41	-3.56	<.001
	Social and Cultural Benefits	3.5	3.14	0.35	3.72	<.001
	Social and Cultural Costs	2.92	3.14	0.21	-1.81	n.s.
	Environmental Benefits	3.01	2.87	0.14	1.18	n.s.
	Environmental Costs	3.30	2.87	0.14	1.18	n.s.
Ultimate Dependent Variable	Support for Tourism	4.06	3.36	0.7	-0.39	<.001

Notes. Scale ranged from 1 = strongly disagree through 5 = strongly agree. n.s. = not significant.

In summary, two of the three sets of the t-tests testing differences between groups of respondents (tourism employment and employers' level of benefit) did not show significant differences in their perceptions of environmental benefits and environmental costs. However, results of t-tests assessing differences between groups of respondents based on amount of economic benefit respondents received did indicate significant differences for all the endogenous variables. The results of most t-tests indicated differences between the two groups tested. However, differences in absolute figure for all three t-tests ranged from 0.63 to 0.46 in absolute values on a scale having an absolute value of 4. Thus, the difference between the two groups between residents who receive PEB and those who do not were considered small.

In the next section, because three sets of t-test indicated different results, to further examine the difference between residents who receive personal economic benefits from tourism (PEB) and those who do not, multiple regression analysis was used to determine the mediating effects of PEB.

Mediating effects of personal economic benefits (PEB).

Multiple regression analysis was used to determine the mediating effects of personal economic benefits (PEB). The purpose of this analysis was to determine if there is a difference between two groups of residents, those who perceive strongly that they receive personal economic benefits from tourism and those who do not. The mediating effect of PEB was determined by obtaining beta coefficients for the relationship between each exogenous variable and PEB and beta coefficients for the relationship between PEB and the dependent variable.

As shown in Table 26, results show that the mediating effect of PEB on the relationship between ecocentric attitudes and economic costs (Hypothesis 1) is not significant. This means that there is no difference in responses between the two groups.

The mediating effect of PEB on the relationship between community attachment and perceptions of economic costs (Hypothesis 2) was not significant. This means that there is no difference in the relationship between community attachment and perceptions of economic costs incurred from tourism based on personal economic benefits derived from tourism. Conversely, results showed that the mediating effect of PEB on the relationship between utilization of tourism resources and economic costs (Hypothesis 3) is significant. This means that there is difference in responses in the two groups.

For all the relationships between respondents' ecocentric attitudes and perceptions of endogenous variables, the mediating effects of PEB were not significant.

Table 26

Significance of Personal Economic Benefits (PEB) as Mediating Variable

Exogenous variables	Endogenous variables	Mediating effects of PEB	Significance of PEB effect	Path from independent variables to PEB		Path from PEB to dependent variables	
			p	*b*	*p*	*b*	*p*
Ecocentric Attitudes	Economic Costs	0.0200	n.s.	- 0.15	n.s.	-0.140	<.01
Community Attachment	Economic Costs	-0.0014	n.s.	-0.13	n.s.	-0.140	<.01
Utilization of Tourism Resources	Economic Costs	-0.0728	sig	-0.52	<.05	-0.140	<.01
Ecocentric Attitudes	Economic Benefits	-0.0200	n.s.	- 0.15	n.s.	0.130	<.001
	Social and Cultural Benefits	-0.0165	n.s..	- 0.15	n.s.	-0.220	<.01
	Social and Cultural Costs	0.01500	n.s.	- 0.15	n.s.	-0.100	<.05
	Environmental Benefits	-0.0045	n.s.	- 0.15	n.s.	0.030	n.s.
	Environmental Costs	0.0003	n.s.	- 0.15	n.s.	-0.003	n.s.
	Support for Tourism Development	-0.0315	n.s.	- 0.15	n.s.	0.210	<.001

Notes. PEB = Personal economic benefits from tourism development. Sig = significant; n.s. = not significant.

Difference between the residents who receive higher personal economic benefist from tourism (PEB) and those who do not through comparison of R square.

To determine the voracity of using the modified model, R squares for all the regression models for both the original model (PEB as a mediating variable) and modified model (PEB as exogenous variable) were calculated and compared. R square explains the variability of independent variables on dependent variables and allows us to have some idea about how a model performs (Field, 2005). R squares for the two models are shown in Table 27.

Analyses of the relationships between ecocentric attitudes and each of the endogenous variables indicated that R squares for the models using PEB as an exogenous variable (modified model) were higher than those of the models using PEB as a mediating variable (originally proposed model). This means that the model using PEB as an exogenous variable explains better the variability of the impact of ecocnetric attitudes on all the endogenous variables than the model using PEB as a mediating variable.

Table 27

Single Comparison of R squares for two Models: PEB as Mediating Variable and PEB as Exogenous Variable

Exogenous variable	Endogenous variables	Model with PEB as a mediating variable (originally proposed model) R^2	Model with PEB as an exogenous variable modified model) R^2
Ecocentric Attitudes	Economic Benefits	0.12	0.16
	Economic Costs	0.10	0.12
	Social and Cultural Benefits	0.12	0.18
	Social and Cultural Costs	0.40	0.17
	Environmental Benefits	0.03	0.04
	Environmental Costs	0.02	0.17
	Support for Tourism Development	0.14	0.13

Note. PEB = Personal economic benefits from tourism development.

On the other hand, the R square for the relationship between ecocentric attitudes and support for tourism development (the ultimate dependent variable) was higher, by 0.1 point, in the model using PEB as mediating variable than the model using PEB as an exogenous variable. This means that the model using PEB as a mediating variable explains slightly more variability of ecocentric attitudes' impact on support for tourism as than the model using PEB as an exogenous variable. Nevertheless, because R square was larger in the model using PEB as an exogenous variable than in the model using PEB as a mediating variable, the model using PEB as one of the exogenous variables was considered appropriate for the main analysis of the hypotheses.

From the three analyses in the first focus (multiple regression analysis testing the mediating effects of PEB, comparison of R square, t-tests for examining the difference between groups of residents based on 3 items indicating PEB), the originally proposed model using PEB as a mediating variable was discarded and replaced by the model using PEB as an exogenous variables for the study hypotheses. Figure 10 shows the selected conceptual model for testing variables that affect residents' support for tourism development in this study.

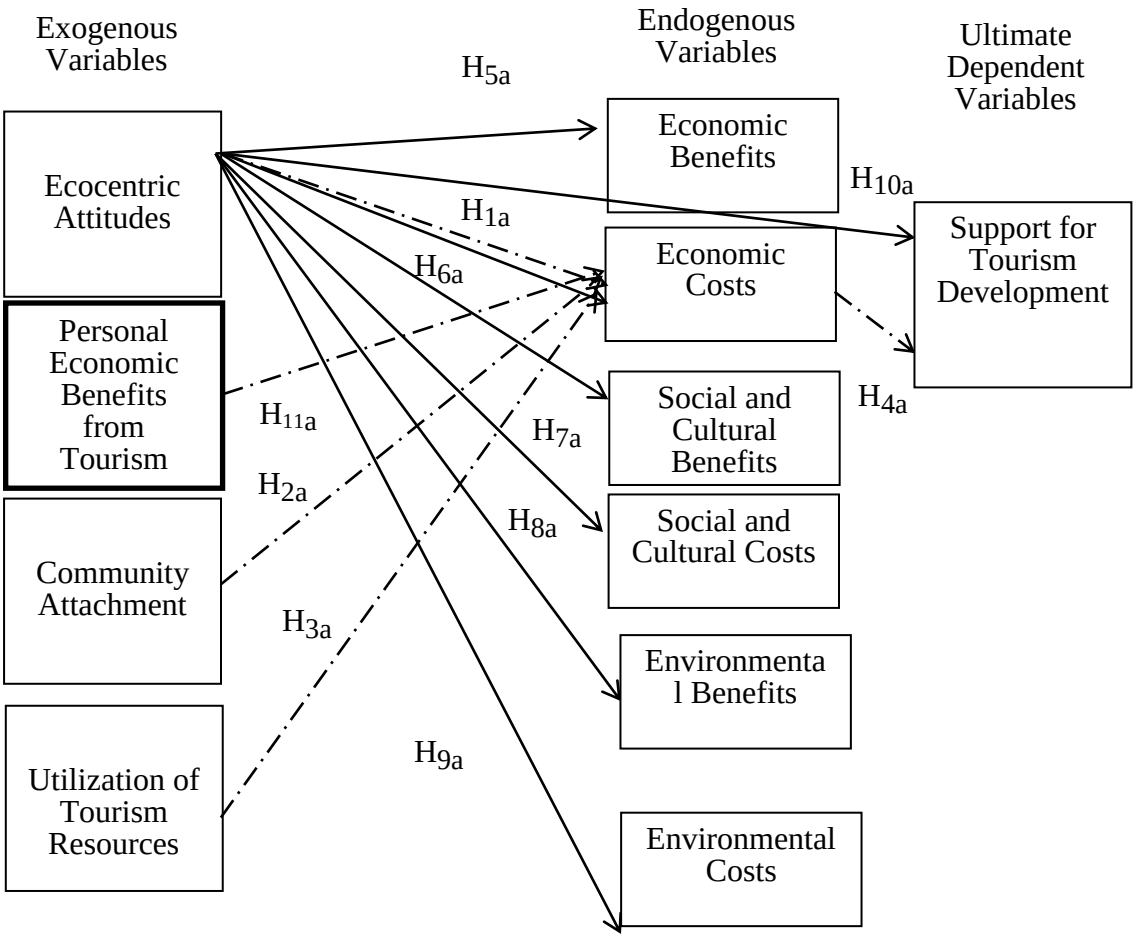

Figure 10. Revised model using personal economic benefits from tourism as an exogenous variable. Solid lines show the relationships between ecocentric attitudes and endogenous variables, and ecocentric attitudes and support for tourism development. Dotted lines show the relationships between exogenous variables and one of the endogenous variables, economic costs, and the relationship between economic costs and support for tourism development.

Table 28

Original and Modified Hypotheses

	Original hypotheses		Modified hypotheses
H_1	Using PEB as a mediating variable, a direct positive relationship exists between ecocentric attitudes of residents and perceptions of economic costs.	H_{1a}	A direct positive relationship exists between ecocentric attitudes of residents and perceptions of economic costs.
H_2	Using PEB as a mediating variable, a direct positive relationship exists between community attachment and perceptions of economic costs.	H_{2a}	A direct positive relationship exists between community attachment and perceptions of economic costs.
H_3	Using PEB as a mediating variable, a direct positive relationship exists between utilization of tourism resources and perceptions of economic costs.	H_{3a}	A direct positive relationship exists between utilization of tourism resources and perceptions of economic costs.
H_4	A direct negative relationship exists between perceptions of economic costs and support for tourism development.	H_{4a}	(Same as original) A direct negative relationship exists between perceptions of economic costs and support for tourism development.
H_5	Using PEB as a mediating variable, a direct negative relationship exists between ecocentric attitudes of residents and perceptions of economic benefits.	H_{5a}	A direct negative relationship exists between ecocentric attitudes of residents and perceptions of economic benefits.
H_6	Using PEB as a mediating variable, a direct negative relationship exists between ecocentric attitudes of residents and perceptions of social and cultural benefits.	H_{6a}	A direct negative relationship exists between ecocentric attitudes of residents and perceptions of social and cultural benefits.
H_7	Using PEB as a mediating variable, a direct positive relationship exists between ecocentric attitudes of residents and perceptions of social and cultural costs.	H_{7a}	A direct positive relationship exists between ecocentric attitudes of residents and perceptions of social and ocultural costs.
H_8	Using PEB as a mediating variable, a direct negative relationship exists between ecocentric attitudes of residents and perceptions of environmental benefits.	H_{8a}	A direct negative relationship exists between ecocentric attitudes of residents and perceptions of environmental benefits.
H_9	Using PEB as a mediating variable, a direct positive relationship exists between ecocentric attitudes of residents and perceptions of environmental costs.	H_{9a}	A direct positive relationship exists between ecocentric attitudes of residents and perceptions of environmental costs.

Notes. H = Hypothesis. Subscript "a" next to "H" indicates modified hypotheses.

Table 28 (cont'd)

Original hypotheses		Modified hypotheses	
H_{10}	Using PEB as a mediating variable, a direct negative relationship exists between ecocentric attitudes of residents and support for tourism development.	H_{10a}	A direct negative relationship exists between ecocentric attitudes of residents and support for tourism.
		H_{11}	A direct negative relatlionship exsits between personal economic benefits from tourism and support for tourism development.

Notes. H = Hypothesis. Subscript "a" next to "H" indicates modified hypotheses.

Second focus: Testing the influence of a new variable, perceptions of economic costs.

In this section, hypotheses for the second focus, determining the role of economic costs as a new variable, and its relationships with exogenous variables (ecocentric attitudes, community attachment, personal economic benefits from tourism, utilization of tourism resources) and the relationships between exogenous variables and ultimate dependent variable (support for tourism) are discussed. All the hypotheses tested in this section are modified hypotheses to correspond with the modified model using PEB as an exogenous variable.

Hypothesis 1a (regression model 1).

No studies have specifically tested the influence of ecocentric attitudes on perceptions of economic costs. However, previous studies have shown that residents who hold ecocentric beliefs and attitudes more strongly believe that there are costs resulting from tourism than those who do not hold strong ecocentric attitudes (Gursoy et al., 2002). Hypothesis 1_a is:

H_{1a}: A direct positive relationship exists between ecocentric attitudes of residents and perceptions of economic costs.

To test the above hypothesis, simultaneous multiple regression was used to test the relationships between exogenous variables (ecocentric attitudes toward tourism, personal economic benefits from tourism, community attachment, and utilization of tourism resources) and one endogenous variable (perceptions of economic costs from tourism), with a focus on ecocentric attitudes (see Table 29).

Regression model 1a was significant, $F = 5.607$, $p = < 0.05$, $R^2 = .11$. This means that all four exogenous variables together in model 1a explain 11% of the variability in perceptions of economic costs from tourism. The relationship between ecocentric attitudes and economic costs was positive and significant ($b = 0.19$, $t = 2.60$, $p = < .05$). Thus, hypothesis 1a was supported. This suggests that the more strongly residents hold ecocentric beliefs, the more strongly they perceive economic costs. Although previous studies did not specifically test the influence of ecocentric attitudes on perceptions of economic costs, they found that residents who hold stronger ecocentric beliefs and attitudes feel more strongly that tourism development has high costs overall, which include environmental, social and cultural costs (Gursoy et al., 2002; Gursoy & Rutherford, 2004). Thus, this study supports and strengthens these previous studies by indicating that ecocentric attitudes affect another specific dimension of costs, economic costs, in the same way.

Table 29

Regression Analysis for Model 1_a, 2_a,11a and 3_a Relationships, Effects of Ecocentric Attitudes on Perceptions of Economic Costs

	Model 1_a (n = 172)	*b*	*t*	*p*
Variable in Hypothesis 1_a	Ecocentric Attitudes	0.19	2.60	<.05
Variable in Hypothesis 2_a	Community Attachment	-0.43	-0.65	n.s.
Variable in Hypothesis 11_a	Personal Economic Benefits	-0.13	-3.27	<.001
Variable in Hypothesis 3_a	Utilization of Tourism Resources	-0.05	-0.64	n.s.
F = 5.607, p = < 0.001, R^2 = .11				

Note: n.s. = not significant

Hypothesis 2_a (regression model 1).

Previous studies did not test the relationship between community attachment and perceptions of economic costs. Thus, with the new variable,

H_{2a}: A direct positive relationship exists between community attachment and perceptions of economic costs.

Simultaneous multiple regression was conducted to test the relationships between all the exogenous variables (ecocentric attitudes toward tourism, personal economic benefits from tourism, community attachment, and utilization of tourism resources) and one endogenous variable (perceptions of economic costs from tourism), with a focus on community attachment (see Table 30). Regression model 2_a, which includes hypothesis 2_a, was significant (F= 5.607, p= < 0.05 R^2 =.11). This means that the exogenous variables in model 2_a explain 11% of the variability in perceptions of economic costs. The effect of community attachment was negative, but not significant, b = - 0.43, t = - 0.65, p = ns. Hypothesis 2_a was not supported. This means

that there is no relationship between residents' attachment to community and their perception of economic costs from tourism. There is no study testing the influence of community attachment specifically on perceptions of economic costs. However, the lack of relationship between residents' perceived level of community attachment and their perceptions of economic costs from tourism is somewhat supported by Jurowski et al. (1997). Their findings indicated that residents who are strongly attached to their community are likely to evaluate the economic and social benefits of tourism positively, suggesting that residents may be more concerned about benefits, but not costs.

Hypothesis 11 (regression model 1).

Jurowski et al. (1997) found that the more personal economic benefits a person receives from tourism development, the more strongly they believe that there are economic impacts from tourism (benefits/costs combined). To assess the effects of personal economic benefits from tourism development on economic costs only, this hypothesis is proposed.

H_{11}: A direct negative relationship exists between personal economic benefits and perceived economic costs.

Simultaneous multiple regression was conducted to test the effects of exogenous variables (ecocentric attitudes, personal economic benefits from tourism, community attachment, and utilization of tourism resources) on one endogenous variable (perceptions of economic costs from tourism), with a focus on personal economic benefits from tourism (see Table 30).

Regression Model 2a, which includes hypothesis 11, was significant, F = 5.607, p = < 0.05 R^2 = .11. This means that all the exogenous variables, together, in model 2 explain 11% of the variability in perceptions of economic costs. The relationship between personal economic benefits and perceptions of economic costs was negative and significant (b= -0.13, t = -3.27, p

< 0.01). Hypothesis 11 was supported. This means that the more strongly a person believes they receive their personal economic benefits from tourism development, the less strongly they perceive there to be economic costs. No previous studies have specifically examined the relationships between personal economic benefits from tourism and perceptions of economic costs. However, in terms of perceptions of overall costs from tourism development, the result supports the findings by Perdue et al. (1990) and McGehee and Andereck (2004). They found that residents who perceive more strongly that they receive personal benefits from tourism development perceive less strongly that there are negative tourism impacts from tourism development. The question for costs of tourism development used by these authors did not include question items related to economic costs. Thus, this study clarifies that residents who perceive more strongly that they receive personal economic benefits perceive not only social, cultural costs, and environmental costs, but also economic costs.

Hypothesis 3_a (regression model 1).

A previous study by Gursoy and Rutherford (2004) found that residents who use tourism resources more strongly believe that there are social costs resulting from tourism. However, they did not specifically test its relationship with economic costs. Thus, hypothesis 3a is:

H_{3a}: A direct positive relationship exists between utilization of tourism resources and perceptions of economic costs.

Simultaneous multiple regression was conducted to test the relationships between exogenous variables (ecocentric attitudes, personal economic benefits from tourism, community attachment, and utilization of tourism resources) and economic costs, with a focus on utilization of tourism resources (see Table 30). Regression Model 1_a, which includes hypothesis 3a, was

significant, F = 5.607, p = < 0.05 R^2 = .11. This means that all the exogenous variables, together, in Model 1a explain 11% of the variability in perceptions of economic costs. However, the effects of utilization of tourism resources on perceptions of economic costs was negative, but not significant, b = - 0.05, t = -0.64, p = ns. Hypothesis 3a was not supported. This suggests that there is no relationship between residents who utilize tourism resources and their perceptions of economic costs from tourism. This is consistent with the finding by Gursoy et al. (2002) that there is no significant relationship between utilization of tourism resources and their perceptions of overall costs from tourism.

Hypothesis 4_a (regression model 4).

Previous studies have found that costs from tourism development negatively relate to support for tourism development (Keogh, 1990; Ritchie, 1988). Thus, hypothesis 4_a is:

H_4a: A direct negative relationship exists between perceptions of economic costs and support for tourism development.

Simultaneous multiple regression was conducted to examine the relationships between all the endogenous variables (perceptions of economic benefits and costs, perceptions of social and cultural benefits and costs, and perceptions of environmental costs and benefits) and the ultimate dependent variable (support for tourism development), with a focus on perceptions of economic costs (Table 30). Regression Model 4a, which includes hypothesis 4a, was significant, F = 28.07, R^2 = .50, p = <0.001. This means that effects of all the endogenous variables, together, explain 50% of the variability in support for tourism development. Although the effect of perceptions of economic costs on support for tourism development was negative, it was not significant, b = - 0.41, t = - 0.49, p = ns. Hypothesis 4a was not supported by the data. This

means that there is no relationship between perceptions of economic costs and support for tourism development. This result contradicts previous findings that costs negatively relate to support (Keogh, 1990; Ritchie, 1988). However, it supports findings by Gursoy et al. (2002) that residents' perceptions of social and cultural costs are not related to residents' support for tourism. Also, it supports the findings by Gursoy and Rutherford (2004) that residents, perceptions of social and cultural costs are not related to their support for tourism.

Table 30

Regression Analysis for Model 4_a, Relationship Effects of Economic Costs on Support for Tourism

	Model 4_a (n = 172)	*b*	*t*	*p*
Hypothesis 4_a	Economic Costs	-0.41	-0.49	n.s.
Variables other than those tested in this hypothesis	Economic Benefits	0.37	4.32	<.001
	Social and Cultural Benefits	0.66	5.98	<.001
	Social and Cultural Costs	-0.13	1.42	n.s.
	Environmental Benefits	0.11	0.11	n.s
	Environmental Costs	-0.17	-2.25	<.05
F = 28.07, p = < 0.001 R^2 = .50				

Third focus: Effects of ecocentric attitudes on tourism impacts.

In this section, the third study focus, the effects of ecocentric attitudes on endogenous variables (economic benefits and costs, social and cultural benefits and costs, environmental benefits and costs) and the ultimate dependent variable (support for tourism), is discussed.

Hypothesis 5_a (regression model 5).

Previous studies have shown that residents who hold ecocentric attitudes more strongly than others perceive that there are no economic benefits (Gursoy & Rutherford, 2004;

Kaltenborn et al., 2008) and economic impacts (Jurowski et al., 1997) resulting from tourism. Thus,

H_{5a}: A direct negative relationship exists between ecocentric attitudes of residents and perceptions of economic benefits.

To test hypothesis 5_a, simultaneous multiple regression was conducted to examine the influence of exogenous variables (ecocentric attitudes toward tourism, personal economic benefits from tourism, community attachment, and utilization of tourism resources) on one endogenous variable, economic benefits from tourism (see Table 32), with a focus on ecocentric attitudes.

Regression Model 5_a was significant, $F = 8.149$, $p = < 0.001$, $R^2 = .16$. This means that all four exogenous variables together in model 5_a explain 16% of the variability in respondents' perceptions of economic benefits of tourism. The variable ecocentric attitudes toward tourism was not significantly related to economic benefits ($b = 0.08$, $t = 7.96$, $p =$ ns), although the direction of the relationship was positive. Therefore, hypothesis 5_a was not supported by the data. This means that, in this case, residents who hold stronger ecocentric attitudes do not necessarily have weaker perceptions of economic benefits resulting from tourism than those having weaker ecocentric attitudes. This result contradicts results in previous studies (Gursoy & Rutherford, 2004; Kaltenborn et al., 2008) that show that residents who hold stronger ecocentric beliefs and attitudes have weaker perceptions of economic benefits.

Table 31

Regression Analysis for Model 5a, Effects of Ecocentric Attitudes on Economic Benefits

	Model 5_a (n = 172)	*b*	*t*	*p*
Hypothesis 5_a	Ecocentric Attitudes	0.08	7.96	n.s.
Relationships with other exogenous variables other than those tested in this hypothesis	Community Attachment	-0.06	1.30	n.s.
	Personal Economic Benefits	0.13	-1.10	<.001
	Utilization of Tourism Resources	0.20	3.07	<.05
	F = 5.607, p = <0.001 R^2 =.16			

Note: n.s. = not significant.

Hypothesis 6a (regression model 6).

Previous studies by Gursoy and Rutherford (2004) and Kaltenborn et al. (2008) found that a direct negative relationship exists between residents' ecocentric attitudes and perceptions of social and cultural benefits. Thus, hypothesis 6a is:

H_{6a}: A direct negative relationship exists between ecocentric attitudes of residents and perceptions of social and cultural benefits.

To test hypothesis 6a, simultaneous multiple regression was conducted to test the relationships between exogenous variables (ecocentric attitudes, personal economic benefits from tourism, community attachment, utilization of tourism resources) and one endogenous variable, social and cultural benefits from tourism (Table 32), with a focus on ecocentric attitudes. The regression model was significant, F = 8.87, p = < 0.001 R^2 = 0.18. This means that all four exogenous variables together in model 6a explain 18% of the variability in respondents' perceptions of social and cultural benefits of tourism. The relationship between ecocentric attitudes of tourism (b = -0.05, t = 0.84, p = ns) and social and cultural benefits was negative,

but not significant. Thus, hypothesis 6_a was not supported by the data. This means that, in this study, there is no difference between residents based on the strength of their ecocentric beliefs and attitudes that there are social and cultural benefits resulting from tourism. This is inconsistent with previous studies that have found that residents with strong ecocentric attitudes have low levels of perceptions of social benefits (Gursoy & Rutherford, 2004) and social and cultural benefits (Kaltenborn et al., 2008) .

Table 32

Regression Analysis for Model 6a, Effects of Ecocentric Attitudes on Perceptions of Social and Cultural Benefits

	Model 6_a (n = 172)	*b*	*t*	*p*
Hypothesis 6_a	Eccocentric Attitudes	-0.05	-0.84	n.s.
Relationships with other exogenous variables other than those tested this hypothesis	Community Attachment	0.01	0.26	n.s.
	Personal Economic Benefits	0.11	3.39	<.001
	Utilization of Tourism Resources	0.22	3.44	<.001
F = 8.87, p = <0.001 R^2 = .18				

Note: n.s. = not significant.

Hypothesis 7_a (regression model 7).

Previous studies have shown that residents who hold stronger ecocentric attitudes and beliefs more strongly believe that there is an overall cost from tourism than those who do not hold strong ecocentric beliefs and attitudes (Gursoy et al., 2002). Thus,

H_{7a}: A direct positive relationship exists between ecocentric attitudes of residents and perceptions of social and cultural costs.

Simultaneous multiple regression (Regression Model 7), which includes a test for hypothesis 7_a, was conducted to examine the relationships between the exogenous variables (ecocentric attitudes toward tourism, personal economic benefits from tourism, community attachment, and utilization of tourism resources) and perceptions of social and cultural costs from tourism, with a focus on ecocentric attitudes (see Table 33). Regression Model 7 was significant, $F = 8.32$, $p = <0.001$, $R^2 = 0.17$. This means that all four exogenous variables together in model 7 explain 17% of the variability in perceptions of social and cultural costs. The relationship between ecocentric attitudes and perceptions of social and cultural costs from tourism was positive and significant, $b = 0.36$, $t = 5.08$, $p = <0.001$. Thus, hypothesis 7_a was supported. This means that residents who hold ecocentric attitudes agree more strongly that there are social and cultural costs resulting from tourism development than those with weaker ecocentric attitudes. The result supports the previous findings by Gursoy and Rutherford (2004) that residents who hold ecocentric attitudes more strongly believe that there are social costs resulting from tourism development. However, Kaltenborn et al. (2008) did not find any significant relationship between residents' ecocentric attitudes and perceptions of social and cultural costs.

Table 33

Regression Analysis for Model 7_a, Effects of Ecocentric Attitudes on Perceptions of Social and Cultural Costs

	Model 7_a (n = 172)	*b*	*t*	*p*
Hypothesis 7_a	Eccocentric Attitudes	0.36	5.08	<.001
Relationships with other exogenous variables other than those tested in this hypothesis	Community Attachment	0.01	0.23	n.s.
	Personal Economic Benefits	-0.08	-2.05	<.05
	Utilization of Tourism Resources	0.09	1.11	n.s.
F = 8.318, p = < 0.001 R^2 = .17				

Note: n.s. = not significant.

Hypothesis 8_a (regression model 8).

Previous studies have shown that residents who hold ecocentric beliefs and attitudes more strongly believe there are not overall benefits resulting from tourism (Gursoy et al., 2002; Jurowski et al., 1997; Kaltenborn et al., 2008). Thus,

H_{8a}: A direct negative relationship exists between ecocentric attitudes of residents and perceptions of environmental benefits.

Simultaneous multiple regression (Regression Model 8_a), which includes hypothesis 8a, was conducted to examine the relationships between exogenous variables (ecocentric attitudes, personal economic benefits, community attachment, utilization of tourism resources) and environmental benefits from tourism development (see Table 34), with the focus on ecocentric attitudes. Regression Model 8 was not significant, F=1.67, p = ns, R^2 = 0.04. This means that there is no relationship between all four exogenous variables and perceptions of environmental benefits. The relationship between ecocentric attitudes and perceived environmental benefits are negative, but not significant, b= -0.04, t = 6.2, p = ns. Therefore, hypothesis 8a was not

supported by the data. This means that there is no relationship between ecocentric attitudes and perceptions of environmental benefits resulting from tourism. This result contradicts previous findings by Kaltenborn et al. (2008) that residents who hold ecocentric beliefs and attitudes more strongly believe that there are not environmental benefits resulting from tourism than those who do not. It also contradicts Jurowski et al.'s (1997) finding that the stronger ecocentric attitudes the stronger is the belief that there are environmental impacts resulting from tourism.

Table 34

Regression Analysis for Model 8a, Effects of Ecocentric Attitudes on Perceptions of Environmental Benefits

	Model 8_a (n = 172)	*b*	*t*	*p*
Hypothesis 8_a	Eccocentric Attitudes	0.04	6.20	n.s.
Relationships with other exogenous variables other than those tested in this hypothesis	Community Attachment	0.04	0.70	n.s.
	Personal Economic Benefits	0.40	1.23	n.s.
	Utilization of Tourism Resources	0.90	1.28	n.s.
F = 1.665, p = ns R^2 = .04				

Note: n.s. = not significant.

Hypothesis 9_a (regression model 9).

Previous studies have shown that residents who hold ecocentric beliefs and attitudes believe more strongly than those with weaker ecocentric attitudes that there are overall costs resulting from tourism (Gursoy et al., 2002). Thus, hypothesis 9a is:

H_{9a}: A direct positive relationship exists between ecocentric attitudes of residents and perceptions of environmental costs.

Simultaneous multiple regression was conducted to examine the relationships between exogenous variables (ecocentric attitudes, personal economic benefits, community attachment, utilization of tourism resources) and environmental costs from tourism, with a focus on ecocentric attitudes (see Table 35). Regression Model 9a was significant, $F = 9.08$, $p = < 0.001$ $R^2 = 0.18$. This means that all four exogenous variables together in model 9 explain 18% of the variability in perceptions of environmental costs. The relationship between ecocentric attitudes and perceptions of environmental costs was positive and significant, $b = 0.52$, $t = 5.83$, $p = < 0.001$. Hypothesis 9a was supported. This means that the stronger ecocentric beliefs and attitudes of residents are, the stronger the belief that there are environmental costs resulting from tourism. This finding supports Jurowski et al.'s finding that residents who hold stronger ecocentric beliefs and attitudes more strongly believe that there are environmental costs resulting from tourism. However, Jurowski et al. tested environmental impacts as a whole, aggregating positive impacts (benefits) and negative impacts (costs). Kaltenborn et al. (2008) tested the relationship between ecocentric attitudes and perceptions of environmental benefits, but not of environmental costs. Therefore, there are no previous studies with which results can be compared directly to the results of this study.

Table 35

Regression Analysis for Model 9a, Effects of Ecocentric Attitudes on Perceptions of Environmental Costs

	Model 9_a (n = 172)	*b*	*t*	*p*
Hypothesis 9_a	Eccocentric Attitudes	0.52	5.83	<.001
Relationships with other exogenous variables other than those tested in this hypothesis	Community Attachment	-0.08	-0.96	n.s.
	Personal Economic Benefits	-0.01	-0.14	n.s.
	Utilization of Tourism Resources	-0.01	-0.14	n.s.
F = 9.08, p = < 0.001 R^2 = .18				

Note: n.s. = not significant.

Hypothesis 10a (regression model 10)

Previous studies by Jurowski et al. (1997) and Kaltenborn et al. (2008) found that the stronger the ecocentric beliefs and attitudes of residents, the stronger they support tourism development. Thus,

H_{10a}: A direct negative relationship exists between ecocentric attitudes of residents and support for tourism.

Simultaneous multiple regression was used to examine the relationships between exogenous variables (ecocentric attitudes, personal economic benefits from tourism, community attachment, and utilization of tourism resources) and the ultimate dependent variable (support for tourism development), with a focus on ecocentric attitudes (see Table 36). Regression Model 10a was significant (F = 6.013, p = <0.001 R^2 = .13). This means that, together, the exogenous variables in model 10a explain 13% of the variability in residents' support for tourism. However, the relationship between ecocentric attitudes and support for tourism was negative, but not significant, b = - 0.01, t = -1.25, p = ns. Hypothesis 10_a was not supported.

This means there is no relationship between strength of ecocentric attitudes and strength of support for tourism development. This finding contradicts previous findings by Jurowski et al. (1997) and Kaltenborn et al. (2008) that residents who hold strong beliefs and attitudes support tourism development.

Table 36

Regression Analysis of Model 10a, Effects of Ecocentric Attitudes on Support for Tourism

	Model 10_a (n=172)	b	t	p
Variable in Hypothesis 10_a	Eccocentric Attitudes	-0.11	-1.25	ns
Relationships with other exogenous variables other than those tested in this hypothesis	Community Attachment	-0.01	-0.65	ns
	Personal Economic Benefits	0.21	4.22	<.001
	Utilization of Tourism Resources	0.05	0.81	ns
F = 6.013, p = < 0.001 R^2 = .13				

Figure 11 and Table 37 summarize the regression analyses results that examined the relationships among the variables in the modified proposed conceptual model. In summary, some patterns were found in the hypotheses related to the third focus of this study, that is, the influence of ecocentric attitudes on perceptions of tourism impacts. One pattern is that there are negative relationships between residents' ecocentric attitudes and economic, social and cultural, and environmental costs from tourism development. The other pattern is that there are no relationships between residents' ecocentric attitudes and economic, social and cultural, and environmental benefits from tourism development.

Hypotheses related to the second study focus were about the relationships between exogenous variables (ecocentric attitudes, personal economic benefits from tourism, community attachment, and utilization of tourism resources) and perceptions of economic costs. Hypothesis

1_a, which hypothesized the direct positive effect of ecocentric attitudes and perceptions of economic costs, was supported. However, hypothesis 2_a, which hypothesized direct positive relationships between community attachment and perceptions of economic costs, was not supported. Similarly, hypothesis 3_a, which hypothesized a direct positive relationship between utilization of tourism resources and perceptions of economic costs, was not supported. However, hypothesis 11a, which hypothesized a direct negative relationship between personal economic benefits from tourism and perceptions of economic costs, was supported.

Hypotheses related to the third study focus were about the relationships between ecocentric attitudes and endogenous variables, and the relationship between ecocentric attitudes and support for tourism development. Hypotheses 1_a, 7_a, and $_{9a,}$ which hypothesized direct and positive relationships between one exogenous variable (ecocentric attitudes) and three endogenous variables (economic, social and cultural, and environmental costs), were supported. On the other hand, hypotheses 5_a, 6_a, and 8_a, which hypothesized direct negative relationships between ecocentric attitudes and economic, social and cultural, and environmental benefits, were not supported. Hypothesis 10_a, which hypothesized a direct negative relationship between ecocentric attitudes and the ultimate dependent variable, support for tourism, was not supported.

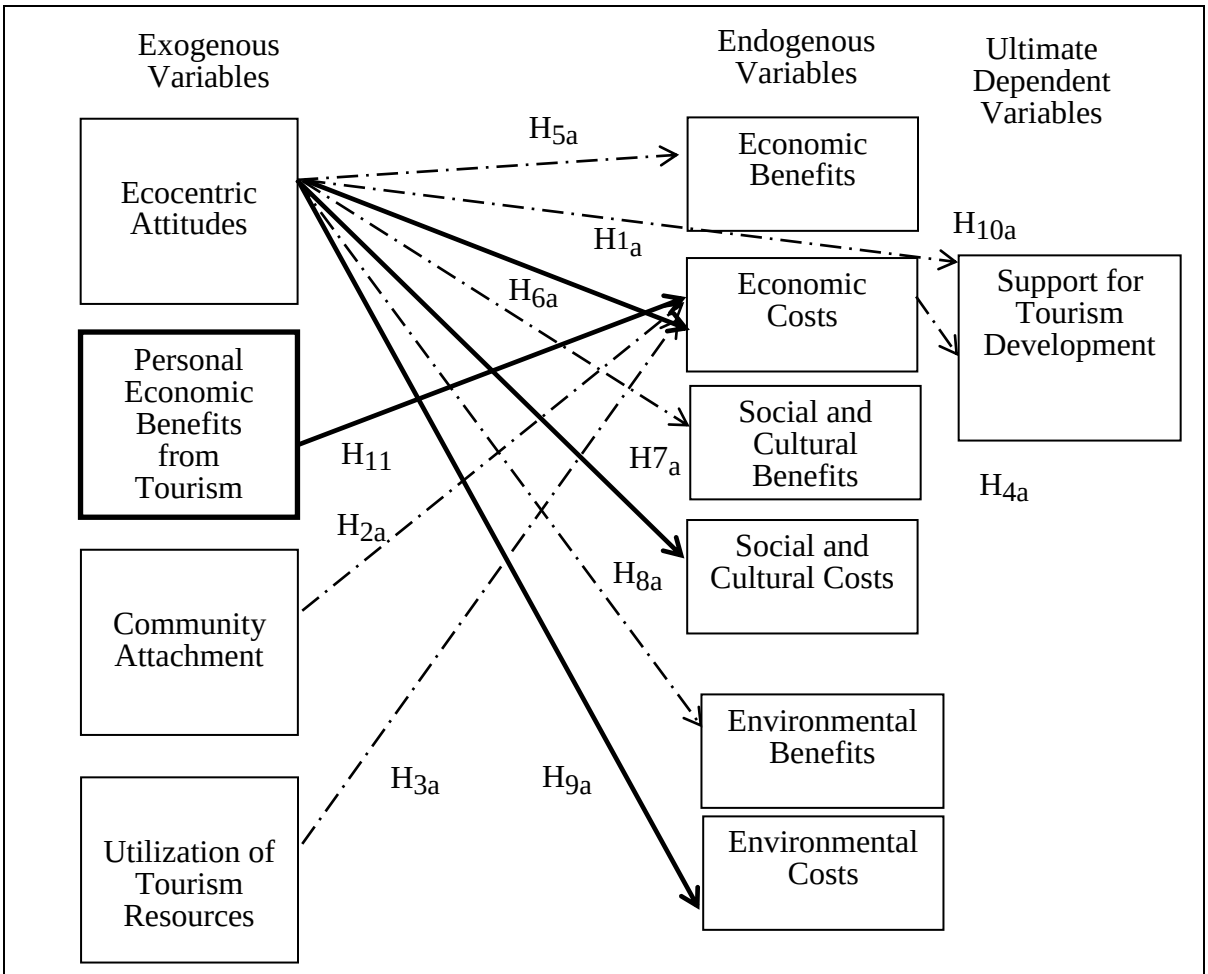

Figure 11. Results of the Hypotheses Testing
Solid lines show the supported hypotheses. Dotted lines show hypotheses that were not supported.

Table 37

Summary of Hypotheses Tests

Hypothesis No.	Tests	Contents of Hypotheses
Hypothesis 1_a (Model 1)	Supported	A direct positive relationship exists between ecocentric attitudes and perceptions of economic costs.
Hypothesis 2_a (Model 1)	Not supported	A direct positive relationship exists between community attachment and perceptions of economic costs.
Hypothesis 3_a (Model 1)	Not supported	A direct positive relationship exists between utilization of tourism resources and perceptions of economic costs.
Hypothesis 4_a (Model 4)	Not supported	A direct negative relationship exists between perceptions of economic costs and support for tourism development.
Hypothesis 5_a (Model 5)	Not supported	A direct positive relationship exists between ecocentric attitudes of residents and perceptions of economic costs.
Hypothesis 6_a (Model 6)	Not supported	A direct negative relationship exists between ecocentric attitudes of residents and perceptions of social and cultural benefits.
Hypothesis 7_a (Model 7)	Supported	A direct positive relationship exists between ecocentric attitudes of residents and perceptions of social and cultural costs.
Hypothesis 8_a (Model 8)	Not supported	A direct negative relationship exists between ecocentric attitudes of residents and perceptions of environmental benefits.
Hypothesis 9_a (Model 9)	Supported	A direct positive relationship exists between ecocentric attitudes of residents and perceptions of environmental costs.
Hypothesis 10_a (Model 10)	Not supported	A direct negative relationship between ecocentric attitude and support for tourism development.
Hypothesis 11_a (Model 1)	Supported	A direct negative relationship exists between the personal economic benefits from tourism development and perceived economic costs.

CHAPTER V

CONCLUSIONS AND DISCUSSION

The purpose of this study was to determine the factors that are associated with and/or impact residents' attitudes toward tourism development on the island destination of Iriomote, Japan by proposing and testing a new model. The study extended the models, based on social exchange theory, developed by Jurowski et al. (1997), Gursoy et al. (2002), Gursoy and Rutherford (2004), and Perdue et al. (1990). The modified model for this study included four exogenous variables (ecocentric attitudes, community attachment, utilization of tourism resources, personal economic benefits from tourism), six endogenous variables (economic benefits and costs, social and cultural benefits and costs, environmental benefits and costs), and an ultimate dependent variable (support for tourism development). The interrelationships among these variables were analyzed with focus on three relationships within the full model. The first focus was to test the mediating effects of personal economic benefits from tourism (PEB) on the interrelationships among exogenous, endogenous and ultimate dependent variables. The second was to introduce a new variable, economic costs, which was not included in previous studies. The third focus was to examine the effects of ecocentric attitudes on endogenous variables, exogenous variables, and the ultimate dependent variable.

This study used a self-administered survey for data collection. Questionnaires were developed based on the theoretical questions and items used in previous studies, which were adapted to a local context, then revised based on reviews by committee members at Michigan State University, translated and reviewed by faculty members at the University of the Ryukyus, and pilot tested by local residents. Incentives for answering and returning the questionnaires

were offered to respondents verbally and in the cover letters of the survey packets. Data were collected using a questionnaire that was hand-delivered to a random sample of residents of Iriomote Island from May 28 through June 10, 2011. The sampling of households began with one randomly selected house in the community, then every 3rd household was selected. One week later questionnaires were collected. Of 300 questionnaires distributed, 198 questionnaires were collected, yielding an initial response rate of 66%. Some questionnaires were deleted according to pre-determined rules set by the researcher. After the list-wise deletion, the final response rate was 57% (*n*=172).

The statistical analyses applied in this study were: (1) regression analysis to test the mediating effect of personal economic benefits (PEB) on the model, (2) t-tests to look at different groups of respondents to determine differences between the model using PEB as a mediating variable and the model using PEB as an exogenous variable; (3) multiple regression analysis to compare the R squares on both models; and (4) multiple regression analysis to test the hypothesized relationships in the model, using PEB as an exogenous variable.

Summary of Results and Discussion

This section reviews some important findings and then compares these findings to those of previous studies, including: (a) mediating effects of personal economic benefits from tourism (PEB); (b) effects of exogenous variables on economic costs and the influence of economic costs on support for tourism development; and (c) effects of ecocentric attitudes on endogenous variables and on support for tourism development.

Personal economic benefits from tourism as a mediating variable.

Overall, results of three different kinds of statistical tests on the original model indicated that residents' perceptions of benefits and costs from tourism did not differ between the groups

of residents who received personal economic benefits from tourism (PEB) and those who did not. Thus, the model was modified from using PEB as an exogenous variable to using PEB as a mediating variable.

Many studies have shown that people who receive personal economic benefits from tourism perceive overall benefits from tourism development positively and overall costs incurred from tourism development negatively (Keogh, 1990). However, some previous studies have shown that residents who do not receive personal economic benefits support tourism (Liu & Var, 1986). The Iriomote study concluded that there is no difference between the two groups who receive PEB and those who do not receive PEB in perceiving economic, social and cultural, and environmental benefits and costs from tourism development. Also, this study concluded that there is no difference between the two groups in supporting tourism development. The reason may be that, even though personal economic benefits from tourism development may be one of the determinants for explaining residents' attitudes toward tourism, people's attitudes toward tourism are not influenced solely by residents' personal economic benefits from tourism development. Residents' attitudes toward tourism can be influenced also by economic benefits accruing to communities as a whole from tourism development. Similarly, residents know from various sources (mass media, conversation, cultural norms, images, morals) (Pearce et al., 1996) that tourism brings various social, cultural, and environmental benefits to communities.

Iriomote residents' responses to open-ended questions regarding their perceptions of primary benefits from tourism also revealed such evidence. They recognize that benefits accrue to their communities and the island as a whole from tourism development. Residents form attitudes toward tourism based on information from a variety of sources regardless of personal economic benefits from tourism development. Thus, as was determined in this study, the model

using PEB as an exogenous variable was more appropriate than the model using PEB as a mediating variable for explaining residents' attitudes toward tourism.

Role of perceptions of economic costs within the overall model.

The second focus of this study was to examine the effects of exogenous variables on economic costs and the effects of economic costs on support for tourism development. The model proposed in this study was formulated from models in previous studies based on social exchange theory, and included a variety of perceived tourism impacts (economic benefits, social and cultural benefits, social and cultural costs, and environmental benefits and costs). Although perceptions of economic costs were noted by Jurowski et al. (1997) and the variable of economic costs was included as a latent variable within the economic impacts variable in a study by Vagas-Sanchez et al. (2009), perceptions of economic costs have not been studied specifically. A key contribution of this study was to introduce economic costs as an endogenous variable to assess potential relationships between it and exogenous variables (ecocentric attitudes, personal economic benefits from tourism, community attachment, and utilization of tourism resources) as well as its impact on the ultimate dependent variable.

The more strongly Iriomote residents hold ecocentric attitudes, the more strongly they believe that costs are incurred from tourism (economic, social and cultural, and environmental costs). This is consistent with results from previous studies that indicate the more strongly residents hold ecocentric attitudes, the more strongly they believe that tourism development has high overall costs, which include environmental, social and cultural costs (Gursoy et al., 2002).

The variable of community attachment measured residents' sentiments toward their island home. This study found that residents' level of community attachment does not affect their perception of economic costs incurred from tourism. This is at least partially contradictory to the

Jurowski et al. (1997) study, which found that residents' level of community attachment does affect their perception of economic impacts. However, because their study aggregated economic benefits and economic costs as economic impacts, it is not certain whether residents were concerned about benefits or costs, or both, resulting from tourism. Gursoy and Rutherford (2004) found that residents who were strongly attached to community believed more strongly than less attached residents that there were economic benefits resulting from tourism. The Iriomote study found no relationship between community attachment and perception of economic costs. One possible explanation may be that residents may not link tourism development and economic costs because economic costs from tourism are not as obvious as economic benefits from tourism. Another possible reason is that economic benefits such as employment and income increases often are linked to tourism by media and local government as a strategy for improving communities. Additionally, economic costs such as increases in cost of living and prices of products and services, are impacted by more factors than solely tourism. Thus, in this study, residents may not have perceived a relationship between economic costs and tourism.

In this study, residents who perceived that they receive personal economic benefits believed less strongly that there are economic costs incurred from tourism than those who do not. This result supports social exchange theory, which implies that the more residents benefit personally from tourism the more strongly they believe that there are no costs resulting from tourism. Although there has been no study specifically testing effects of personal economic benefits from tourism on the variable of perceived economic costs, results from this study are consistent with those of previous studies (McGehee & Andereck, 2004; Perdue et al., 1990) that showed that the more personal economic benefits residents gained from tourism, the more strongly they believed that there are no costs resulting from tourism.

There is no evidence that residents' use of tourism resources affects their perceptions of economic costs from tourism development. No study has been found that tests the effects of utilization of tourism resources specifically on perceptions of economic costs. However, this result is consistent with Jurowski et al.'s (1997) finding that there was no relationship between utilization of tourism resources and perceived economic impact. Some possible explanations for this can be found in the Gursoy et al.'s (2002) study, which explains that the more residents use tourism resources, the more strongly they believe there are social costs. Residents who utilize tourism resources more often notice inconveniences in their daily lives (e.g., traffic congestion, traffic accidents, change in residents' way of life, and overcrowding of public and leisure spaces). On the other hand, negative economic impacts from tourism (e.g., increases in cost of living, and profits going to companies and persons from outside Iriomote Island) are not as visible, personal, and obvious as negative social impacts. In addition, the kinds of tourism resources that residents use are natural resources, such as waterfalls and beaches that do not require admission fees. Thus, residents who utilize tourism resources may not notice economic costs.

This study indicates that there is no relationship between perceptions of economic costs and support for tourism development. No studies have been found that examined the relationship between perceptions of economic costs and support for tourism. However, this result is inconsistent with previous findings that overall costs from tourism negatively relate to support for tourism development (Keogh, 1990; Ritchie, 1988). This study's results support findings by Gursoy et al. (2002) that the strength of perceptions of costs is not related to support for tourism. This study also supports the finding by Gursoy and Rutherford (2004) that perceptions of social and cultural costs are not related to their support for tourism. A possible reason for lack of a

relationship between perceptions of economic costs and support for tourism in this study may be the decrease in tourism revenue at the time of data collection. Many tourism businesses were suffering from a decrease in the number of tourists in April, May, and June of 2011, which was immediately after the earthquake in the northeastern part of Japan.

Previous studies indicate that residents are likely to view tourism as a means of improving their economic position (Allen et al., 1993; Keogh, 1990). This suggests that residents may feel that tourism improves their economic position and, as a result, residents are not necessarily against tourism development although they perceive that economic costs are incurred from tourism development. Thus, residents may underestimate costs incurred from tourism development.

Ecocentric attitudes and their influence on perceptions of impacts.

Relationships between ecocentric attitudes and benefits.

Results for the third study focus, to assess the relationships between ecocentric attitudes and six endogenous variables and the ultimate dependent variable, indicated some clear patterns. Hypotheses about direct positive relationships between ecocentric attitudes and all three benefits resulting from tourism were not supported. However, hypotheses about the relationships between ecocentric attitudes and all three costs incurred from tourism were supported.

There was no relationship between ecocentric attitudes and perceptions of economic benefits. This result is not consistent with those of previous studies that indicated that residents who have stronger environmental beliefs and attitudes more strongly believed that tourism has no economic benefits than those having weaker ecocentric attitudes (Jurowski et al., 1997; Kaltenborn et al., 2008). One possible explanation for the different results on Iriomote Island might reflect the long history of tourism development and the geographical location of the island.

Iriomote Island became famous as a nature tourism destination due to the discovery of the Iriomote Mountain cats in 1969; much of the island was designated as a national park in 1972. Iriomote's economy largely depends on agriculture and tourism. Thus, no matter how strongly or weakly residents hold ecocentric beliefs and attitudes, the economy of the island is largely dependent on tourism, which is recognized by all residents. This may explain why there is no clear relationship between residents' perceptions economic benefits from tourism development and the strength of their ecocentric attitudes.

This study found no relationship between residents' ecocentric attitudes and their perceptions of social and cultural benefits resulting from tourism. The result from this study is inconsistent with previous studies, though direct comparison is not possible because the labels, as well as the items comprising the dependent variables, varied to some degree. The Iriomote study used "social and cultural benefits" as a dependent variable, which is the same as used by (Kaltenborn et al., 2008). However, other previous studies used "social impacts" (including both costs and benefits) (Jurowski et al., 1997) and "social benefits" (Gursoy & Rutherford, 2004). Based on these variants of a similar variable, the previous studies found that the more strongly residents held ecocentric beliefs, the more strongly they believed that there are no social impacts (Jurowski et al., 1997), social benefits resulting from tourism (Gursoy & Rutherford, 2004), and social and cultural benefits (Kaltenborn et al., 2008). The Iriomote study found no relationship. Another explanation for this discrepant result might be related to residents' positive experiences through Iriomote's long history of tourism development on Iriomote Island. Since the island become popular as a nature tourism destination in the 1970s, to accommodate individual travelers, small bed and breakfasts ("minshuku" in Japanese) that serve breakfast and dinner were established. During early stages of tourism development, social and cultural interactions

between hosts and guests were intimate, as described in Butler's evolutional lifecycle of tourism destinations (Butler 1980). Thus, residents were personally familiar with the value of cultural exchanges with tourists. Recently, the once closed mining site of the 1890s to 1930s, "Iriomote Tanko," was restored as a heritage tourism destination. Consequently, residents have seen that stories and structures representing the island's local history can be revived through tourism development. Thus, residents who hold ecocentric attitudes do not necessarily believe there are no social and cultural benefits resulting from tourism development.

In addition, this study found no relationship between ecocentric attitudes and residents' perceptions of environmental benefits from tourism. This result is not consistent with Jurowski et al.'s (1997) finding that the more strongly residents hold ecocentric attitudes, the more strongly they believe that there are environmental impacts resulting from tourism. However, Jurowski's study used only one question for the construct of environmental impacts, the quality of the natural environment. This could have been interpreted by residents as either improving or degrading the environment. Thus, the effect of residents' ecocentric attitudes solely on environmental benefits was not assessed.

A possible reason that the Iriomote study identified no relationship between ecocentric attitudes and perceptions of environmental benefits may be due to the environmentally sound conduct of tourism business owners. For example, in Iriomote, a major eco-hotel located near the hot springs openly advocates and practices ecologically sound hotel business practices (e.g, use of bio-degradable detergents, and investment in multiple treatments of waste water before discharge) and hybrid bus tours. In addition, there is an effort by the local government to promote island-wide use of hybrid cars. Thus, residents who hold strong ecocentric attitudes may

not necessarily think that there are no environmental benefits from tourism. Thus, other factors may have more influence on their perceptions of environmental benefits resulting from tourism.

Another reason may be the recent increase in environmental excursion tours and short-term environmental education schools for students of elementary school level thorough university levels. This, combined with the environmentally-sensitive actions taken by tourism businesses, may encourage residents to believe there are environmental benefits from tourism no what their ecocentric beliefs.

Relationships between ecocentric attitudes and costs.

As opposed to the results of perceptions of benefits resulting from tourism, overall costs of tourism were recognized clearly by the respondents who held strong ecocentric attitudes. In this study, the more strongly residents held ecocentric attitudes, the more strongly they believed that there are costs incurred as a result of tourism development (economic, social and cultural, and environmental costs). These results are consistent with those of previous studies that have indicated that residents having stronger ecocentric attitudes feel more strongly than those with weaker ecocentric attitudes that tourism development has high costs overall, which include environmental, social, and cultural costs (Gursoy et al., 2002).

The more strongly Iriomote residents held ecocentric attitudes, the more strongly they believed that there are economic costs incurred from tourism development. One possible reason might be related to recent controversial tourism development on Iriomote Island. Developers from outside the Island are buying many plots on the beachside “Ida no Hama” in Funauki. This small village is accessed only by boats (five times a day). Residents have expressed serious concerns about companies outside of the island developing a resort. Residents may be thinking that most of the employees will be brought in from outside the island, as has occurred with

previous resort developments. Another possible reason that residents perceive that there are economic costs incurred from tourism development is that residents cannot develop fields for rice and vegetables in the lands located in National Park areas. Yet another reason may be that there is damage to residents' chickens and chicken cages from assaults by the protected species, Iriomote Mountain Cats.

This study also found that the more strongly residents held ecocentric attitudes, the more strongly they believed that there are social and cultural costs resulting from tourism. One possible explanation for this result may be non-conformity with local social behavioral norms by entrepreneurs in tourism industries (e.g, kayak operators and ecotourism business owners). Some of them from outside of Okinawa Prefecture come and stay on Iriomote Island, to seek new lives or to make a living and generate profits. Many of them are not interested in local customs such as preparation for annual festivals and community gatherings. Another explanation may be disturbance of local festivals by tourists. Iriomote hosts various festivals. Tourists are welcome to participate in some of the festivals, but they are not welcome to participate in other festivals, particularly those of divine nature.

This result from the Iriomote study is consistent with the previous finding by Gursoy and Rutherford (2004) that the more strongly residents hold ecocentric attitudes, the more strongly they believe that there are social costs incurred from tourism development. However, Kaltenborn et al. (2008) did not find a significant relationship between residents' environmental attitudes and their perceptions of social and cultural costs.

The more strongly Iriomote residents held ecocentric attitudes, the more strongly they believed that there are environmental costs incurred from tourism development. No previous studies specifically tested the relationship between residents' ecocentric attitudes and their

perceptions of environmental costs. However, this result is consistent with Jurowski et al.'s (1997) finding that the more strongly residents hold ecocentric attitudes, the more strongly they believe that there are environmental impacts (aggregating positive and negative impacts) from tourism development. However, Jurowski et al. (1997) tested environmental impacts as a whole and used only one item that could be interpreted by the residents as either positive or negative. Kaltenborn et al. (2008) tested the effects of ecocentric attitudes on perceptions of environmental benefits, but not on perceptions of environmental costs. One reason for the positive association between ecocentric attitudes and environmental costs may be because of the impacts of recent tourism development on Iriomote Island. As the number of tourists has increased, local governments increasingly have had to be involved in cleaning up natural destinations, such as beaches and waterfalls, and providing needed facilities to accommodate tourists to protect natural resources (e.g., building trails and rest rooms, and increasing the number of trash cans), thus illustrating that environmental costs of tourism need to be mediated. Another possible reason may be that Iriomote mountain cats, with their primary habitat around local rice fields along the major roadway, often get hit by tourists, who often are driving faster than residents. These incidents have been causing great concern and often are reported in the local newspapers. Thus, perhaps residents who hold strong environmental beliefs and attitudes increasingly are feeling the threat of species and habitat destruction, as illustrated by the increasing Iriomote cat clashes with vehicles.

The last relationship tested regarding ecocentric attitudes was between these attitudes and support for tourism. This study found that there is no relationship between residents' ecocentric beliefs and support for tourism development. This is inconsistent with results from previous studies (Jurowski et al., 1997; 2008) which show a negative relationship between ecocentric

attitudes and support for tourism development. A possible explanation may be that Iriomote residents who hold strong ecocentric beliefs recognize the importance of tourism as a mainstay of the economy. Even though they recognize the various negative impacts of tourism, they also recognize positive impacts of overall tourism development. Thus, residents are not necessarily opposed to tourism development.

Results from the overall model have shown that it is informative to study perceptions of economic costs resulting from tourism development. By separating economic impacts into economic benefits and economic costs, it revealed that residents, in actuality, recognized economic costs resulting from tourism.

Open-ended questions in the Iriomote study revealed interesting findings. The study had three open–ended questions, asking about residents' opinions about the primary benefits resulting from tourism development, residents' concerns about tourism development, and types of tourism development residents desire in the future. Regarding the primary benefits of tourism in Iriomote, a considerable number of residents recognized economic benefits from tourism development, including increases in income and employment. A few people mentioned environmental benefits resulting from tourism development. Of these residents, some of them recognized that tourism development can actually encourage environmental protection, saying "*Islands' residents recognize the importance of nature conservation. (The reason the number of tourists increases is that the Island has such attractiveness)*."

For concerns about Iriomote's tourism development, a considerable number of residents revealed environmental concerns, using the phrases "*destruction of nature*" and "*increase in trash*." Some comments were combinations of concerns about both environmental and social and cultural factors. Others focused on social and cultural concerns, such as disturbance of local

festivals by tourists and changes in lifestyle because of tourists. Several mentioned that "*life is becoming too convenient*." This implies that residents think that tourism amenities simplify their lives, perhaps interfering with cultural traditions and practices. Residents also expressed some economic concerns related to tourism, such as excessive dependence on the tourism industry and non-preferred types of tourism conducted on the Island, primarily mass tourism. One respondent described Iriomote's current tourism practice as "Kakeashi Kanko" (running tourism) and expressed concern about not receiving a fair share of the income from tourism development. In addition, some respondents mentioned the need for employment of local residents, concern about large-scale development by companies located outside of the Island, and the draining of tourism income outside of Iriomote Island.

In response to the question about types of tourism development that residents desire, many residents indicated interest in sustainable tourism development, using the phrase "*tourism that coexists with nature*." One notable response was that residents wanted long-stay tourism that allows visitors to fully enjoy the island and interact with residents. Other responses were that residents desire to have some tourism restrictions (e.g., caps on the number of people who can enter certain places on the Island), and tourism fees, proceeds from which could fund environmental protection programs. The results have shown that residents have high regard for the environment and they also understand the importance of tourism development for Iriomote Islands' economy. Thus, they desire a type of sustainable tourism development in which a quality environment and tourism can coexist.

Implications of the Study

Managerial implications.

Disseminating information about current tourism development to residents is important. In contrast to the results of previous research, residents on Iriomote Island do not necessarily believe that benefits (economic, social and cultural, and environmental) accrue from tourism development. Thus, information about the various benefits from tourism development should be disseminated and emphasized more often. Examples of information that could be given to residents include percentage of local people currently employed, volume of tax revenue generated by tourism, positive cultural exchanges between tourists and residents through school summer excursion trips, and building of trekking trails into the naturally sensitive areas that would limit and control the tourists' movement. Additionally, information about new development projects by private companies should be communicated to residents by tourism associations. On Iriomote Island, the proposed development on the pristine beach in Funauki is reported only by local newspapers (Yaeyama Mainichi Shinbun, Okinawa Times, Ryukyu Shinpo). Residents have no other way to find out about the scale, detailed development schedules/phases, possible positive impacts (e.g., increase in employment on Iriomote Island), possible negative impacts (e.g., destruction of coastal habitat, reduction in public access to beaches), and local governments' opinions about the proposed development. Thus, they have no basis upon which to make their own judgments about a proposed development project and have no clear way to provide their input.

Evidence of this can be seen in responses to the survey's open-ended questions. One resident expressed concern about the Island, saying "*Residents are not discussing their agreement or disagreement about development. However, the discussion is active outside of the*

Island. Every time this heats up, residents feel left out and make them feeling like withdrawing rather than participating in the debate." From this statement it can be imagined that residents are not included in the important decisions about future tourism development of the Island at the beginning, thus feel left out as well as disrespected.

If such information were compiled and disseminated to residents by local tourism planners, the Tourism Department of the Taketomi-town municipal office and Taketomi Town Tourism Association, residents would be able to have more complete, balanced information about and understanding of a proposed development project. This might help reduce residents' unwanted surprise and stress resulting from a new development and, more importantly, might lead to conflict resolution between developers and residents who oppose a development, and to creation of strategies to reduce or mitigate negative impacts of a proposed development.

Those Iriomote residents who hold stronger ecocentric attitudes do believe, however, that there are a variety of costs (economic, social and cultural, and environmental) incurred from tourism development, so tourism planners and policy makers need to inform residents that these costs have been recognized and that tourism planners and local leaders are working to mitigate the costs, using specific examples such as monitoring mangrove forest projects through the joint effort of the Ministry of Environment and local tourism industries, and implementing beach clean-up initiatives by the ecotourism association, and also involving tourists. The dissemination of information about costs incurred from tourism and how they are addressed will become increasingly important because perception of the costs from tourism development can be expected to increase as Iriomote continues to mature as a tourism destination.

Based on the need for tourism planners and policy makers to disseminate information to residents, bringing the residents into a forum to discuss the future direction of tourism on

Iriomote is a necessary part of the process. Residents hold an important position as stakeholders in tourism development. By including them in the forum, residents would be able to view the benefits and costs resulting from tourism more realistically, and may understand the reasons for decisions made by the authorities around tourism on Iriomote Island better, so they are more likely to be agreeable to those decisions. Residents also can influence decisions by giving input into those decisions.

In addition, tourism planners and local leaders should be able to gain insights into problems related to tourism on Iriomote. As revealed in responses to open-ended questions about the kinds of tourism residents desire in the future, many residents mentioned the need for ordinances, restrictions, and fees for tourism development. Residents use the same tourism resources as tourists, encounter tourists, and observe what is going on in various destinations. Thus, residents' observations and opinions can be a great source of information and residents can provide significant input into formulation of tourism policies. Sharing knowledge about current tourism conditions and promoting collaboration with residents will lead to a sound future for tourism on Iriomote Island based on residents' participation.

The Iriomote study indicated that residents on this island destination, regardless of whether they are engaging in tourism or not, differ very much in their perceptions of tourism impacts. On the Island, there are many local leaders who own and/or operate tourism industries and who hold strong ecocentric attitudes. Also, there are many local leaders who engage in conservation and preservation of natural resources and who understand the importance of tourism in the community. Moreover, there are several organizations (Association for Improving Iriomote Island, Taketomi Town Tourism Association) that work to develop the Island's overall economy. However, all of them work independently and are not united in planning the future of

tourism on Iriomote Island. Therefore, a collaborative approach recommended by recent tourism studies, under which lies the stakeholder theory, may be useful in solving the problem. The theory stipulates identifying all the stakeholders (step 1), then engaging them in a discussion forum (step 2) (Graci & Dodds, 2011). This process can facilitate creation of a future for tourism on Iriomote Island that is well thought out, endorsed and desired by the residents.

Theoretical implications.

In the Iriomote study, the effects of ecocentric attitudes on endogenous variables and support for tourism development indicated an overall negative perception of tourism's impacts when residents' perceptions of costs and benefits were aggregated. In other words, among the residents who held strong ecocentric attitudes, residents' perceptions of economic, social and cultural, and environmental impacts were negative because they perceived all the various costs from tourism but not the variety of benefits. Social exchange theory stipulates that residents support tourism after weighing benefits and costs resulting from tourism. Based on social exchange theory, it can be concluded that residents would not support tourism when they have negative perceptions about all types of tourism impacts. Yet, Iriomote residents who held strong ecocentric attitudes were not necessarily opposed to tourism development.

This may lead us to think that residents' support for tourism development is, in part, determined by reasons other than their evaluation of the trade-offs between costs and benefits. This study's results have shown that there is a more complex meaning of tourism for residents. In other words, the results of this study show that social exchange theory by itself cannot explain residents' attitudes toward tourism. Social representation theory (Moscovici, 1994) suggests that the meaning of social phenomena can be constructed within communities. The meaning of tourism as one social representation for residents can be constructed by the residents based in

part on how tourism is depicted by mass media, the image of tourism as cast by the local and national governments, and the collective memory of tourism history on Iriomote. Thus, qualitative studies should be conducted to identify the meanings of tourism held by residents. This may help to identify determinants of residents' attitudes toward tourism more accurately and profoundly.

Limitations

Four limitations of this research have been identified. First, the findings from this study may not be relevant to communities in island destinations elsewhere in the world, which might have different characteristics such as type, level and duration of tourism, different levels of economic development, different cultural contexts, and different geophysical characteristics.

Second, due to the earthquake in the northeastern region of Japan in March 2011, tourism industries in Iriomote had tremendous negative impacts from the decrease in the number of tourists. Additionally, the month of June when the data were collected is a low season for tourism in Iriomote. For several months after the earthquake, many Japanese refrained from travelling because of the mood to self-restrain from engaging in pleasurable activities ("Jishuku mood" in Japanese) and their fear about going anywhere. Although Iriomote is far from northeast Japan, fewer tourists visited Iriomote from mainland Japan. Thus, there is a possibility that residents' responses on the questionnaires were influenced in a way such that even the residents who hold ecocentric attitudes did not perceive benefits from tourism negatively, which contradicts previous studies' results.

Third, due to the limited period of data collection, data for seasonal residents, residents who were not at home, and residents travelling away from their permanent residences were not captured. This may have influenced the results in an unknown way.

Fourth, the Iriomote study showed low R squares for most of the relationships. R squares for the relationships between exogenous variables and economic benefits and costs were 0.16 and 0.11 respectively. R squares for the relationships between exogenous variables and social and cultural benefits and costs were 0.18 and 0.17, respectively. R squares for the relationship between exogenous variables and environmental benefits and costs were 0.08 and 0.14, respectively. Higher R squares of 0.50 were obtained for the relationships between exogenous variables and support for tourism development. One reason for the low R squares may be that the exogenous variables used in the study are not fully explaining the phenomena of the endogenous variables and ultimate dependent variable. In other words, more appropriate or additional exogenous variables might have to be included in the model. One possible exogenous variable that can be included in the model is "economic role of tourism" (Latcova & Vogt 2011). The Iriomote study indicated that there are no relationships between residents who hold stronger ecocentric attitudes and economic, and social and cultural benefits, and concduded that the reason for this result is that tourism have been a mainstay of economy for the Island. Currently the model in this study included only personal benefits from tourism as one of the exogenous variables, but not the collective societal benefits that accrue to their communities and the island as a whole from tourism development. In a culture steeped in the value of collective society, such as Japanese, perhaps the community benefits and costs are more important than in western nations. In addition, residents' responses from open-ended questions about residents' opinions about benefits from tourism revealed a considerable number of responses about economic benefits for the communities as a whole, such as increasing employment, income, and tax revenues for local governments. Many fewer identified personal economic benefits as benefits from tourism. Another possible exogenous variable that can be included in the model is "the state

of the local economy" (Gursoy et al., 2001; Gursoy & Rutherford, 2004). As indicated in the beginning of the limitations section, the number of tourists to Iriomote has decreased and the current economy of the Island is not very bright. Thus, including the variable of the state of the local economy may have improved the R squares, which demonstrateds the power of an independent variable to explain a dependent variable.

Recommendations for Future Study

This study indicated no relationships between ecocentric attitudes and perceptions of economic benefits. One reason for this may be due to the long-standing importance of tourism as a mainstay of Iriomote's economy. Thus, future studies should incorporate into the model the variable 'economic role of tourism' as a potential determinant for residents' attitudes toward tourism, as indicated in other studies (Latkova & Vogt, 2011).

Numerous researchers have developed a model based on social exchange theory that explains factors influencing residents' support for tourism. These models suggest several elements of exchange that affect the way tourism is perceived and, ultimately, affect how residents react to tourism. These models were developed based on the notion that our understanding of resident reactions to tourism can be enhanced by analyzing the interplay of values residents place on the elements being exchanged and their perceptions of how tourism impacts what they value (Jurowski et al., 1997). However, some of the exogenous variables that signify constructs are different from study to study (e.g., community attachment, personal economic benefits from tourism). Some studies measured PEB from a single question item. Question items for community attachment are very different from study to study. Thus, integration and organization of endogenous variables that affect tourism impacts and support for tourism development will be needed.

Comparative studies between islands having different levels of economic dependency on tourism and tourism development levels must be conducted. Okinawa Prefecture consists of approximately 120 islands, 60 of which are inhabited. Among the 60 inhabited islands, some have vibrant and diverse economies dependent on tourism, agriculture, education, and engineering while others have economies dependent primarily on tourism.

In this study, the variable "perceptions of economic costs" was a new variable in the model. Although question items for perceptions of economic costs from previous studies were used, asking residents open-ended questions to identify kinds of economic costs incurred from tourism development, as perceived by residents, may be useful in analyzing the nature of economic costs in the local context.

Final Thoughts

Assessment of residents' perceptions of benefits and costs associated with the tourism exchange leads to local residents' attitudes toward tourism and willingness to enter into a tourism exchange. Tourism planners and community leaders can make policies and plan the future direction of tourism based on the local economy and as supported by residents by understanding the benefits and costs resulting from tourism, and the interrelationships among these.

This study has improved the model for explaining residents' attitude toward tourism in three dimensions. The study has shown that, on Iriomote Island in Japan, residents' attitudes toward tourism are similar between the residents who benefit from tourism and those who do not. This study has delineated the existence of residents' perceptions of economic costs incurred from tourism and demonstrated that residents' perceptions of impacts are more complex than assessing the relationships between economic benefits and residents' perceptions of impacts. In addition, this study demonstrated that the relationships between residents' ecocentric attitudes and the

variety of tourism impacts (economic benefits and costs, social and cultural benefits and costs, and, environmental benefits and costs) on an island location, Iriomote Island, Japan, were different than those from other locations in the world. Based on the findings from this study, more research on residents' attitudes toward tourism, focusing on personal economic benefits from tourism, residents' perceptions of economic costs, and the relationship between ecocentric attitudes and residents' perceptions toward various tourism impacts, is strongly recommended. Additionally, it is recommended that cross-cultural comparative studies be conducted, and that qualitative research is used to identify other factors that might have more influence on residents' perceptions of tourism development than those identified in western contexts.

APPENDICES

APPENDIX A

Variables and Sources for Items in Survey Instrument

Variable	Generic Item	Iriomote-specific Item	Scale	Source
Ecocentric Attitude	The balance of nature is very delicate and easily upset. Humans are severely abusing the environment. The so-called 'ecological crisis' facing humankind has been greatly exaggerated. (reverse scaled) Natural ecosystem processes are strong enough to cope with the impact of modern industrial nations. (reverse scaled) If things continue on their present course, we will soon experience a major ecological catastrophe.	NA (because this section is asking people's general notion toward environment, the generic scale will be used.)	1:Strongly disagree to 5:Strongly agree	Adopted from (Kaltenborn, et al., 2008)
Community attachment	How much do you feel "at home" in this community?	How much do you feel "at home" on Iriomote Island?	1: Not at all to 5: Very	Adapted from McCool and Martin (1994)
	How satisfied are you with your community as a place to live?	How satisfied are you with Iriomote Island as a place to live?		
	What level of interest do you have in knowing what goes on in the community?	What level of interest do you have in knowing what goes on in Iriomote Island?	1: None to 5: Quite a lot	Gursoy and Rutherford (2004)
	How sorry would you be if you move away?	How sorry would you be if you moved away from Iriomote Island? (reverse-scaled)		Goudy (2010)

(continued)

Variable	Generic Item	Iriomote -specific Item	Scale	Sorce
Personal Economic Benefits from Tourism	How much economic benefit do you personally receive from tourism in your community? (check one)	NA	1: None 2: Very little 3: Some 4: A lot 5: Quite a lot	Modified from: McGehee and Andereck (2004), Latkova (2008)
	How much of the income of the company you work for (or business you own) comes from the tourist trade?	NA	1: 0% 2: 1-25% 3: 26-50% 4: More than 50% 5: Dependent on tourism	
	Which statement below most accurately explains your economic tie to the tourism industry (Check one)		1: I am directly employed in the tourism industry 2: I am indirectly employed in the tourism industry (your work place provides at least part of its products/services to tourism businesses, but this is not the focus of the business) 3: I am not employed in the tourism industry in Iriomote Island.	Adopted from Jurowski et al. (1997)
	Are any of your family members living in your household involved in tourism industries?		1: Yes 2: No 3: I don't know Indicate your work/job :_____	

(continued)

Variable	Generic Item	Iriomote-specific Item	Scale	Source
Utilization of Tourism Resources	It is a favorite place to go during free time.	Iriomote Island's natural destinations, such as waterfalls and beaches, are favorite places to go during my free time.	1: Strongly disagree to 5: Strongly agree	Gursoy et al. (2002) Gursoy and Rutherford (2004)
	Coming here is most satisfying.	Visiting Iriomote Island's natural destinations such as waterfalls and beaches are most satisfying to me.		
	This place expresses who I am.	Iriomote Island's natural destinations express who I am.		
Support for Tourism Development	The community should try to attract more tourists.	Iriomote should try to attract more tourists.	1: Strongly disagree to 5: Strongly agree	Perdue et.al. (1990) McGehee and Andereck (2004)
	Tourism can be one of the most important economic development options for the community.	Tourism can be one of the most important economic development options for Iriomote Island.		
	Additional tourism would help this community grow in the right direction.	Additional tourism would help Iriomote grow in the right direction.		
	I support tourism having a vital role in this community.	I support tourism having a vital role in the Iriomote Island community.		

(continued)

Variable	Generic Item	Iriomote-specific Item	Scale	Source
Economic Benefits from Tourism	Tourism increases employment opportunities.	Tourism increases employment opportunities in Iriomote.	1: Strongly disagree to 5: Strongly agree	Jurowski et al. (1997) Gursoy and Rutherford (2004)
	Tourism increases investment opportunities.	Tourism increases investment opportunities in Iriomote.		
	Tourism brings more business for local people and small businesses.	Tourism brings more business for local people and small businesses in Iriomote.		
	Tourism increases revenues from tourists for local governments	Tourism increases revenues from tourists for Iriomote's government		
	Tourism increases profits to locally-owned small businesses.	Tourism increases profits to locally-owned small businesses in Iriomote.		
Economic Costs from Tourism	Tourism causes increase in house prices	Tourism causes increases in house prices in Iriomote.	1: Strongly disagree to 5: Strongly agree	Vargas-Sanchez et al. (2009)
	Tourism causes increases in the cost of living.	Tourism causes increases in the cost of living in Iriomote.		
	Tourism causes increase in the price of products and services.	Tourism causes increases in the price of products and services in Iriomote.		
	Tourism benefits only a small number of residents.	Tourism benefits only a small number of residents in Iriomote.		
	Profits generated by tourism activity end up with companies and persons from outside the locality.	Profits generated by tourism activity end up with companies and persons from outside Iriomote Island.		

(continued)

Variable	Generic Item	Iriomote-specific item	Scale	Source
Social and Cultural Benefits of Tourism	Tourism provides incentives to preserve local culture	Tourism provides incentives to locals to preserve Iriomote's local culture	1: Strongly disagree to 5: Strongly agree	Gursoy and Rutherford (2004) Jurowski et al. (1997)
	Tourism provides parks and other recreational areas for local residents.	Tourism provides parks and other recreational areas for Iriomote residents.		
	Tourism provides incentives to restore historical buildings.	Tourism provides incentives to restore historical buildings in Iriomote.		
	Tourism encourages improvement in the quality of roads and other public facilities.	Tourism encourages improvement in the quality of roads and other public facilities in Iriomote.		
	Tourism development provides cultural activities for residents.	Tourism development provides cultural activities for residents in Iriomote.		
	Tourism enhances cultural exchange between tourists and residents.	Tourism enhances cultural exchange between tourists and residents in Iriomote.		
	Tourism has positive impacts on cultural identity.	Tourism has positive impacts on cultural identity of Iriomote residents.		
Social and Cultural Costs of Tourism	Tourism increases traffic congestion.	Tourism increases traffic congestion in Iriomote.	1: Strongly disagree to 5: Strongly agree	Gursoy and Rutherford (2004) Vargas-Sanchez, et al. (2009)
	Tourism increases traffic accidents.	Tourism increases traffic accidents in Iriomote.		
	Tourism increases the crime rate.	Tourism increases the crime rate in Iriomote.		
	Tourists negatively affect local way of living.	Tourists negatively affect Iriomote residents' way of living.		
	Tourism negatively affects the local culture.	Tourism negatively affects Iriomote's culture.		
	Tourism causes unpleasant overcrowding of public and leisure space	Tourism causes unpleasant overcrowding of public and leisure spaces in Iriomote.		

(continued)

Variable	Generic item	Iriomote-specific item	Scale	Source
Environmental Benefits of Tourism	Tourism development improves the physical appearance of an area.	Tourism development improves the physical appearance of Iriomote Island.	1: Strongly disagree to 5: Strongly agree	Latkova (2009)
	Tourism provides incentives to protect and conserve natural resources.	Tourism provides incentives for local people to protect and conserve natural resources on Iriomote Island.		
	Tourism provides incentives for new park development.	Tourism provides incentives for new park development in Iriomote Island.		
	Tourism provides incentives for purchase of open space.	Tourism provides incentives for local people to purchase open space on Iriomote Island.		
Environmental Costs of Tourism	Tourism causes damage to the natural surroundings and to the countryside.	Tourism causes damage to the natural surroundings and to the countryside on Iriomote Island.	1: Strongly disagree to 5: Strongly agree	Vargas-Sanchez et al. (2009)
	Tourism causes destruction of the local ecosystem	Tourism causes destruction of Iriomote's ecosystem.		
	Tourism increases environmental contamination (rubbish, wastewater,)	Tourism increases environmental contamination (rubbish, wastewater) on Iriomote Island.		
	Tourism increases noise.	Tourism increases noise on Iriomote.		

APPENDIX B

Cover Letter for Survey Administration

Dear Iriomote Island Resident: May 16, 2011

Thank you for participating in this survey about Residents' Attitudes about Tourism on Iriomote Island. Following is information to help answer general questions about this important survey.

What is the purpose of this survey and how will results be used?
This survey seeks your opinions about tourism development and the various impacts of tourism on Iriomote Island. Knowing local residents' opinions about tourism development has been deemed important around the world and there has been a lot of discussion on Iriomote Island about some proposed tourism developments. Survey results will help tourism planners in Iriomote know what is acceptable and what is not for residents. Ultimately, this should lead to cooperative planning for future tourism development on Iriomote Island. This study is recognized and supported by the Taketomi Town Tourism Association. The summary of the final report will be submitted to them.

Will my answers be confidential?
You indicate your voluntary agreement to participate by completing and returning this survey. However, if you choose not to complete all or some of the questions, you will not suffer any penalty. Results will be reported by groups, not by individuals. Also, your responses will be confidential (your name is not associated with the survey that you complete) and your privacy will be protected to the maximum extent allowable by law.

What is the incentive drawing?
As a token of appreciation for completing the survey, if you choose, your name will be entered in a drawing for one of ten 1,000-yen meal coupons (this covers the full price of a meal for an individual or a group) at a local restaurant and ten spa tickets for hot springs on Iriomote Island (Kitchen Inaba Restaurant or Iriomote Hot Springs). Your name and contact information will be on a card separate from the survey.

Who can I contact if I have questions about the survey?
If you have any questions about this survey, please contact Kaoruko Miyakuni. If you have any questions or concerns regarding your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact, anonymously if you wish, Dr. Judy McMillan, Director of Human Research Protection Programs (HRPP) at Michigan State University in the USA.

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Email: mcmill12@ora.msu.edu

Thank you for your time in completing this survey. When you have completed all four parts, enclose the survey in the envelope provided, Return the survey to the collector at the pre-arranged time.

Sincerely
Kaoruko Miyakuni

APPENDIX C

Interview Protocol

Interview Protocol for Door-to-Door Contacts:

The researcher will approach appropriate houses (as identified based on the sampling plan) on Iriomote Island. When someone answers the door, I will begin the following narrative (if a young person comes to the door, I will ask to speak with an adult who is at least 18 years old).

> Hello! My name is Kaoruko Miyakuni. I am an assistant professor in the faculty of Tourism Sciences and Industrial Management at the University of the Ryukyus. I also am a doctoral student at Michigan State University in the U.S..
>
> I am conducting a survey to learn about Iriomote residents' opinions about tourism development here on Iriomote Island. As you may be aware, there has been a lot of discussion about proposed tourism developments on Iriomote, as is the case all over the world. Knowing local residents' opinions about tourism development has been deemed a critical part of tourism planning, so we are asking you for your opinions about tourism development on Iriomote Island. Survey results will help tourism planners here know what is acceptable and what is not for you and other residents. Hopefully, this will lead to more cooperative planning for future tourism development on Iriomote Island. Just so you know, this survey is recognized and supported by Taketomi Town Tourism Association and the summary of the final report will be submitted to them.
>
> I would like to ask one of your family members to fill out a survey. The participant must be someone in your family, including you, who is 18 years of age or older and whose birthday comes next. Who would that be? The survey takes about 20 minutes to complete.

(If the correct person in the household is different from the one who answered the door, I will ask to speak with them, then explain the survey again. I will also tell them about the incentive drawing.) Speaking to the correct person: If you complete and return the survey, you may choose to have your name entered into a drawing for a meal coupon at a local restaurant. More details are in the letter that accompanies the survey.

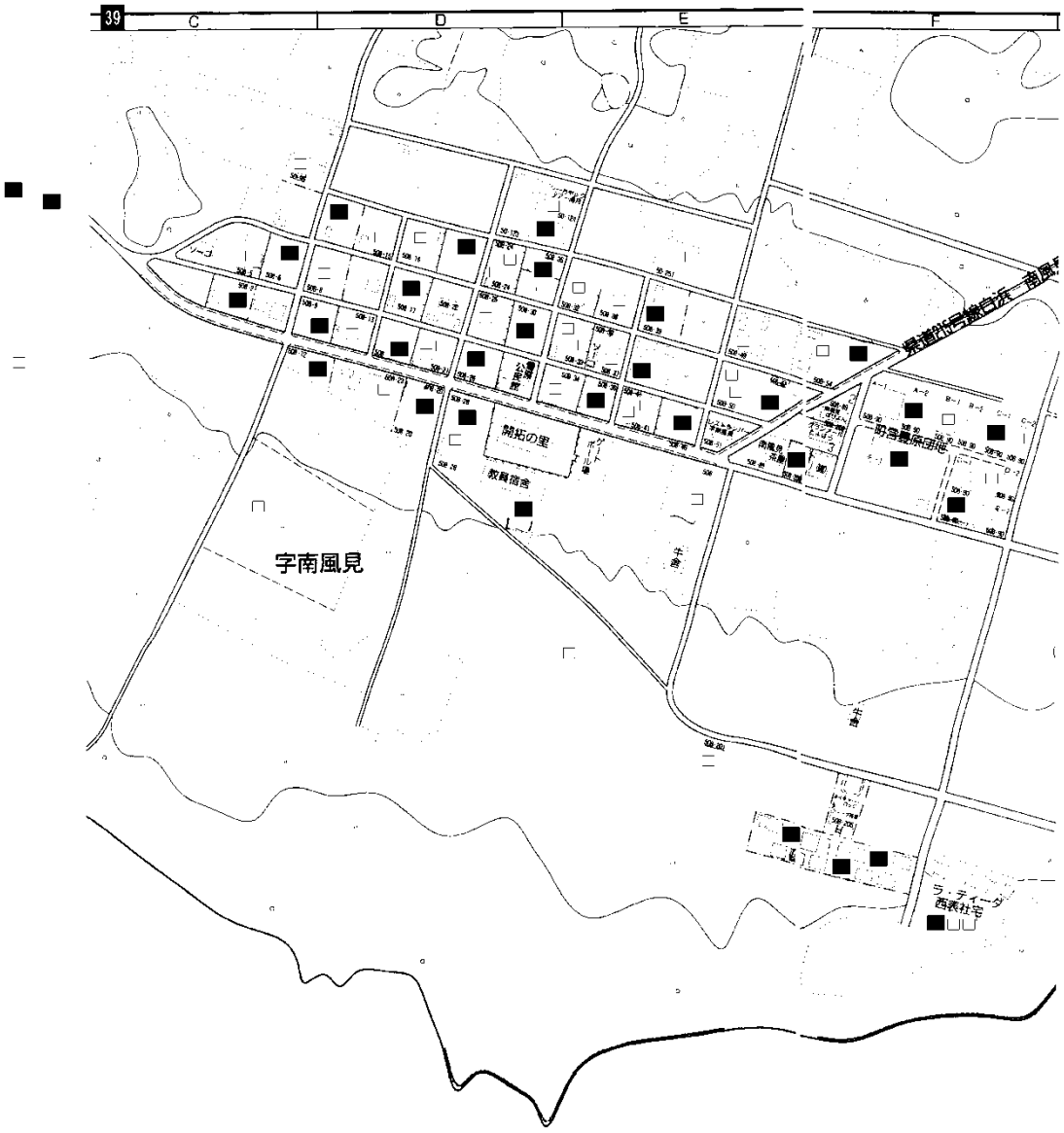
All your responses will be kept confidential and never connected with your name or address, and answers will be analyzed with those of other residents. By completing and returning the survey, you are indicating your voluntary willingness to participate.

Are you willing to participate?

After completing the survey, enclose the questionnaire in the envelope and seal it. I will pick it up in about a week. When might be a good time for me to pick up the survey? *(I will then write down the date/time on a recording sheet on which I have the house address written.)*
When the survey is picked up, I will give you the separate sheet to fill in your name and address if you want to be entered into the drawing.

APPENDIX D

Figure 12. Route for survey distribution (Map of Toyohara)



Notes. Black squares are the households that were visited to deliver the surveys for this study.

APPENDIX E

Contact and Front-End Interview form

Iriomote Island Tourism Impact Survey: Contact & Front-end Interview Form

Dates:_____to _____ Weather:_____ Sampling region:_____
(see map for community/region ID)

Survey Delivery Date	Code Number	Originally Selected (S) or Alternative (A)	Number/Dates of Delivery Attempts	Survey Pick-up Date (planned)	Number/Dates of Pick-up Attempts	Original Address & ID	Alternate address & ID	Memo

APPENDIX F

Thank You Card for Returning the Survey

Dear Iriomote Resident:

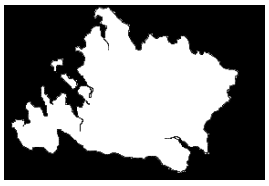
Thank you very much for your time in completing the survey. Your opinions as an Iriomote resident are extremely important. Your responses will be analyzed with those of other residents for the purpose of cooperative planning for future tourism on Iriomote Island. As promised in the cover letter for the survey, your responses will be confidential (your name is not associated with the survey that you completed) and your privacy will be protected to the maximum extent allowable by law. If your name is drawn for the incentive drawing, a coupon for a local restaurant or spa visit will be sent to you by postal mail. Only the winners in the drawing will be informed via receipt of the actual coupons.

Results will be available to the community at the Taketomi Town Tourism Association after the study is complete.

Once again, thank you for your cooperation in this important survey.

Sincerely,

Kaoruko Miyakuni



APPENDIX G

Respondent Contact Card for the Incentive Drawing

Please fill in your name and address if you wish to be entered into the drawing. Coupons will be sent to winners via mail.	
Name	
Street Address	
Town	
Zip Code	

APPENDIX H

Survey Instrument

Residents' Attitudes about Tourism on Iriomote Island

Thank you for agreeing to complete this survey about tourism development in Iriomote. You are one of a small number of residents who have been chosen to participate in this research, so your responses are very important. The survey will take about 20 minutes to complete. When you have completed all four sections, enclose the survey in the envelope provided, and return the survey to the collector at the time you planned.

Section 1-1. Your Opinions about Economic Impacts of Tourism

The first set of questions asks your opinions about the economic impacts of tourism development in Iriomote Island. Please indicate your level of agreement with each of the following statements. *(Circle one response for each statement)*

Sec. 1-1	Your beliefs about Economic Impacts of Tourism	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Q1	Tourism increases employment opportunities in Iriomote.	1	2	3	4	5
Q 2	Tourism causes increases in house prices in Iriomote.	1	2	3	4	5
Q 3	Tourism increases investment opportunities in Iriomote.	1	2	3	4	5
Q 5	Tourism brings more businesses for local people and small businesses in Iriomote.	1	2	3	4	5
Q 6	Tourism causes increases in the price of products and services in Iriomote.	1	2	3	4	5
Q 7	Tourism increases revenues from tourists for Iriomote's governments.	1	2	3	4	5
Q 8	Tourism benefits only a small number of residents in Iriomote.	1	2	3	4	5
Q 9	Tourism increases profits to locally-owned small businesses in Iriomote.	1	2	3	4	5
Q10	Profits generated by tourism activity end up with companies and persons from outside Iriomote Island.	1	2	3	4	5

Section1-2. Your Opinions about Social and Cultural Impacts of Tourism

This set of questions asks your opinions about the social and cultural impacts of tourism development in Iriomote Island. Please indicate your level of agreement with each of the following statements. *(Circle one response for each statement)*

Sec. 1-2		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Q 11	Tourism provides incentives to locals to preserve Iriomote's local culture.	1	2	3	4	5
Q12	Tourism increases traffic congestion in Iriomote.	1	2	3	4	5
Q13	Tourism provides parks and other recreational areas for Iriomote residents.	1	2	3	4	5
Q14	Tourism increases traffic accidents in Iriomote.	1	2	3	4	5
Q15	Tourism provides incentives to restore historical buildings in Iriomote.	1	2	3	4	5
Q16	Tourism increases the crime rate in Iriomote.	1	2	3	4	5
Q 17	Tourism encourages improvement in the quality of roads and other public facilities in Iriomote.	1	2	3	4	5
Q 19	Tourism development provides cultural activities for residents in Iriomote.	1	2	3	4	5
Q 20	Tourism negatively affects Iriomote's culture.	1	2	3	4	5
Q 21	Tourism enhances cultural exchange between tourists and residents in Iriomote.	1	2	3	4	5
Q22	Tourism causes unpleasant overcrowding of public and leisure spaces in Iriomote.	1	2	3	4	5
Q23	Tourism has positive impacts on the cultural identity of Iriomote residents.	1	2	3	4	5

Section 1-3. Your opinions of Environmental Impacts of Tourism

This set of questions asks your opinions about environmental impacts of tourism in Iriomtoe Island. Please indicate your level of agreement with each of the following statements. *(Circle one response for each statement)*

Sec. 1-3		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Q24	Tourism development improves the physical appearance of Iriomote Island.	1	2	3	4	5
Q25	Tourism causes damage to the natural surroundings and to the countryside on Iriomote Island.	1	2	3	4	5
Q26	Tourism provides incentives for local people to protect and conserve natural resources on Iriomote Island.	1	2	3	4	5
Q27	Tourism causes destruction of Iriomote's ecosystem.	1	2	3	4	5
Q28	Tourism provides incentives for local people new park development in Iriomote Island.	1	2	3	4	5
Q29	Tourism increases environmental contamination (rubbish, wastewater,) on Iriomote.	1	2	3	4	5
Q30	Tourism provides incentives for local people to purchase open space on Iriomote Island.	1	2	3	4	5
Q31	Tourism increases noise on Iriomote.	1	2	3	4	5

Section 2-1. Relationships with Your Community

To better understand your opinions about residents and tourism in Iriomote Island, the next set of questions focuses on your relationships with your community. *(Circle one response for each statement)*

Sec. 2-1						
Q32	How much do you feel "at home" on Iriomote Island?	Not at all 1	Slightly 2	Somewhat 3	Moderately 4	Very 5
Q33	How satisfied are you with Iriomote Island as a place to live?	Not at all 1	Slightly 2	Somewhat 3	Moderately 4	Very 5
Q34	What level of interest do you have in knowing what goes on in Iriomote Island?	None 1	A little 2	Some 3	A lot 4	Quite a lot 5
Q35	How sorry would you be if you moved away from Iriomote Island?	Not at all 1	A little 2	Some 3	A lot 4	Quite a lot 5

Section2-2. Relationships with Your Environment

This set of questions asks your relationship with your environment in general. Please indicate your level of agreement with each of the following statements. *(Circle one response for each statement)*

Sec. 2-2		**Strongly Disagree**	**Disagree**	**Neutral**	**Agree**	**Strongly Agree**
Q36	The balance of nature is very delicate and easily upset.	1	2	3	4	5
Q37	Humans are severely abusing the environment.	1	2	3	4	5
Q38	The so-called ecological crisis facing humankind has been greatly exaggerated.	1	2	3	4	5
Q39	Natural ecosystem processes are strong enough to cope with the impact of modern industrial nations.	1	2	3	4	5
Q40	If things continue on their present course, we will soon experience a major ecological catastrophe.	1	2	3	4	5

Section 3. Relationships with Tourism Resources and Economic Development

This set of questions asks your opinions about your relationship with tourism resources and tourism as a way to develop the economy in Iriomote Island. Please indicate your level of agreement with each of the following statements. *(Circle one response for each statement)*

Sec. 3	Tourism Resources	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Q41	Iriomote Island's natural destinations, such as waterfalls and beaches, are favorite places to go during my free time.	1	2	3	4	5
Q 42	Visiting Iriomote Island's natural destinations such as waterfalls and beaches is most satisfying to me.	1	2	3	4	5
Q 43	Iriomote Island's natural destinations express who I am.	1	2	3	4	5

Q44. How much economic benefit do you personally receive from tourism in your community? *(check one)*

☐ None ☐ Very little ☐ Some ☐ Quite a bit ☐ A lot

Q45. How much of the income of the company you work for (or business you own) comes from the tourist industry? (check one)

☐ 0% ☐ 1-25% ☐ 26-50% ☐ More than 50%

☐ Dependent on tourism

Q46. Which statement below most accurately explains your economic tie to the tourism industry in Iriomote Island? *(check one)*

☐ I am directly employed in the tourism industry in Iriomote Island

☐ I am indirectly employed in the tourism industry in Iriomote Island (my work place provides at least part of its products/services to tourism businesses)

☐ I am not employed in the tourism industry in Iriomote Island

Indicate your work/job type:_____

Q47.Are any of your family members involved directly in tourism industries? (check one)

☐ Yes ☐ No ☐ I do not know

Sec. 3	Tourism and Economic Development	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Q48	Iriomote should try to attract more tourists.	1	2	3	4	5
Q49	Tourism can be one of the most important economic development options for Iriomote Island.	1	2	3	4	5
Q50	Additional tourism would help Iriomote grow in the right direction.	1	2	3	4	5
Q51	I support tourism having a vital role in the Iriomote Island community.	1	2	3	4	5

Section 4. Demographic Information

Next are some final questions for classification purposes.

Q52. What is your gender?

☐ Male ☐ Female

Q53. What is your age? (Please use a number)_____years old

Q54. Where were you born?

☐ Iriomote Island ☐ Okinawa Main Island

☐ On other Okinawa Prefecture island

☐ Japanese mainland ☐ Foreign country (please specify _____)

Q55. Where do you live in Iriomote Island

☐ Eastside

☐ Westside

☐ Other (please specify _____)

Q56. How many years total have you been living on Iriomote Island? (check one)

☐ 0 to 5 years ☐ 6 to 10 years ☐ 11 to 15 years

☐ 16 to 20 years ☐ 21 to 25 years ☐ 26 to 30 years

☐ 31 or more

Q57. Which best represents the pattern of years you've lived on Iriomote Island?

☐ I was born on Iriomote Island and have lived here my entire life.

☐ I was born on Iriomote Island, left for some years, then returned.

☐ I was born elsewhere, but then moved to Iriomote Island and have lived here continuously since that time.

☐ I have moved back and forth from Iriomote Island for two or more cycles.

Q58. What is the highest level of education you have attained? (check one)

☐ Elementary school ☐ Junior high school ☐ High school

☐ Technical school degree ☐ Completed 2 years of college

☐ 4-year college degree ☐ Graduate school and beyond

Q59. What was your household's annual income in 2010 before taxes? (check one)

☐ No income ☐ Less than \2,000,000 ☐ \2000,000 - \2,999,999

☐ \3,000,000-\3,999,999 ☐ \4,000,000 - \4,999,999 ☐ \5,000,000 and more

Q60. What is your current occupation?

☐ Full-time ☐ Part-time ☐ Do not work

☐ Student – no work

Q61. If you are employed, which best describes your occupation?

☐ Government employee ☐ Private sector employee

☐ Self- employed

☐ Unemployed ☐ Teacher ☐ Student

☐ Retired ☐ Housewife

☐ Other (please specify _____)

Q62. What do you think are the primary benefits of tourism in Iriomote?

Q63. What are your biggest concerns about tourism development in Iriomote?

Q64. What type(s) of tourism do you prefer to see develped on Iriomote Island?

Thank you for your time in completing the survey.

When you have completed all four parts, enclose the survey in the envelope provided. The survey will be picked up one week from the day you receive the survey.

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APPENDIX I

Figure 13. Incentive Coupons for Survey Completion

キッチンイナバ　お食事クーポン　1,000 円

（西表島の観光に関するアンケート調査より）
召し上がったお食事の
1,000 円まで、このクーポンを
お使いになれます。

有効期限：2012 年 6 月 10 日
琉球大学観光産業科学部
産業経営学科　講師
宮国薫子

Coupon for local restaurants

Spa Ticket for Iriomote Hot Springs

APPENDIX J

Japanese Cover Letter for the Survey

2011 年 5 月 27 日

西表住民の皆さまへ

　このたびは、西表島観光に関する島民の意識調査にご協力いただきまして、ありがとうございます。この大切な調査についての一般的な質問に関しまして、以下のとおりご説明申し上げます。

この調査の目的は何ですか？　また、調査の結果はどのように使われるのでしょうか？

　この調査は観光開発や西表島観光の様々な影響についての皆さまのご意見をお伺いするものです。観光開発について住民の皆さまのご意見を知ることは、国際的にも重要と考えられており、西表島では計画中の観光開発についても活発に討論されているところです。この調査の結果は、西表島の観光計画に携わる人々に対して、住民が何を望んでおり、何を望んでいないかを知らせる一助となるものです。最終的には、この調査によって西表島の将来の観光へ向けての協調的な計画を推進する役割を担うものです。この調査は竹富町観光協会からの承認を得て、会の協力をいただいており、最終的な調査結果は協会にも提出されることになっています。

個人の解答は、開示されませんか？

　このアンケート調査に記入後　ご提出いただくことで、貴方が自発的に回答をしてくださったことになります。もっとも、全ての質問に対して回答をされない場合でも、何ら問題はございません。回答結果は、全体として報告されますので個人が特定されることはございません。　また、貴方の解答は秘密扱いとなり、皆さまの個人情報も法律の範囲内で最大限に守られます。

インセンティブ抽選とはなんですか？

　このアンケート調査を記入してくださった方に、西表島の人気レストラン（キッチンイナバ）のクーポン券(1,000 円)か西表温泉の温泉券を 20 名様にさしあげます。皆さまのお名前と連絡先はアンケート調査とは別の紙に記載されますのでご安心ください。

この調査に関する連絡先はどこですか？

　この調査についてご質問等がありましたら、宮国薫子までご連絡ください。この研究の研究協力者としての貴方の権利についてご質問やご懸念、その他調査についてご不満がありましたら、いつでも米国ミシガン州立大学人権保護プログラム長ドクター・ジュディ・マクミランにご連絡ください。匿名でご連絡いただいても結構です。どうぞ、よろしくお願いいたします。

宮国薫子
琉球大学観光産業科学部
産業経営学科　専任講師
〒 903-0213 沖縄県西原町千原 1
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APPENDIX K

Japanese Survey

西表島住民の観光に関する意向調査

観光開発に関するアンケート調査記入に同意していただきありがとうございます。西表住民の少数の中から選ばれた貴方様のご意見は大変重要です。このアンケート調査は約 20 分で書き終えることができます。全体で４つの質問事項を記入したら所定の封筒に入れ、アンケート回収係に所定の日時にお渡しください。
よろしくお願いいたします。

1-1. 観光が経済にもたらす影響についての貴方の意見

はじめの質問は、観光開発が西表島に与える経済的な影響について意見をうかがうものです。下記にあるそれぞれの意見について、どのくらい賛成できるか（正しいと思われるか）賛成できない（間違いであるか）数字に○をつけてお答えください。

Sec 1-1	経済への影響	賛成できない	あまり賛成できない	どちらでもない	少し賛成できる	賛成する
問 1	観光は、雇用機会を増やす。	1	2	3	4	5
問 2	観光は住宅の価格を上げる。	1	2	3	4	5
問 3	観光は投資の機会を増やす。	1	2	3	4	5
問 4	観光は物価をあげる。	1	2	3	4	5
問 5	観光は西表島の地域住民に仕事を与え地域の経済をうるおす。	1	2	3	4	5
問 6	観光はサービスや商品の値段を上げる。	1	2	3	4	5
問 7	観光は役場に観光収入をもたらす。	1	2	3	4	5
問 8	観光は一部の人にのみ利益を与える。	1	2	3	4	5
問 9	観光は西表島の中小企業に利益をもたらす。	1	2	3	4	5
問 10	観光事業によって得られた利益は島外の人や会社の利益にしかならない。	1	2	3	4	5

1-2. 観光が社会や文化にもたらす影響に関する貴方の意見

ここでの質問は、観光が西表島の社会や文化に与える影響について意見をおうかがいするものです。下記の意見について、どのくらい賛成できるか賛成できないか数字に〇をつけて答えて下さい。

Sec 1-2	経済への影響	賛成できない	あまり賛成できない	どちらでもない	少し賛成できる	賛成する
問 11	観光は住民に西表の地域文化を守る一助となる。	1	2	3	4	5
問 12	観光は交通渋滞をまねく。	1	2	3	4	5
問 13	観光のおかげで地元住民の公園や遊び場が増える。	1	2	3	4	5
問 14	観光があることによって交通事故が増える。	1	2	3	4	5
問 15	観光は歴史的な建物の復元や修復に寄与する。	1	2	3	4	5
問 16	観光によって犯罪が増える。	1	2	3	4	5
問 17	観光によって、西表の道路や公共の建物の質が良くなる。	1	2	3	4	5
問 18	観光は西表住民の生き方に良くない影響をもたらす。	1	2	3	4	5
問 19	観光開発は西表住民の文化的な活動をうながす。	1	2	3	4	5
問 20	観光は西表の文化に悪影響を与える。	1	2	3	4	5
問 21	観光は西表住民と観光客との交流をうながす。	1	2	3	4	5
問 22	観光によって西表の公共の場や遊びの場が混雑する。	1	2	3	4	5
問 23	観光は西表住民の固有の文化に良い影響を与える。	1	2	3	4	5

1-3. 観光が環境に与える影響に関する貴方の意見

ここでの質問は、観光が西表島の環境に与える影響について、貴方の意見をうかがうものです。下記のそれぞれの意見について、どのくらい賛成できるか賛成できないか、数字に〇をつけて下さい。

Sec 1-3		賛成できない	あまり賛成できない	どちらでもない	少し賛成できる	賛成する
問24	観光開発は西表島の景観を良くする。	1	2	3	4	5
問25	観光は、西表の自然や集落に悪い影響をもたらす。	1	2	3	4	5
問26	観光は西表島の住民に自然資源の保全・保護をしようと思わせる。	1	2	3	4	5
問27	観光は西表の生態系に破壊をもたらす。	1	2	3	4	5
問28	観光は住民に西表島でより多くの公園を造成することを促す。	1	2	3	4	5
問29	観光は西表島に、環境破壊（ごみ・汚水など）をもたらす。	1	2	3	4	5
問30	観光は西表島において住民が、空いている土地を買うことを促す。	1	2	3	4	5
問31	観光は西表島に騒音をもたらす。	1	2	3	4	5

2-1. 貴方と地域との関係

住民と西表島の観光について理解するために、次の質問は、貴方と地域に焦点をあてています。下記のそれぞれについて該当する数字に〇をつけてお答えください。

Sec 2-1						
問 32	西表島はあなたにとって、どのくらい、「ふるさと」であると感じます	1 全く感じない	2 あまり感じない	3 わからない	4 そう感じる	5 大変そう感じる。
問 33	西表島を住んでいる場所として、どれだけ満足していますか？	1 満足していない	2 あまり満足して	3 わからない	4 満足している	5 大変満足している
問 34	西表島で何が起こっているか、どのくらい関心がありますか？	1 全くない	2 あまりない	3 いくらかある	4 ある	5 大いにある
問 35	もし、西表島を離れなければならないとしたら、どのくらい悲しいです	1 全く悲しくない	2 あまり悲しくな	3 わからない	4 悲しい	5 とても悲しい

2-2. 貴方と地域の自然環境との関係

ここでの質問は、貴方と地域の自然環境についてお聞きするものです。下記のそれぞれの意見について、どのくらい賛成できるか賛成できないか、数字に〇をつけてお答えください。

Sec 2-2		**賛成できない**	**あまり賛成できない**	**どちらでもない**	**少し賛成できる**	**賛成する**
問 36	自然環境のバランスというものは、大変繊細なものなので簡単に壊される。	1	2	3	4	5
問 37	人間は環境をひどく破壊している。	1	2	3	4	5
問 38	最近、生態系の危機が叫ばれているが、それは、誇張にすぎない。	1	2	3	4	5
問 39	自然環境のバランスは現代の産業国家の中で、十分保たれるだろう。	1	2	3	4	5
問 40	現代のような生活を、人間が続ければ、大きな生態系の危機にさらされるだろ	1	2	3	4	5

3. 観光資源や経済開発との関係

ここでの質問は、貴方と観光資源や経済開発との関係についての意見を、お聞きするものです。下記のそれぞれの意見について、どのくらい賛成できるか賛成できないか、数字に○をつけてお答え下さい。

Sec 3		賛成できない	あまり賛成できない	どちらでもない	少し賛成できる	賛成する
問 41	西表島の自然観光地（滝、海浜など）は、時間のある時に出かける私にとって最高の場所である。	1	2	3	4	5
問 42	西表島の自然を（滝、海浜など）訪れるのは、何よりも満足がいくことである。	1	2	3	4	5
問 43	西表島の自然観光地は、自分自身を表している。	1	2	3	4	5

問 44. 貴方は、地域の観光からどのくらいの経済的利益を個人的に得ていますか？（一つ選んでください）

1)☐全くなし　2)☐少し　3)☐いくらか

4)☐かなり　5)☐非常に多く

問 45.貴方が働いている会社では、どのくらいの利益を観光産業から得ていますか？

1)☐0%　2)☐1－25%　3)☐26－50%

4)☐50%以上　5)☐100%

問 46. 下記の文章で貴方と西表島の観光産業との経済的結びつきを最も正確に表しているものはどれですか？（一つ選んでください）

1)☐ 私は西表島の観光産業に直接、従事している。

2)☐ 私は間接的に西表島の観光産業に従事している（私の会社の商品は観光産業に供給している。）

3)☐ 私は西表島の観光産業に従事していません。

お仕事は何ですか？_____

問 47. 家族のなかで観光産業に直接従事している人がいますか？(一つ選んでください)

1)☐はい　　2)☐いいえ　　3)☐わからない

ここでの質問は、観光と経済振興についてお聞きするものです。下記のそれぞれの意見について、どのくらい賛成できるか賛成できないか、数字に○をつけてお答え下さい。

Sec 3		賛成できない	あまり賛成できない	どちらでもない	少し賛成できる	賛成する
問 48	西表島はもっと観光客を呼び込む必要がある。	1	2	3	4	5
問 49	観光は西表島にとって最も、重要な地域おこしの一つである。	1	2	3	4	5
問 50	もっと観光が発展することで西表島が良い方向へ向かうだろう。	1	2	3	4	5
問 51	観光が、西表島で重要な役割を果たしているということに賛成す	1	2	3	4	5

4. ご自身について

ご自身についてお聞きします。適当なものに○を付けてください。

問 52. 性別

1)☐男性　　2)☐女性

問 53. 年齢　（　　歳）

問 54. どこでお生まれになりましたか？

1)☐西表島　　2)☐沖縄本島

3)☐沖縄県における西表島以外の離島

4)☐県外　　☐外国（国名：　　）

問 55. 西表島のどこに住んでいらっしゃいますか？

1)☐東側　　2)☐西側　　3)☐その他　（場所_____　）

問 56. 西表島に通算、どのくらい住んでいらっしゃいますか？

1)☐ 0~5 年　2)☐ 6~10 年　3)☐ 11~15 年

4)☐ 16~20 年　5)☐ 21~25 年　6)☐ 26 年~30 年

7)☐ 31 年以上

問 57. 下記の文章のどれが、西表島でのあなたの移住歴を表していますか？

1)☐ 私は西表島で生まれて、ずっとここで暮らしている。

2)☐ 私は西表島で生まれて、一度、何年間か島を離れ、再度もどってきた。

3)☐ 私は島外で生まれたが西表島に移住し、それからずっとここで暮らしている。

4)☐ 私は西表島で生まれて、2 度以上離れて住んだことがあるがもどってきた。

5)☐ その他_____

問 58. 最終学歴について、お答えください。

1)☐ 小学校　2)☐ 中学校　3)☐ 高等学校

4)☐ 専門学校　5)☐ 短期大学　6)☐ 大学

7)☐ 大学院以上

問 59. 税引き後の 2010 年度の年間収入はどのくらいですか？

1)☐ 収入なし　2)☐ 200 万円以下

3)☐ 2,000,000～2,999.999 円　4)☐ 3,000,000～3,999.999 円

5)☐ 4,000,000～4,999.999 円　6)☐ 5,000,000 円以上

問 60. 現在の雇用状況について、お答えください。

1)☐ フルタイムで働いている　2)☐ パート・アルバイト

3)☐ 無職（主婦・定年・退職後を含む）　4)☐ 学生　（無職）

問 61. あなたの職業は何ですか？

1)☐ 公務員　2)☐ 会社員　3)☐ 自営業

4)☐ 教員　5)☐ 学生　6)☐ 定年退職後

7)☐ 専業主婦　8)☐ その他　（具体的に書いて下さい。_____）

問 62. 西表において観光から得られる利益は何だと思いますか？

問 63. 西表の観光開発において、もっとも懸念されることは何ですか？

問 64. 西表島においてどのように観光が発展していけばよいと思いますか？

問 65　西表島においてどのような観光が、もっと発展していけばよいと思いますか？下記の中から選んでください。（複数でもかまいません。）

1)□　エコツーリズム(少人数でガイド付き)　　2)□　グループツアー

3)□　日帰りツアー　　4)□　滞在型ツアー

5)□　修学旅行　　6)□　学習ツアー(例：西表島学校)

7)□　その他

問 66　西表島で現在、実際に行われているツアーは、どのようなものだと思いますか？下記の中から選んでください。（複数でもかまいません。）

1)□　エコツーリズム(少人数でガイド付き)　　2)□　グループツアー

3)□　日帰りツアー　　4)□　滞在型ツアー

5)□　修学旅行　　6)□　学習ツアー(例：西表島学校)

7)□　その他

アンケートにお答えいただき、ありがとうございました。

４部にわたる全ての質問に答えいただいたら、アンケート調査を所定の封筒に入れてください。一週間後に回収に参ります。

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APPENDIX L

Responses from Open-ended Question 62

Question No. 62
What do you think are the primary benefits of tourism in Iriomote?

Category	Response Statement
Economic benefits	Residents' identity increases. Tourism increases income.
	Income
	Increase economic development
	Economy, income
	Economic benefit
	I do not personally get benefit from tourism because I am not working in the industry. However, employment increase due to tourism businesses and it is good that younger people can have jobs. It is a kind of island development.
	Employment of Iriomote natives, improvement of roads and facilities.
	Financial benefit, employment
	Employment
	Food and beverage shops, hotels, supermarkets, souvenir shops increase profits and economy on the island become active.
	Economic impacts
	Income for lives
	Money
	Financial benefit from visitors' expense
	Employment
	Income (money)
	Secure financial income
	Money
	Tax of Taketomi town
	Income, revitalization of the economy
	Employment of residents increase
	Employment for residents.
	Money, opportunity for employment
	Cash income
	Employment of Island residents
	Accommodation, rent-a-car, buses, taxies.
	Money/cash
	Employment
	Money, cultural exchange
	For the first time, I leant that money is brought to a region.
	Money, employment, growing economy
	Employment increase
	Economy, employment
	Industries increases and it develops the island

Question No. 62 (*continued*)

Category	Response Statement
Social benefits	Sometimes, I can meet people.
	Information outside of Iriomote because there is information divide. Because it is designated as national park, there are no rapid increase in shops
	Information from outside
Economic and Social benefits	Improvement of traffic conditions. employment increase.
	As tourists increase, there will be more places for work. As employees increase, people who
	use supermarkets and eating and drinking place will increase. Number of boats within islands will increase and roads will be maintained. People who have not paid tax will decrease and tax revenue for Taketomi town will increase. Population will increase and schools will not be closed. Culture of Iriomote will be continued.
	Human resource and culture, Maintenance of public facilities. Agricultural revenue (especially sales of pineapples, mangoes, brown sugar)
	Villagers' lives is secured and become rich (together with agriculture and the first industries). Especially, with improvement in souvenirs and specialty goods, the impacts will be spread on economy. By the comments from the city people, villagers will re-recognize villages' beautiful view which has been taken for granted. I hope that the villagers will cherish the village (but it is not a place for a show)
	Preservation of historical and cultural heritage, Protection of buildings. Creation and sale of local goods by tourists' expenditure. Employment of local residents
	Souvenirs, beverages, food
	Employment, Understanding from tourists
	Direct income (salary). By getting attention from the world, tourism should not be discontinued.
	Financial benefit (supermarket, retail stores, souvenir ships, and sales for tourism industries. Soft: Notonly public roads, but also cleaning in each village, hospitality spirit not to give inconvenience to visitors.
	Maintenance and expansion of roads and public facilities. Increase in population. Increase in tax revenue.
Economic and Environ-mental benefits	Income of tourism industries. Importance of nature.
	Income for businesses, Island residents can recognize importance of nature conservation (The reason why the number of tourists increase is that the island has such attractiveness)
	Iriomote has to be known more and its nature is protected more. As tax revenue increase, lives of islanders are improved.
Variety of benefits	Improvement of lives of island's people
	Interaction with people outside of the island, re-reorganization of Iriomote's nature and culture, Improvement in traffic system
	Compared to agriculture, tourism does not destroy environment and it revitalize economy. Improvement of traffic system.
	Development of the island
	Maintenance of public facilities, employment increase, Care for natural environment

Question No. 62 *(continued)*

Category	Response Statement
Economic benefits for people working in tourism industries	Income increase for the people working in tourism industries or assurance of support for their lives.
	For the people who deal with the industry, it is a great source of income. By the Internet, it is easy for tourists to get information on this population-decreasing island. However, there sometimes are wrong information disseminated the public, so I hope that they are not confused by those information.
	My children is working in tourism industries.
	Cash for being employed in tourism
	Money goes to B&B
	People working for tourism industries.
Environmental benefits	Nature
	For visitors to notice owe of nature. However, it will not lead to environmental protection.
	Reorganization of environmental protection toward nature
	Visitors can learn about Iriomote, abundant in nature. People who are interested in environment will increase.
	To be able to discover nature
	Visitors' relaxation for mind. to be able to reconfirm the wonderfulness of nature
	To convey the power and relaxation that nature can offer.
Social and Cultural benefits	Residents in Iriomote can reconfirm their importance of nature and culture.
	There is not enough leisure facilities (limited opportunities for long stay)
No benefits	Destruction of nature, increase trash.
	Destruction of nature
	In my opinion, there is no profit.
	No benefits
	I cannot think of any benefit.
Others	Should introduce tourism tax and island tax.
	Nothing, Benefits for some industries.
	If we have souvenirs that Iriomote only has, the island economy will improve.
	Unless they move the town office, I don't feel any benefit.

APPENDIX M

Responses from Open-ended Question 63

Question No. 63 *What are your biggest concerns about tourism development in Iriomote?*

Concerns	Response Statement
Environ-mental Concerns	Due to increase in tourists, natural environment deteriorates.
	I wonder if the current natural environment will be protected.
	People in the tourism industry are pursing private benefits. They think that small number of people can destroy the nature and destroying the nature slightly is all right. But they don' t allow such conducts to others.
	Development that does not go with the Island
	Destruction of nature
	It will be difficult to maintain nature. For example, when number of visitors who goes to mountains and rivers increase, natural environment will be easier to destroy and trash will increase.
	Destruction of nature. Red clay flowing in the sea.
	I don't want any more development on natural environment. I want tourism to coexist with nature returning run-down area to natural area.
	Protection of nature.
	Destruction of nature
	Cutting of trees and destruction of coral by marine leisure.
	Destruction of nature
	Deterioration of natural environment
	There are too many canoe, diving and snorkel businesses. Tourists to Iriomote Island have surpassed the peak and I think that number of tourists will not increase. Some places should have restriction for entrance and not to burden nature (to set a resting period)
	Destruction of nature. Destruction of ecology due to entrance of many tourists. Threat to wild animals. Trash.
	Destruction of nature, Trash problems
	Destruction of nature
	Development of mountains
	It destroys nature and builds large facilities.
	Destruction of nature
	Natural environment is deteriorated due to hotel construction, etc.
	Destruction of environment, Contamination of marine and coastal areas, damage to the habitat for mountain cats, and impacts on other creatures.
	Destruction of nature
	The balance between development and preservation
	Destruction of nature
	Waste management and destruction of nature
	Destruction of nature, Increase in traffic accidents, Destruction of landscape.
	Trash problems and environmental damage
	Destruction of nature

Question No. 63 (*continued*)

Category	Response Statement
Environ-mental Concerns	Roads, because mountain cats and box turtle may be threatened.
	Trash problems. I wish there are volunteer interpreters.
	Destruction of environment
	Destruction of nature
	Destruction of nature, Because of tourism, ships increase and ports construction has been occurring, but amount of fishery has been decreasing and that is worried.
	Destruction of nature
	Destruction of environment
	Destruction of environment
	Tourism industries fight for the same area for development, and the new area has continued to be developed.
	Destruction of nature on sightseeing points
	In cities, tourism can meet the needs(100%) of visitors, but in cities, inconvenience is taken for granted. Development has negative impacts on prehistoric island's ecology.
	Destruction of nature, change in mangrove forests, increase in trash
	Environmental problems
	Destruction of nature
	Destruction of nature. For Iriomote mountain cats to survive, rich nature is must. Once mountain cats disappeared, Iriomote will be island with no character.
	Due to tourism development, new construction of buildings and roads are exceedingly maintained and environment has been destroyed and changed. Although Iriomote is called "Galapagos of the East", there are constructions to cut trees, and I cannot agree with this conduct very much.
	Destruction of nature
	Destruction of nature (I don't want any more roads to be developed)
	Trash problem
	Destruction of nature
	I don't worry right now but I wonder it may be ill-developed in the future.
	Destruction of nature
	Destruction of nature, trash on roads.
	Destruction of nature
	Destruction of nature, useless road construction.
	Destruction of nature
	Destruction of nature, mannerism
	Coexistence between nature and artificial things. Because tourism causes trash and Co2, tourism industries should think about protecting nature.
	Trash problems, cutting of forests due to road expansion.
	Destruction of nature
	Contamination
	Destruction of nature
	Destruction of nature

Question No. 63 (*continued*)

Concerns	Response Statement
Environ-mental Concers	Destruction of natural environment, roads that are too wide, walkways that are not used.
	By many people coming in, various ecological systems are threatened.
	Destruction of Nature
	Trash problems
	Destruction of natural environment, water quality of rivers and ocean seems to have been deteriorated.
	By development, if destruction of nature progresses, tourism resources will be lost.
	Destruction of nature by building large-scale accommodation facilities
	Large-scale development by cooperation owned by owners outside of the island. Disorganized development which neglects protection of nature
	Destruction of nature
	Destruction of nature
	Too much development. It is ok for now, but I worry after 10 and 20 years from now.
	Destruction of nature. Especially in the east, due to rod construction (where there are no cars) destruction of mountains and rivers are terrible. I have come here for 25 years, but they have been always constructing something.
	Capacity, age by guide tour that surpass natural resilience.
	Destruction of nature by public works
	Destruction of environment
	Destruction of nature and environment, Loss of creatures (flora and fauna, fish, reptiles, everything)
Environ-mental and social concerns	Destruction of nature. Destruction of lifestyle and cultural environment.
	Trash, water, manner
	Occupation of land by purchase, destruction of nature, bad relationships with local residents.
	Destruction of nature and chaos in the lives of island's people.
	Residents are not discussing agreement and disagreement about development. However the discussion is active outside of the island. Every time this heats up, residents set back.
	As tourism development progresses, to protect from nature destruction. Cooperation in classifying trash, keeping manners.
	The nature of Iriomote is destroyed. Because land is cheap, people from outside the prefecture increase and the relationship between these people and residents does not go well.
	Iriomote is misrepresented by media. Trash problems. Nature.
	Destruction of nature, Iriomote-ness has been diluted. Ishigaki Island has losing its identity. Ishigaki Island has trying to be mainland, but it cannot be mainland, so they need to refine their identity.
	It should not destroy nature any more. I hope the island to be the place where residents can live peacefully.
	Conservation of natural environment and ecosystem. Deterioration in public safety

Question No. 63 (*continued*)

Concerns	Response Statement
Social concerns and desired tourism	Visitors and rent-a-cars are increasing too much and the quietness of the island is decreasing. Quality of guides improves. There is impact if many people enter into the mountains. If many group tours enter in the Island, repeat visitors will be decreased.
Social concerns	I hope that the village festivals (ceremony for gods) will not be like tours. I want the tradition will be protected and honesty and warm personalities of the villagers will not be destroyed. Don't want trash problems, Don't want tourists to wear improper clothing the village.
	If tourism continues to show its value more than it has, it will lead to deterioration of people's quality.
	Due to increase in tourism industries, manners has deteriorated.
	As tourists increase, it becomes more convenient as being in mainland Japan. As Iriomote's good atmosphere and inconvenience in good sense decrease, the island's unique characteristics decreases.
Economic concerns	Deterioration of the first and the second industries.
	Transportation fee should be reduced for everybody to come back.
	Withdrawal of tourism facilities (hotels invested from the main land), Dependence on tourism only
	It depends on what kind of tourism development. If we continue the current tours such as skimming tours (KAKEASHI KANKO) and large-scale development, we have many negative things in many areas. Unless we think about environment, culture, and education, only a few people will earn money and there will be divides.
	Local residents have to be employed with priority over others and needs to be spend money on local areas. There is shortage in labor markets due to small numbers of young people.
No Concerns	Not specifically
	I don't see any problems right now.
Environ-mental and political	Destruction of natural environment and destruction of life. Since town hall exist in Ishigaki island, the governor and public officials at the office sees tourism development distantly and the island is developed in a wrong directions.
Others	Some tourists may think that they want to move here by sightseeing this island. So for these people, we need some education. The municipality can hold some workshops in the town hall.
	There are tour guides from outside of Okinawa Prefecture and they cannot protect Iriomote Island.
	I don't know very much. Only tourism industries thrive. (not to increase number of visitors but to ncrease quality)
	Development that pursuing convenience only should be stopped. Inconvenience on the island is also a good point on the Island.
	Development after destruction of nature
	Destruction
	For a short time tours, Attractiveness of Iriomote's nature and culture cannot be explained.

APPENDIX N

Responses from Open-ended Question 64

Question No. 64 *What type(s) of tourism do you prefer to see develped on Iriomote Island?*

Concerns	Response Statement
Tourism that coexists with nature	Protecting environment, make effort in increasing visitors and repeat-visitors. It is important to have tourism industry that has consideration for natural environment. Department of Tourism that specializes in tourism on Iriomote needs to be established.
	Should protect the nature and development should be minimal.
	Development that balances with nature.
	Coexistence of nature and people. Development to a certain extent is all right but large scale development should be considered. Rich nature attracts tourists.
	Tourism that balances with nature. Tourism should not destroy nature.
	There is tourism because there exists nature. The theme of "ecology" has to be set and the new, most progressed, can be proud of in the world tourism that reduces CO_2 should be aimed. This kinds of tourism has to be conducted when the time tourists entered the island and it will be a model of coexistence between human beings and nature.
	Tours that enable tourists to take time, tourism that is sustainable with nature.
	Tourism that does not destroy ecology. People in the tourism industries should make effort not change Iriomote Island's nature. Tourism should be developed in a way that make a first priority on Iriomote Island.
	Without destroying nature, it should develop to protect current condition of Iriomote.
	I think that nature is the sell. Thus, it needs to protect nature, clean coastal areas, plant trees near observation deck and plan the island recognizing visitors.
	Without sacrificing Iriomote's nature and animals, refrain from road construction and conduct tourism that can show attractiveness of Iriomote should be developed.
	Ecotourism. The balance among activities, culture and people.
	Coexistence with nature.Tourism that is characterized on nature experience.
	Development with a balance
	Coexistence with nature.
	Not to increase the number of tourism industries, tourism that cares environment
	To the activities to protect environment
	Tourism that balances with nature
	Ecology is the residents' basics. Coexistence with nature.
	It is good if tourism can coexist with nature.
	I want them to think about how to coexist with nature.
Environ-mental concerns	Maintenance of drainage, The sea and river that I saw 30 years ago has already changed. They are dirty.
	I don't think that tourism needs to be developed. (Nature is most important.)
	Protection of natural environment should be the very first thing.
	I want visitors to see the nature as is.

Question No. 64 (*continued*)

Concerns	Response Statement
Tourism that coexists with nature and people	Tourism that protects nature, culture and landscape rather than destroying. Tourism that is sustainable with people and nature without destroying ecosystem. Long-term experience style tourism
	It is not good enough to show rare and beautiful ocean fish and corals. I want the tourism to show people's lives and to have experience with villagers. I want the tourists to learn the importance of not only convenience but also inconveniences. I hope the nature will not be destroyed.
	I want many different kinds of people to come to Iriomote. We have many tourism that can be developed such as Utara coal mine, Funauki military fortress in WWII, reef, etc. I think that human can grow by going to places, so I want many tourists to come. They can come to my house. I do not charge fee to come to my house. Welcome.
	Development of tourism leads to destruction of nature. I want tourism of enjoying people and culture, not enjoying material things
	Balance with the lives of Island's people is needed when introducing. Iriomote' s sell is the beauty of nature so that restriction of capacity should be introduced. When tourists get into accidents, Island's residents go to help voluntarily.
	Coexistence with nature, Priority on residents.
	I hope that development that coexist with Iriomote's nature and small animals.
	Eco tours
	I hope tourism to develop without many troubles to residents. Tourism should not pursue profit only.
	I don’t' want it to be developed. There is always construction going on. I do not like the quarrel between people who want to develop and who don't. It should keep the status quo or it should reduce development. I hope there will not be any more large-scale buildings (hotels) We should keep as much jungle as possible. I want Ishigaki to be developed more to be convenient for shopping. Iriomote should remain a place of hidden treasure. Otherwise Iriomote's attractiveness will be gone.
	Coexistence with nature.
	I hope that tourism would coexist with nature and children can have employment in the future.
	Recognizing island's nature is the important thing, put more tourism revenue to protection of nature.
	Coexistence and exchange between nature and culture
	Tourism that contribute to local area.
	Coexistence with agriculture
	I hope that residents can work together to create tourism where it brings many benefits to communities.
	Not to destroy nature.
	Tourists have cultural exchange with local people.
Economic	Increase in employment for island residents.
	To accept unique culture of the region. What is needed should be brought from the local area so that money circulates in Iriomote.

Question No. 64 (*continued*)

Concerns	Response Statement
Rules, restrictions and ordinances	Things such as regional ordinances that include local residents' opinions have to be created. Based on these ordinances, tourism has to be developed.
	Ordinances to protect Iriomote's nature that does exist in other islands must be made and programs that tourists enjoy the island at a slow pace should be made. Development of tourism destinations has to be limited to very minimum.
	Caring for mountain cats, creatures and animals, plants and scenic views, set entrance capacity depending on the situation.
	I don't think it should not be developed. Once observation tower and rest houses are built, such public facilities are left unmaintained. Tourism industries should pay for the cost and labor, and remodel and renovate. Nature is beautiful but artificial objects are agree. It needs rules where the people who get benefits should pay.
	Must be developed for tours as well as for learning how ecology is protected.
	Small number, stern rules, high-end
	Rather than showing facilities, tourism should be shifted to show the island as is. Damage to the mangrove forests by cruise ships and canoes has to be stopped. Graffiti that (seem to be by visitors) on rocks by the falls and trees must be stopped.
	Introduction of island entrance fee, this is to use for nature conservation and trash handling.
Extended stay	Long stay tours. Tourism that is conducted in small groups and long stay.
	Extended stay tourism
	Long stay tourism where visitors can spend time peacefully. I don't want tourists to mountains so ecotourism should be banned (rowing canoes and diving, too) Tourism where visitors relax mind and body such as viewing ocean, reading book, aromatherapy, and counseling are ok.
	Because of the increase in ship schedules, people who stay at the island has been decreasing and many visitors goes to smaller islands based on Ishigaki Island. I want visitors to stay at Iriomote island and see the island.
	I hope long stay tourism will be developed.
	Long stay tourism with high quality. Tourism that visitors wants to come back again and again.
	Long stay tours. Iriomote Island can be enjoyed by experiencing nature rather than enjoying in facilities. Creation of programs where short stay does not allow visitors to see and feel (existing canoe, diving, trekking, relaxing on the beach, watching ocean change, enjoying gifts from nature such as crafts making using flowers and plants.)
	I hope that long stay tourism to be developed. but it may be difficult.
Education	I hope that tourism does not have impact on nature and provide services that visitors can feel that they are contributing to nature conservation. Also, I want tourism to consider education of children. Through tourism, I want children to learn to act on their own responsibility.
Repeat visitors	I want the number of repeat visitors will increase.

Question No. 64 (*continued*)

Concerns	Response Statement
No more tourism	No development for tourism. The island should be kept as is.
	I think that it should not develop any more.
	I don't want tourism to be developed very much.
Individual tours	We want not only group tours but also individual tours.
	Needs to develop tourism to have visitors experience nature, small-group tours.
	Individual tours. Japan is now on a crossroad. Each individual must get out of consumption society. Iriomote Island is a model of such ideal place.
	Tour (not group tours but individual tours)
	I want tourists to enjoy with a slow and relaxed pace in individual and small group tours, not group tours. I want tourists to talk relaxingly with residents. In Funauki, for 2 to 3 years, large cruisers often come and I am worried about the impacts on coral. For Funauki in which population is 40, a large-scale cruiser that boards 200-300 visitors comes. I don't want this kind of tourism.
Others	Maintenance of the status quo.
	Since we have tourists for the golden week and the end of June and September, so tourism department should promote the island emphasizing this is the year-round destination. Not receiving many visitors at one time, the Island should receive visitors throughout the year (with exception of December to February because those months have bad weather), also want to visitors who has good manners toward nature.
	It depends on times.
	There are too many individual businesses. They do unsustainable tours and there are some claims from customers. If they continue this kind of businesses, no tourists will come to Iriomote Island. Some businesses related to ocean leisure stay at fishing ports and occupying the ports.
	Nature and culture and agriculture
	Maintenance of current condition.
	Tourism has to be developed cleanly.
	Based on local needs
	Improve quality. Rather than developing and extending, should show condition as is.
	I hope no other nuisance will be built and how about tours where visitors can see the island as is.
	Development of beaches for swimming especially in Ohara area.
	I want the tourists to enjoy the well-preserved natural environment as it has not been changed but also the inconvenience on the island.
	Employment increase in various fields
	Support from the national government
	I hope they can have a relaxed vacation experience. I hope that Iriomote become the place for visitors to think about the good old life in nature.
	Traffic system has to be improved while Iriomote's nature
	Art, music, education, health, nature.
	Establishment of local industries, Consuming local goods, Improvement of moral of tourism industries.

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