PPBRI

PAN-PACIFIC JOURNAL OF BUSINESS RESEARCH

Volume 8, No. 1 Spring, 2017

Table of Contents

1. Topics: All areas of business, economics, and information systems

2. Manuscript Guidelines/Comments:
Pan-Pacific Journal of Business Research (PPJBR) is a double blind peer reviewed Journal focusing on integrating all areas of business, economics, finance, and Information Systems.
PPJBR pursues high quality researches significantly contributing to the theories and practices of all areas of business, economics, and Information Systems. PPJBR is an academic journal listed on Cabell Directory. PPJBR consider for publication the following topics in all areas of business and economics including Accounting, Economics, Entrepreneurship, Finance, Hospitality Management, International Business, Marketing, Human Resource Management, Operation Management, Information Systems, Strategy, and Supply Chain Management:
• Current and new theories.
• New regulations and policies.
• Application of business and economic theories.
• Case studies exploring current issues
• Pedagogical issues in business education

3. Submission:
Authors are required to submit their article or manuscript electronically at jjin@csusb.edu
Before submission, the article or manuscript should not be published in any other journal. The article or manuscript should be in MS Office Word format. It should be written in a single space with a maximum number of 15 pages and 12 font size. Title, the name(s), affiliation(s), address (es), phone number(s), and email(s) of authors should be on the cover page. Contact author should be indicated. Only an abstract of the article or manuscript in 250 words, title, and 4 key words should be shown on the second page.

PPJBR generally follows the American Psychological Association (APA) guidelines. Reference should be presented in a separate sheet at the end of the article or manuscript. Tables, figures, footnotes, and their numbering should appear on the appropriate page. The usage of footnotes should be minimized. The decision of acceptance usually takes three months. After acceptance, PPBRI has a copy right for the accepted article and manuscript.

The article or manuscript should be submitted to: Dr. Taewon Yang, Editor, 5500 University Parkway JB 427, San Bernardino CA 92407. Phone: 909-537-5704. Email: taewon@csusb.edu.

A Study of Two Stakeholders' Attitudes toward Sustainable Tourism Development: A Comparison Model of Penghu Island in Taiwan

Chi-Ming Hsieh
National Chung Hsing University, ROC
Chang Huh[1]
Niagara University, USA
Sung Hee Park
Macau University of Science and Technology, Macau SAR, China

ABSTRACT

Two groups of stakeholders − residents and tourists − play critical roles in developing and promoting sustainable tourism planning and development. Little research has been done to investigate both residents' and tourists' attitudes toward sustainable tourism development simultaneously. Residents of and visitors to Taiwan's Penghu Island were sampled for the study. Two conceptual models were proposed based on the extensive literature review and then tested to identify the relationships among the five dimensions of tourism development impacts and support for sustainable tourism. The results of residents' and tourists' attitudes models indicate that positive economic and cultural dimensions have significantly influenced both groups' support for sustainable tourism development. Marketing implications of the findings are discussed.

Key words: sustainable tourism, tourism development, resident attitudes, tourist attitudes
JEL: M10

[1] Corresponding author: chuh@niagara.edu, Phone: (716) 286-8223

1. INTRODUCTION

Sustainable tourism development depends heavily on host residents' attitudes because they are key stakeholders in decision-making and provide the labor for tourism planning and development in their community. For this reason, for more than three decades, tourism studies have focused on residents' perceptions of and attitudes toward support for tourism development. These studies have examined four dimensions of residents' support for tourism planning and development: 1) economic: employment opportunities, tax revenue, and supplemental income (Akis, Peristianis, & Warner, 1996; Davis, Allen, & Consenza, 1988; Dritsakis, 2004; Huh & Vogt, 2008; Husband, 1989; Lee & Chang, 2008; Murphy, 1983; Ritchie, 1988); 2) social: education and entertainment of visitors, interaction between residents and tourists, and increase in crime (Akis et al., 1996; Byrd, Cardenas, & Greenwood, 2008; Duffield, 1982; Dyer, Gursoy, Sharma, & Carter, 2007; Kang, Lee, Yoon, & Long, 2008; Kuvan & Akan, 2005); 3) cultural: quality of life, conservation of local traditional values, and increased cultural recognition (Huttasin, 2008; Jurowski, Uysal, & Williams, 1997; Liu & Var, 1986; Mathieson & Wall, 1982; McCool & Martin, 1994; Perdue, Long, & Allen, 1987; Pizam, 1978; Prentice, 1993; Yoon, Gursoy, & Chen, 2001); and 4) environmental: air pollution, noise pollution, crowding, and resource depletion (Byrd, Cardenas, & Dregalla, 2009; Liu, Sheldon, & Var, 1987; Liu & Var, 1986). Taken together, these studies have concluded that residents' perceptions of or attitudes toward tourism planning and development are positive when they see its economic benefits but negative when they think that tourism diminishes the social, cultural, and environmental wealth of their community.

Residents' wishes and preferences should be a factor in tourism planning and development (Weaver & Lawton, 2004). Tourists, however, who visit and spend money in the host community are also stakeholders whose interests should be considered. Othman, Anwar, and Kian (2010) claimed that tourists who support sustainable tourism are sensitive to mass tourism development and seek to protect tourist destinations; the negative impact of tourism could be reduced by educating them about the culture, politics and economy of the communities they visit. Although there are numerous studies of resident attitudes, few studies have investigated the notion that tourists perceive the impacts of tourism (Leung & Farrell, 2002) or support sustainable tourism development with respect to its economic, social, cultural, or environmental dimensions (Cottrell, Duim, Ankersmid, & Kelder, 2004; Kaae, 2001). In addition, although these two key stakeholders play a significant role in tourism development, a comparative investigation of both residents' and tourists' perspectives of sustainable tourism development has generally been overlooked (Byrd et al., 2009; Kaae, 2001; Puczko & Ratz, 2000). The question arises whether residents' and tourists' support for sustainable tourism development would differ, and if so, in which of the four dimensions. Finding the area(s) where these residents and tourists might disagree is essential because without residents' and tourists'

unconditional support, tourism development cannot be successful.

Therefore, the purpose of the study was to investigate residents' and tourists' attitudes toward sustainable tourism development. More specifically, the study tested the models that examined the relationships between residents' and tourists' attitudes and their support for sustainable tourism development with respect to economic, social, cultural, and environmental dimensions. The study identified the differences between residents' and tourists' attitudes and variations in the dimensions of their support for sustainable tourism development. The findings help community tourism developers, marketers, and local government policy makers how to promote sustainable tourism development and to mitigate its negative impacts.

2. LITERATURE REVIEW

2.1. Sustainable Tourism Development

Sustainable development has been applied to many fields, including tourism and community development. A Report of the World Commission on Environment and Development ("Report of the world commission on environment and development," 1987) defined sustainable development as development that "meets the needs of the present without compromising the ability of future generations to meet their own needs" (p. 1). According to the World Summit on Sustainable Development meeting ("Johannesburg declaration on sustainable development," 2002), sustainable development has "interdependent and mutually reinforcing pillars" (p. 12) of economic development, social development and environmental protection. In tourism, sustainability goes by such names as "sustainable tourism," "ecotourism," "rural tourism" and "green tourism," with the goal of achieving long-term co-operation among stakeholder groups. Sustainable tourism development is also regarded as economically viable, financially profitable, environmentally sustainable, and socio-culturally acceptable ("Making tourism more sustainable - a guide for policy makers," 2005). Thus, most tourism, including cultural tourism or heritage tourism, applies these sustainability principles (Chang & Liu, 2009; Erkuş-Öztürk & Eraydın, 2009; Harrill & Potts, 2003; Li, Wu, & Cai, 2008; Mitchell, 2001; Pederson, 2002; Stoddard, Evans, & Dave, 2008).

In this study, sustainable tourism development means that tourism that can improve the economic quality of life and sustain people's culture and value without interfering with tourists and the development of tourism.

2.2. Social Exchange Theory

Social exchange theory is widely adopted in tourism studies as a theoretical framework for comprehending stakeholders' perceptions of tourism and their attitudes toward tourism development (Andereck, Valentine, Knopf, & Vogt, 2005; Ap, 1992; Gursoy & Rutherford, 2004; Huh & Vogt, 2008; Jurowski et al., 1997; Teye, Sirakaya, & Sönmez, 2002; Ward & Berno, 2011). It suggests that stakeholders will engage in exchange if they perceive that some

rewards are valued and that the costs do not exceed these rewards (Jurowski & Gursoy, 2004). As Ap (1992) has described, social exchange theory is "a general sociological theory concerned with understanding the exchange of resources between individuals and groups in an interaction situation" (p. 668). In an interaction, people who perceive more benefits than costs are likely to evaluate an exchange positively, but people who perceive more costs than benefits are likely to evaluate an exchange negatively (McGehee & Andereck, 2004).

From tourism perspectives, studies have shown that residents will support tourism development if they perceive tourism as bringing more benefits than costs (Jurowski & Gursoy, 2004; Jurowski et al., 1997; Kayat, 2002). With the framework of social exchange theory, several studies of residents' attitudes toward tourism development have examined the relationships between residents' perceptions of tourism impacts, benefits, costs, and support of tourism (Jurowski et al., 1997; Nunkoo & Ramkissoon, 2012; Nunkoo & So, 2015). Benefits are described as positive impacts and costs as negative impacts. Perceptions of tourism impacts can be differential; someone who may perceive more positive outcomes of tourism development would select to support the tourism than someone who perceives tourism development negatively (Andereck et al., 2005). Overall, factors influencing individual attitudes toward tourism are generally categorized as economic, social, cultural and environmental (Nunkoo, Gursoy, & Juwaheer, 2010; Perdue, Long, & Allen, 1990).

In order to understand the attitudes of primary stakeholders (residents and tourists) towards Penghu's tourism development, this study used social exchange theory as the theoretical framework, meaning that two key groups of stakeholders would respond to four tourism impacts in terms of benefits and costs.

2.3. Link between Economic Impact and Support for Sustainable Tourism

A source of the common benefits and costs of tourism development is defined as economic impacts (Yoon et al., 2001). Most residents pf tourism destinations perceive tourism as a vehicle for economic development (Huh & Vogt, 2008; Walpole & Goodwin, 2000) because they directly or indirectly obtained or expected economic benefits (Andereck et al., 2005; Ko & Stewart, 2002) such as jobs, tax revenues, personal income, property investments, and local businesses (Walpole & Goodwin, 2000). Other studies have reported positive economic impacts such as improved economic quality of life (McCool & Martin, 1994; Perdue et al., 1990), more government services (Gursoy & Rutherford, 2004), and a higher standard of living (Gilbert & Clark, 1997; Johnson, Snepenger, & Akis, 1994). A study of Huh and Vogt (2008) asserted that residents' attitudes toward the economic impacts of tourism development have changed due to the changes of their tourism involvement status. Some studies noted an economic cost or negative economic impact (Ap & Crompton, 1998) such as an increase in the cost of living, or higher prices of goods and services (Brunt & Courtney, 1999). However, residents' positive attitudes toward economic benefits outweighed their perception of

community disruption (Lindberg & Johnson, 1997).

A majority of studies of the relationship between perceived positive economic impacts and attitudes toward tourism development reported a positive relationship (Allen, Long, Perdue, & Kieselbach, 1988; Andereck & Vogt, 2000; Ekanayake & Long, 2012; Huh & Vogt, 2008; Jurowski et al., 1997; Perdue et al., 1990). They found that the perceived positive economic impact has the strongest influence on residents' support for continued tourism development (Dyer et al., 2007). As for the perceptions of economic impacts in different groups, a comprehensive study by Byrd et al. (2009) on perceived economic impacts showed some differences between tourists and residents, although both groups perceive tourism development as having a positive economic impact. The results showed that tourists tend to agree that "increased tourism improves the local economy" more than residents do. Conversely, residents are more likely to agree that "tourism development increases property taxes" than tourists do in terms of perceiving a negative economic impact. Overall, the economic factor appears to have a positive influence on residents' and tourists' attitudes toward tourism development.

Based on the previous studies, therefore, the following hypothesis was proposed for the two groups in terms of the link between economic impact and support for sustainable tourism:

Hypothesis 1_a (Resident) and 1_b (Tourist): Economic factors have a positive impact on sustainable tourism development.

2.4. Link between Social Impact and Support for Sustainable Tourism

Social impact is an impact influenced by tourism development on residents' habits, daily routines, social lives, beliefs, and values (Andereck et al., 2005), changes in social and family structure (Dyer et al., 2007), erosion of gender segregation by offering employment opportunities for females (Crompton & Sanderson, 1990), more shopping and recreation opportunities (Brunt & Courtney, 1999; Gursoy & Rutherford, 2004; Jurowski & Gursoy, 2004), improving the conditions of roads and other public facilities (Pizam, 1978). The social impact of tourism development has been studied extensively. Some findings reported that residents tend to have a negative perception of the social impact of tourism development (Johnson et al., 1994; Jurowski et al., 1997; Perdue et al., 1990; Yoon et al., 2001). Others found that the local residents view tourism as offering social benefits to the community (Besculides, Lee, & McCormick, 2002; Gursoy & Rutherford, 2004; Sirakaya, Teye, & Sönmez, 2002).

Although economic impacts are often assumed to improve residents' quality of life, social impact may not always be as positive (Liu et al., 1987). The studies showed that social impacts have produced contradictory results, including the positive association between social impact and support for tourism development (Jurowski et al., 1997; McCool & Martin, 1994; Prentice, 1993; Yoon et al., 2001), and negative relationship between social impact and support for tourism development (Gursoy & Rutherford, 2004; Milman & Pizam, 1988; Sirakaya et al.,

2002). A comparative study (Byrd et al., 2009) on the positive and negative social economic impacts between residents and tourists revealed a difference in the perceptions of tourism's positive impacts. For example, tourists are more likely than residents to agree that tourism "increas[es] quality of life," "improves a community's appearance," and "increases the number of recreational opportunities for local residents." At the same time, residents are more likely than tourists to agree that "tourism development increases crime." Overall, the results of previous studies have shown mixed outcomes of social impact on tourism development.

Based on the literature review, therefore, the following hypothesis was proposed for two groups for testing any significant difference between a positive or negative social impact and support for sustainable tourism:

Hypothesis 2_a (Resident) and 2_b (Tourist): Social factor has a positive impact on sustainable tourism development.

Hypothesis 3_a (Resident) and 3_b (Tourist): Social factor has a negative impact on sustainable tourism development.

2.5. Link between Cultural Impact and Support for Sustainable Tourism

Tourism can have a positive or negative impact on host community culture with tourists and tourism development. From a positive perspective, tourism generates a demand for local arts, establishes local pride and cohesion, cultural identity and exchange of ideas, and promotes knowledge about culture of the host communities (Gursoy & Rutherford, 2004). It also creates opportunities for revitalization of local tradition, improves the image of community and cultural exchange, and preserves archaeological sites or historic monuments (Besculides et al., 2002; Yoon et al., 2001). Tourism also has negative cultural impacts such as changes in traditional values, the commercialization of culture, and the loss of authenticity (Gursoy & Rutherford, 2004).

There is no consensus in the relationship between cultural impact and support for tourism. However, Penghu Island has positioned itself as a cultural heritage attraction ("Penghu national scenic area administration," 2017b). Researchers believe that both residents and tourists are more likely to adopt a positive attitude toward sustainable tourism development. The following hypothesis, therefore, was proposed to test any significant difference between a positive cultural impact and support for sustainable tourism development:

Hypothesis 4_a (Resident) and 4_b (Tourist): Cultural factor has a positive impact on sustainable tourism development.

2.6. Link between Environmental Impact and Support for Sustainable Tourism

Tourism is often considered a green industry, but it is not always true on the island (Nunkoo et al., 2010). Tourism development could endanger the island's fragile environment. The perceived negative environmental impact of tourism include air and water pollution, increased traffic congestion and accidents, difficulty finding parking, crowding and the destruction of natural resources (Chang & Liu, 2009; Pham, 2012; Yoon et al., 2001). Puczko and Ratz (2000) investigated the significant differences between residents and tourists in their perceptions of negative environmental impacts and concluded that in tourists' opinion tourism has a less negative impact on the natural environment than that of residents.

Based on previous studies, the following hypothesis was proposed to examine any significant difference between a negative environmental impact and support for sustainable tourism.

Hypothesis 5_a (Resident) and 5_b (Tourist): Environmental factor has a negative impact on sustainable tourism development.

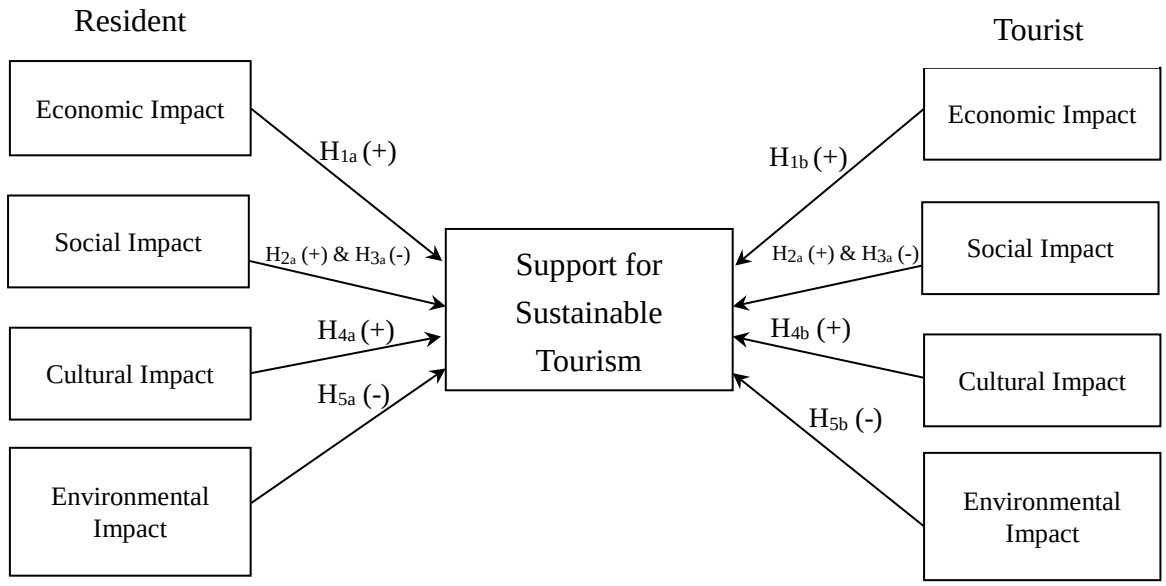


Figure 1: A Conceptual Model of Proposed Relationships

3. METHOD

3.1. Study Site

The study site, Penghu or Pescadores, is the largest island of Taiwan, and one of its 23 counties. Penghu is an archipelago of 90 small islands off the western coast of Taiwan.

According to Penghu County Government ("Population," 2015), the population of Penghu is 102,304. The islands cover a land area of 141 km² and comprise six administrative districts: one city (Magung), and five townships (Huxi, Baisha, Shiyeu, Wangan, and Cimei). Penghu Island is famous for its abundant natural resources and cultural and historic heritage ("Penghu national scenic area administration," 2017a). Tourists come for its marine resources and popular activities including sea fishing, scuba diving, glass-bottom boat trips, and dolphin watching. The waters off Penghu are rich in coral and the area is one of the two biggest producers (the other is Italy) of aragonite in the world. It has long been a favorite island destination among the Taiwanese and attracts approximately 700,000 tourists (Shan, 2014). The domestic majority account for 98% of tourists from March to August. Overseas tourists, especially from China, have begun traveling to Penghu due to the promotion of natural and cultural beauty from the Penghu government and the inexpensive cost of travel between Penghu and mainland China. The cultural heritage tourism in Penghu includes 14 national cultural heritage sites, museums featuring traditional arts and crafts exhibitions, and festivals with performances of traditional dances and music. Most tourists visit Tin Hau Temple, the earliest first-class national heritage, built in 1563, for its religious and cultural festivals. Cultural historic sites have become the main attractions for tourists traveling to Penghu ("Penghu national scenic area administration," 2017b).

3.2. Study Samples and Online Survey Site

The study samples consisted of residents of Penghu and tourists from Taiwan who had visited Penghu Island at least once. This study used a web-based online survey through a popular commercial portal site named YouthWant (http://www.YouthWant.com) in Taiwan. Two samples were collected: 1) respondents over 18 years of age residing in Penghu and 2) tourists who had visited Penghu Island within the past two years. This portal site has more than two million enrolled members and five million absolute unique visitors each month ("Introduction of registered enterprises in e-commerce marketing competition," 2010) since it was launched in 2000. People who paid the membership fee can have access to numerous services and resources with regard to entertainment, commerce, and academy. Online surveys for commercial and academic investigation are commonly used by marketers and academic researchers with a charge criterion in terms of required quantity (Dillman, 2000). Due to its strict requirements for proof of personal identification, this survey website ensures no repeated responses from the same individual, whereas privacy protection is assured when members participate in activities or conduct transactions on this website. In the portal service, there is a survey area (http://survey.youthwant.com.tw) where the survey was posted under the YouthWant website (http://www.youthwant.com.tw). The survey investigators neither provided an invitation via email nor posted invitation to respondents anywhere for this survey. YouthWant advertised surveys and encouraged members to complete the questionnaires.

YouthWant community members usually check available surveys to accumulate reward points.

3.3. Survey Instrument and Data Collection

An online survey was designed to examine the economic, social, cultural, and environmental impact of tourism development on Penghu Island. The questionnaire consisted of four sections; four sustainability factors containing 20 attributes; three attributes of tourism development support; four variables of socio-demographic characteristics; and two variables of travel behavior. The sustainability factors were developed based on a review of literature (Choi & Sirakaya, 2006; Cottrell et al., 2004; Ko, 2001; Yoon et al., 2001) and a series of discussions among the study investigators. They were measured on a five-point Likert scale of 1 to 5 where 1 is "*strongly disagree*" and 5 is "*strongly agree*," indicating the degree to which respondents agree or disagree with statements concerning the impacts of tourism development. All instruments used in this study were translated into Chinese. A pilot questionnaire was tested by ten graduate students at a university where they could answer both English and Chinese versions. The instruments were revised for clarity after inaccurate wording noted by these ten respondents was pointed out.

The online survey appeared for three weeks on the YouthWant website which is the largest network community with paid membership. At the beginning of the survey instrument, the members of YouthWant were informed that this survey was open only to respondents 18 years of age and over who were residents of Penghu or tourists who had visited Penghu within the past two years. Respondents were given reward points that could be transferred to their membership accounts for cash or gifts when meeting a certain required amount, which is regarded as an effective inducement for participation in online surveys (Dillman, 2000). To ensure confidentiality, all responses remained anonymous. No question could be left blank. Each question had to be answered before the respondent could proceed to the next. During survey periods, 3011 members had clicked and checked the starting section to see whether they were eligible or desired to continue the survey. A total of 363 online questionnaires − 104 residents and 259 tourists − was collected for analysis. The usable response rate of this survey was 12.3%.

3.4. Data Analysis

Descriptive and frequency analyses were carried out to summarize respondents. The Chi-square was used to examine any significant differences between resident and tourist groups with respect to respondents' profiles. Confirmatory factor analysis (CFA) was performed to indicate overall model fit, reliability and validity. Lastly, structural equation modeling was done to identify the direction and relationships among the five dimensions of sustainable tourism development impacts and support for sustainable tourism in Penghu Island. IBM SPSS Amos 20 was used for the structural equation modeling test.

4. RESULTS

4.1. Respondents' profile

The socio-demographic of two samples were examined and presented in Table 1. One hundred and four Penghu residents and 259 tourists, who visited Penghu, participated in this study. Of these resident participants, 54.8% were females; 80.8% were between 20 and 40 years; 78.9% had higher level of education (above or equivalent to a college degree); and 39.4% had monthly incomes between US $607 (approximately TWD$20,000; 1 USD = 33 Taiwan Dollar, TWD) and US $1,788. In addition, all participants had visited their nearby tourism destinations more than five times and 46.2 % were accompanied by family members. Of these tourists, 59.8% were females; 81.5 % were aged between 20 and 40 years; 71% had higher level of education; and 37% had monthly incomes between US $607 and US $1,788. Furthermore, large percentages of tourist participants had visited Penghu for the first time (39.8 %) and two times (28.6%); and they traveled with family (46.7%) and colleagues (22.0%). Two samples were compared using Chi-Square tests to identify the significance, which showed that the residents visited cultural heritage tourism in Penghu more often than tourists.

Table 1. A Profile of Respondents

Variable	Resident (N = 104)		Tourist (N = 259)		Test statistics
	%	N	%	N	
Gender					X^2 = .78
Male	45.2%	47	40.2%	104	
Female	54.8%	57	59.8%	155	
Age					X^2 = .65
18-20	15.4%	16	15.1%	39	
21-30	57.7%	60	61.8%	160	
31-40	23.1%	24	19.7%	51	
41-50	3.8%	4	3.4%	9	
Education					X^2 = 4.22
High School or below	1.9%	2	4.3%	11	
Senior High School	19.2%	20	24.7%	64	
College/University	69.3%	72	65.6%	170	
Graduate School or above	9.6%	10	5.4%	14	
Monthly Income					
No Income	22.1%	23	21.2%	55	X^2 = 1.96
≤ $ 606	25.0%	26	29.7%	77	
$ 607-$1,182	17.3%	18	18.5%	48	
$1,183-$1,788	22.1%	23	18.5%	48	
$1,789-$2,395	8.7%	9	6.9%	18	
$2,395-$3,000	1.9%	2	1.2%	3	
≥ $3,001	2.9%	3	3.9%	10	
Times of Visitation					X^2 = 270.68*
1 time	0%	0	39.8%	103	
2 times	0%	0	28.6%	74	
3 times	0%	0	17.4%	45	
4 times	0%	0	5.0%	13	
5 times	43.3%	45	1.9%	5	

6 times or above	56.7%	59	7.3%	19	
Type of people accompanied					$X^2 = 0.56$
Family	46.2%	48	46.7%	120	
Colleagues	22.1%	23	22.0%	57	
Classmates	19.2%	20	21.2%	55	
Friends	12.5%	13	10.0%	26	

* $p < .05$ level

4.2. Descriptive Statistics

The results in Table 2 indicated the mean scores of 20 items of tourism development impacts and support, as well as the corresponding standard deviation. The highest mean score of tourism development impact in resident group were identified by: PC2 (*M* = 4.22): *Enables international tourists and Taiwan's tourists to understand local heritage and culture*; PC3 (*M* = 4.20): *Provides interaction between local residents and tourists*; and PS5 (*M* = 4.19): *Conserves local traditional values*. The lowest mean score in resident group were all found in NEn construct, including NEn1 (*M* = 2.19): *Tourists cause problems with garbage and hygiene*; NEn4 (*M* = 2.22): *The development of tourism causes green space to disappear*; and NEn2 (*M* = 2.33): *Tourists cause heavy crowding and noise pollution*. The highest mean score of tourism development impact in tourist group were identified in: PC2 (*M* = 4.17): *Enables international tourists and Taiwan's tourists to understand local heritage & culture*; PS3 (*M* = 4.04): *Improves family relationship or friendship interaction*. The lowest mean scores in the tourist group were also found in NEc construct, including NEn1 (*M* = 2.24): *Tourists cause problems with garbage and hygiene*; NEn3 (*M* = 2.26): *Tourists cause heavy traffic and air pollution*; and NEn2 (*M* = 2.27): *Tourists cause heavy crowding and noise pollution*.

Table 2. Reliability Test and Independent t-test

Attitude Items	Resident		Tourist		*t* test	*P* value
	Mean (SD)[a]	Cronbach's Alpha	Mean (SD)	Cronbach's Alpha		
Positive Economic Impact		0.83		0.85	-0.11	.914
PEc1: Increase local tourism income (room and board, purchasing ticket and commodities)	4.04 (0.80)		4.01 (0.76)		0.34	.731
PEc2: Provide job opportunities for local residents (run business or be hired)	4.00 (0.82)		4.02 (0.70)		-0.27	.787
PEc3: Attract external investment	3.90 (0.92)		3.93 (0.80)		-0.22	.815
PEc4: Improve living standard for local residents	3.91 (0.84)		3.93 (0.76)		-0.19	.852
Positive Social Impact		0.92		0.82	2.78	.006*
PS1: Provides education for tourists	4.01 (0.68)		3.95 (0.66)		0.72	.470
PS2: Provides entertainment for tourists	4.13 (0.70)		3.53 (0.61)		8.19	.000*
PS3: Improve family relationship or friendship interaction	4.12 (0.69)		4.04 (0.69)		0.96	.339
PS4: Impact long-term development and construction of local areas	3.99 (0.76)		3.94 (0.75)		0.60	.548
PS5: Conserve local traditional values	4.19 (0.76)		3.90 (0.60)		3.50	.001*
PS6: Increases national reputation of Penghu Island tourism	4.08 (0.73)		4.04 (0.71)		0.46	.647
Negative Social Impact		0.83		0.80	1.04	.300
NS1: Brings stream of people but influence local residents' daily routines	3.88 (0.94)		3.77 (0.90)		1.00	.315
NS2: Tourists destroy local heritage and public property	3.88 (0.96)		3.77 (0.99)		0.90	.367
Positive Cultural Impact		0.94		0.80	2.68	.008*
PC1: Preserve local folk custom, history, and heritage	4.16 (0.77)		3.97 (0.55)		2.31	.022
PC2: Provides international tourists and Taiwan's tourists to understand local heritage & culture	4.22 (0.74)		4.17 (0.67)		0.69	.492
PC3: Provides interaction between local residents and tourists (heritage and values)	4.20 (0.74)		3.98 (0.72)		2.67	.008*
PC4: Increase cultural recognition and preservation of local residents	4.16 (0.74)		3.83 (0.69)		4.08	.000*
Negative Environmental Impact		0.88		0.92	0.18	.860
NEn1: Tourists cause the problems of garbage and hygiene	2.19 (0.94)		2.24 (0.98)		-0.39	.700
NEn2: Tourists causes heavy crowing and noise pollution	2.33 (1.01)		2.27 (0.99)		0.53	.600
NEn3: Tourists cause heavy traffic and air pollution	2.39 (1.05)		2.26 (0.97)		1.18	.241
NEn4: The development of tourism causes green space disappear	2.22 (1.06)		2.30 (1.00)		-0.65	.514

Note. Each item was measured by a 5-point Likert-type scale of 1 (strongly disagree), 2 (disagree), 3 (neutral), 4 (agree), and 5 (strongly).

[a]Standard Deviation in parentheses.

* $p < .05$

4.3. Confirmatory factor analysis (CFA)

The measures were validated through confirmatory factor analysis (CFA), using IBM SPSS Amos 20 for Windows. The study estimated the measurement model by using Maximum Likelihood Estimation (MLE) with a number of sample greater than 100 (Ding, Velicer, & Harlow, 1995), indicating that two samples of the current study (resident, N1=104; tourist, N2=259) are adequate to be assessed with CFA. Six indicators for endogenous variables were deleted to improve model fit due to the loadings of less than 0.50 (PS2, PS5, PS6, PC1) (Anderson, 1987) or modification indices greater than 5 (PEc1 and NEn4). All item loadings ranged from 0.72 to 0.98, indicating that constructs could explain 40% variance of the corresponding items if the factor loading of each item is greater than 0.63 (Tabachnick & Fidell, 2007).

Construct validity was evaluated by examining the item loadings and their associated *t*-values, as well as the composite reliabilities and the average variance extracted (Fornell & Larcker, 1981). As shown for both samples in Table 3, all loadings in the final CFA are significant, with a standardized loading of at least 0.71 and *t*-values ranged from 7.92 to 19.76 greater than 3.29 ($\alpha = 0.001$); evidence of convergent validity (Bagozzi, Yi, & Phillips, 1991; Fornell & Larcker, 1981). The composite reliability value ranged from 0.79 to 0.92, so was greater than 0.60 (Hair, Anderson, Babin, & Black, 2010), demonstrating reliable factors and an internal consistency of all items. Moreover, all of the average variances extracted values (0.56 to 0.79) exceeded 50% (Barclay, Thompson, & Higgins, 1995), indicating that the measurement error variance was less than the variance captured by the latent variable, and that measurement error was not driving the results. All factors were significantly correlated on both groups.

Nuevo et al. (2008) suggested assessing factor invariance of the measurement prior to making comparisons between groups because there is reason to believe that the structure of the compared construct is not equal across groups. The study statistically compared the equivalence of the factor structures across two samples by following the guidelines suggested by Joreskog (1971) and elaborated by Byrne, Shavelson, and Muthén (1989).

Factor structure equivalence was tested across the two samples by constraining the item loadings, the factor covariances, and the factor variances across the groups, so as to be equal, and by examining the equal lambdas, covariances, and variances. The result indicated that all of the items on each factor exhibit equivalent factor loadings across samples, demonstrating support for measurement invariance.

Table 3. Measurement Model and Invariance Analysis across Groups

Construct & Indicators	Resident				Tourist				Equivalent of λ
	Factor Loading (λ)	t-value	Composite Reliability	Average Variance Extracted	Factor Loading (λ)	t-value	Composite Reliability	Average Variance Extracted	Yes/No
Positive Economic Impact			.87	.69			.87	.69	Yes
PEc2	.79	9.11			.83	15.78			Yes
PEc3	.82	9.67			.82	15.47			Yes
PEc4	.87	10.46			.84	15.90			Yes
Positive Social Impact			.87	.69			.89	.73	Yes
PS1	.85	10.34			.84	16.33			Yes
PS3	.81	9.55			.87	17.18			Yes
PS4	.83	10.06			.84	16.28			Yes
Negative Social Impact			.84	.72			.81	.68	Yes
NS1	.77	7.92			.78	13.53			Yes
NS2	.92	9.22			.87	15.40			Yes
Positive Cultural Impact			.92	.79			.85	.66	Yes
PC2	.89	11.36			.86	16.49			Yes
PC3	.94	12.50			.85	16.24			Yes
PC4	.84	10.40			.71	12.56			Yes
Negative Environmental Impact			.87	.69			.92	.79	Yes
NEn1	.73	8.25			.85	16.75			Yes
NEn2	.98	12.39			.95	19.76			Yes
NEn3	.76	8.73			.86	17.04			Yes
Support for Tourism Development			.79	.561			.79	.56	Yes
STD1	.72	8.08			.73	12.99			Yes
STD2	.79	9.11			.75	13.30			Yes
STD3	.73	8.22			.75	13.43			Yes

Resident measurement model: $\chi^2 = 176.3$, df = 104, $p < 0.001$, RMSEA = 0.082, SRMR = 0.071, CFI = 0.937, NNFI = 0.918
Tourist measurement model: $\chi^2 = 280.9$, df = 104, $p < 0.001$, RMSEA = 0.081, SRMR = 0.056, CFI = 0.941, NNFI = 0.923

The goodness of fit of the model should be tested via the Chi-square, Root Mean Square Error of Approximation (RMSEA), Standardized Root Mean Residual (SRMR), Comparative Fit Index (CFI), and Non-Normed Fit Index (NNFI) (Hoyle & Panter, 1995; Hu & Bentler, 1999). The χ^2 has a great tendency to indicate significances as the sample size increases (Hair et al., 2010). Thus, a relative Chi-square (χ^2/df) value of less than 3 is recommended (Kline, 2005). Criterion values for model with a reasonable fit are RMSEA with a value of 0.08 or less (Browne & Cudek, 1993); SRMR with a value of 0.08 or less (Hu & Bentler, 1999), CFI and NNFI with values exceeding 0.90 and 0.95 (Hoyle & Panter, 1995; Hu & Bentler, 1999). Both revised measurement models showed a good fit to the data (χ^2 = 176.3, df = 104, p < 0.001, RMSEA = .082, SRMR = .071, CFI = .937, NNFI = .918 for residents; χ^2 = 280.9, df = 104, p < 0.001, RMSEA = .081, SRMR = .056, CFI = .941, NNFI = .923 for tourists).

All constructs were verified to be separate factors (i.e., to construct discriminant validity) by comparing the square root of the average variance extracted for a given construct with the correlations between that and all other constructs (Capron, 1999). Discriminant validity was supported by the square root of the average variance extracted greater than absolute correlations between two constructs. Table 4 shows that the diagonal elements have been replaced by the square roots of AVE. The resident group shows that all diagonal values ranging from 0.75 to 0.89 are greater than the ranges of most of their off-diagonal values, indicating that each construct shared more variance with its items than it does with other constructs. Except for some correlations between Support for Tourism Development (STD) and other constructs, the tourist group shows that all square roots of AVE (0.75 to 0.89) on the diagonal are greater than correlations off the diagonal.

Table 4. Construct Descriptive Statistics, Discriminant Validities, and Correlations

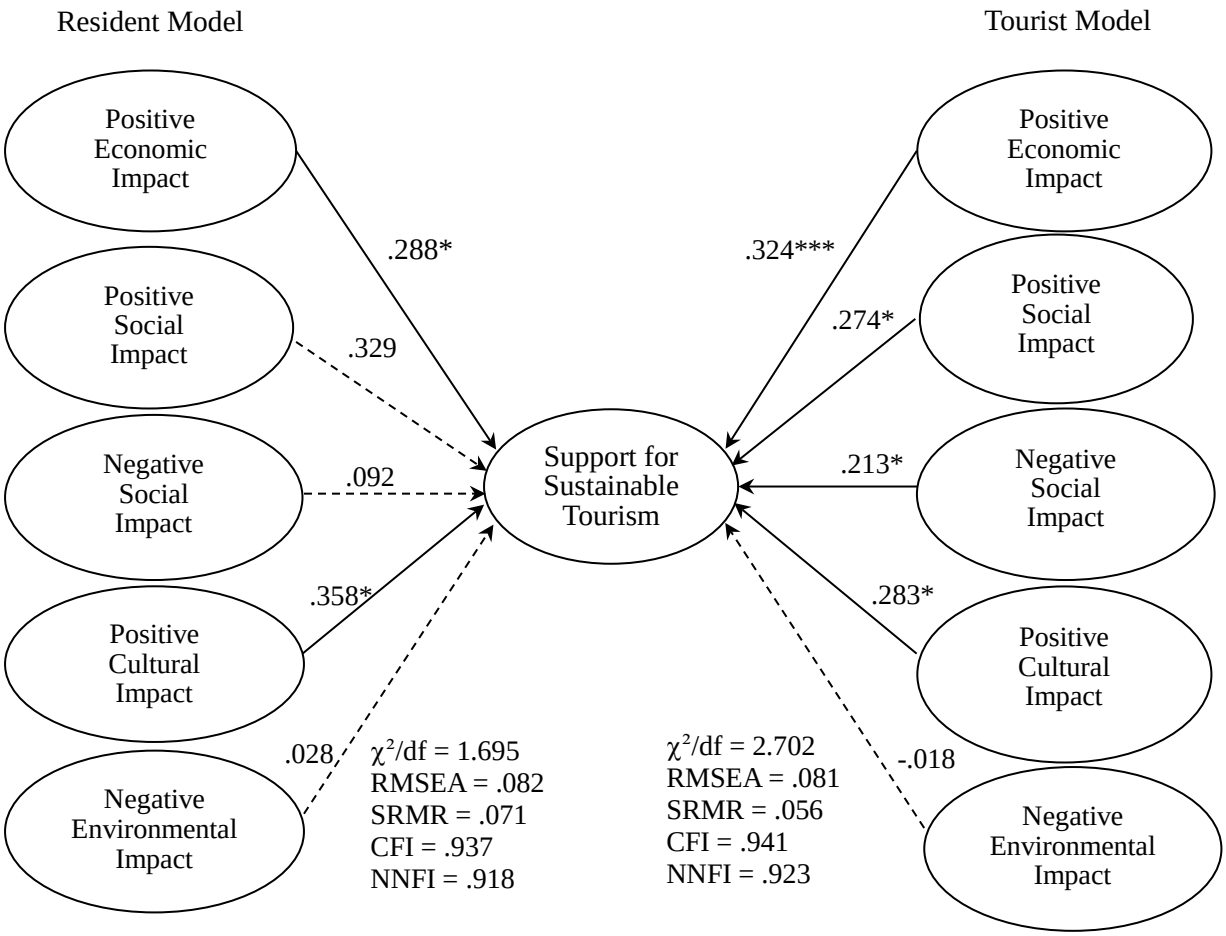
Resident (N=104) / Tourist (N = 259)		PEc	PS	NS	PC	NEn	STD
Positive Economic Impact		*(.83[a])* *(.83)*	.69***	.24*	.59***	.08	.75***
Positive Social Impact		.68***	*(.83)* *(.85)*	.39*	.81***	-.12	.66***
Negative Social Impact		.33***	.36***	*(.85)* *(.82)*	.37*	-.42***	.41*
Positive Cultural Impact		.71***	.72***	.39***	*(.89)* *(.81)*	-.06	.63***
Negative Environmental Impact		-.06	-.12	-.67***	-.14*	*(.83)* *(.89)*	-.05
Support for Tourism Development		0.64***	0.76***	0.53***	.78***	-.27***	*(.75)* *(.75)*
Mean	Resident	3.94	4.04	3.88	4.20	2.31	4.02
	Tourist	3.96	3.98	3.77	3.99	2.25	3.96
Standard	Resident	0.76	0.63	0.88	0.69	0.88	0.64

Deviation	Tourist	0.67	0.63	0.87	0.61	0.90	0.60

[a]Square root of AVE are on the diagonal.
* $p < .05$, *** $p < .001$

4.4. Structural Model Analysis

Structural equation modeling (SEM) was performed to examine the relationship among constructs across samples. The results of SEM across samples are graphically presented in Figure 2. The overall goodness-of-fit showed that the data moderately fits to the model across samples (χ^2 = 176.3, df = 104, $p < .001$, RMSEA = .082, SRMR = .071, CFI = .937, NNFI = .918 for residents; χ^2 = 280.9, df = 104, $p < .001$, RMSEA = .081, SRMR = .056, CFI = .941, NNFI = .923 for tourists). This structural model fit is the same as the measurement model fit due to the same structure of constructs only generating direct impacts among constructs. This study discovered several findings across two samples.



* $p < .05$, ** $p < .01$, *** $p < .001$

Figure 2: The Results of the Structural Equation Model (SEM) for Two Stakeholders

Ten hypotheses, based on the results of CFA, were to examine the relationships between five impacts and support for sustainable tourism development across residents (H_1a- H_5a) and tourists (H_{1b}-H_{5b}), respectively. As illustrated in Figure 2, two (H_1a and H_4a) out of five hypotheses ($H_1a - H_5a$) were supported by the data in the resident model. The results showed that residents' perceived positive economic impact ($\beta = .288$, $t = 2.442$, $p < .05$), and positive cultural impact ($\beta = .358$, $t = 2.442$, $p < .05$) had a positive effect on their support for sustainable tourism development in Penghu island. The findings support previous empirical studies in the link between positive economic impact and support for tourism development (Dyer et al., 2007; Gursoy & Rutherford, 2004; Huh & Vogt, 2008; Kang et al., 2008; Yoon et al., 2001) and the link between positive cultural impact and support for tourism development (Dyer et al., 2007; Gursoy & Rutherford, 2004; Yoon et al., 2001). However, positive and negative social impact as well as negative environmental impact had no statistically significant impact on sustainable tourism development. These findings were inconsistent with prior studies in the link between positive social impact and support for tourism development (Dyer et al., 2007); the link between negative social impact and support for tourism development (Dyer et al., 2007; Kang et al., 2008); the link between negative environmental impact and support for tourism development.

However, four (H_{1b}, H_{2b}, H_{3b}, and H_{4b}) out of five hypotheses ($H_{1b} - H_{5b}$) were found statistically significant in the tourist model; the exception was H_{5b}. These results explained that tourists' attitudes toward positive economic impact ($\beta = .324$, $t = 4.068$, $p < .001$), positive social impact ($\beta = .274$, $t = 2.456$, $p < .05$), negative social impact ($\beta = .213$, $t = 2.560$, $p < .05$), and positive cultural impact ($\beta = .283$, $t = 2.333$, $p < .05$) significantly influenced their support for sustainable tourism development in Penghu Island. A lack of any findings in previous research precludes any comparisons with this result.

The study first investigated the relationship between tourists' perceived tourism impacts and their support for sustainable tourism development, and compared it to the resident model. The results of tourist model showed that negative social impact has a positive impact on their support for tourism development. Residents and tourists, the two stakeholders in the tourism destination, may be on opposite sides in their assessments of negative social impact. A summary of the hypotheses testing results is presented in Table 5.

Table 5. The Results of the Tested Hypothesis across Samples

Hypothesis	Hypothesized Path			Path Coefficients	t-value	*p* -value	Hypothesis Support
Resident							
H_1a	PEc[1]	→	STD[6]	.288	2.442	.015*	Yes
H_2a	PS[2]	→	STD	.329	1.870	.061	No
H_3a	NS[3]	→	STD	.092	1.006	.314	No
H_4a	PC[4]	→	STD	.358	2.460	.014*	Yes
H_5a	NEn[5]	→	STD	.028	.348	.728	No

Tourist							
H_{1b}	PEc	→	STD	.324	4.068	.000***	Yes
H_{2b}	PS	→	STD	.274	2.456	.014*	Yes
H_{3b}	NS	→	STD	.213	2.560	.010*	Yes
H_{4b}	PC	→	STD	.283	2.333	.020*	Yes
H_{5b}	NEn	→	STD	-.018	-.252	.801	No

[1]It stands for Positive Economic factor.
[2]It stands for Positive Social factor.
[3]It stands for Negative Social factor.
[4]It stands for Positive Cultural factor.
[5]It stands for Negative Environmental factor.
[6]It stands for Support for Tourism Development.
* $p < .05$, ** $p < .01$, *** $p < .001$

5. CONCLUSION AND IMPLICATION

This study examined the relationships between the attitudes of the two groups of stakeholders and their support for sustainable tourism development in Penghu Island, Taiwan, with respect to its economic, social, cultural, and environmental dimensions. The conceptual models and hypotheses were developed through an extensive literature review. Two research hypotheses from the resident model were accepted and four research hypotheses from the tourist model were accepted at the significance level of .05.

The resident model indicated that positive economic and cultural dimensions have significantly influenced their support for sustainable tourism development. Residents seem to support the sustainable tourism because they have positive economic and cultural benefits from local tourism development. According to social exchange theory, people tends to maximize benefits and minimize costs, so a positive relationship can be established when people believe that the benefits outweigh the costs (Ap, 1992; Huh & Vogt, 2008; Ward & Berno, 2011). In this regard, a positive relationship between the economic dimension and support for sustainable tourism development suggests that tourism development has direct and indirect economic benefits, such as 1) increasing local tourism incomes, 2) employee opportunities, 3) attracting investments in a local economy, and 4) improving residents' quality of life. These measures should be implemented by tourism policy makers, developers, and business owners. Without the economic benefits from the local tourism industry, the residents' support for sustainable tourism development will be diminished. In addition, with the cultural dimension, the residents appear to believe that if tourists visit Penghu, they will discover their heritage and culture, enjoy sightseeing, and after they return home, share their experiences and their feelings about the island. Thus they will promote Penghu's cultural heritage and visitors to Penghu. For Penghu residents, the best way to preserve their heritage and culture might be to encourage sustainable tourism development. However, the residents do not perceive that they have been significantly impacted by the positive or negative social dimensions or by the negative

environmental dimension. From the residents' perspectives, the tourism industry, like the fishing industry, can be one of the best economic vehicles in their community. Revenues earned from tourism should be invested in the preservation of the island's heritage and culture: for instance, repairing historical sites, advertising and raising awareness of the importance of protecting Penghu's heritage and culture.

The tourist model confirms that positive and negative social dimensions have affected residents' support for sustainable tourism development. Perhaps tourists who support sustainable tourism development are strongly aware of its positive and negative social impact upon Penghu Island. For instance, they seem concerned that their pleasure trips to Penghu Island might disrupt residents' daily routines and ruin the local heritage. To alleviate these concerns, marketing promotion messages should reiterate that local residents welcome visitors who can spread the island's cultural heritage after they return home. Tourists should be told their visit can strengthen their family relationships, friendships, and their education. Penghu Island should be promoted as a place for family vacation and enjoyment of natural scenery.

To promote sustainable tourism, Penghu Island's local government and tourism developers should design a sustainable economic system that can generate income and employment for residents who expect tourism development to have a positive economic impact to attenuate negative economic impact in Penghu Island. Tourists want to support sustainable tourism development if it stimulates the local economy and any economic benefits that may accrue to residents from preserving the cultural heritage and nature. Marketing communication programs to showcase the advantages of economic and cultural aspects of the sustainable tourism development is also recommended. According to the study findings, the crown jewel of sustainable tourism development in Penghu Island should be natural environment and cultural heritage, so simultaneously preserving and promoting them seems to be a key element in the success of sustainable tourism development in Penghu Island.

6. LIMITATIONS AND FUTURE RESEARCH

There are some limitations to the findings of this study. First, the findings should be generalized with caution because the participants voluntarily participated in the study via online portal service. The response rate of the study was 12.3%. Second, even though the conceptual models were developed and proposed by an extensive literature review, some possible dimensions in the model might have been overlooked.

A longitudinal study to monitor the attitudes of two groups of stakeholders toward sustainable tourism development over time is strongly recommended. Such a study will reveal changes in attitude as they are occurring rather than in hindsight. These changes in attitude play a significant role in sustainable tourism development. An investment in this kind of longitudinal research will pay off when both groups of stakeholders can maximize their benefits and

minimize their costs based on its findings.

References

Akis, S., Peristianis, N., & Warner, J. (1996). Residents' attitudes to tourism development: The case of cyprus. *Tourism Management, 17*(7), 481-494.

Allen, L. R., Long, P. T., Perdue, R. R., & Kieselbach, S. (1988). The impact of tourism development on residents' perceptions of community life. *Journal of Travel Research, 27*(1), 16-21.

Andereck, K. L., Valentine, K. M., Knopf, R. C., & Vogt, C. A. (2005). Residents' perceptions of community tourism impacts *Annals of Tourism Research, 32*(4), 1056-1076.

Andereck, K. L., & Vogt, C. A. (2000). The relationship between residents' attitudes toward tourism and tourism development options. *Journal of Travel Research, 39*(1), 27-36.

Anderson, J. C. (1987). An approach for confirmatory measurement and structural equation modeling of organizational properties. *Management Science, 33*(4), 525-541.

Ap, J. (1992). Residents' perceptions on tourism impacts. *Annals of Tourism Research, 19*(4), 665-690.

Ap, J., & Crompton, J. L. (1998). Developing and testing a tourism impact scale. *Journal of Travel Research, 37*(2), 120-130.

Bagozzi, R. P., Yi, Y., & Phillips, L. W. (1991). Assessing construct validity in organizational research. *Administrative Science Quarterly, 36*(3), 421-458.

Barclay, D., Thompson, R., & Higgins, C. (1995). The partial least squares (pls) approach to causal modeling: Personal computer adoption and use as an illustration. *Technology Studies, 2*(2), 285-309.

Besculides, A., Lee, M. E., & McCormick, P. J. (2002). Residents' perceptions of the cultural benefits of tourism. *Annals of Tourism Research, 29*(2), 303-319.

Browne, M. W., & Cudek, R. (1993). *Alternative ways of assessing model fit*. Newbury Park, CA: Sage.

Brunt, P., & Courtney, P. (1999). Host perceptions of sociocultural impacts. *Annals of Tourism Research, 26*(3), 493-515.

Byrd, E., Cardenas, D., & Dregalla, S. (2009). Differences in stakeholder attitudes of tourism development and the natural environment. *E-Review of Tourism Research, 7*(2).

Byrd, E. T., Cardenas, D. A., & Greenwood, J. B. (2008). Factors of stakeholder understanding of tourism: The case of eastern north carolina. *Tourism and Hospitality Research, 8*(3), 192-204.

Byrne, B. M., Shavelson, R. J., & Muthén, B. (1989). Testing for the equivalence of factor covariance and mean structures: The issue of partial measurement invariance. *Psychological Bulletin 105*(3), 456-466.

Capron, L. (1999). The long-term performance of horizontal acquisitions. *Strategic Management Journal, 20*(11), 103-118.

Chang, L.-Y., & Liu, W. (2009). Temple fairs in taiwan: Environmental strategies and competitive advantage for cultural tourism. *Tourism Management, 30*(6), 900-904.

Choi, H. C., & Sirakaya, E. (2006). Sustainability indicators for managing community tourism. *Tourism management, 27*(6), 1274-1289.

Cottrell, S., Duim, R., Ankersmid, P., & Kelder, L. (2004). Measuring the sustainability of tourism in manuel antonio and texel: A tourist perspective. *Journal of Sustainable Tourism, 12*(5), 409-431.

Crompton, R., & Sanderson, K. (1990). *Gendered jobs and social change*. London: Unwin Hyman.

Davis, D., Allen, J., & Consenza, R. M. (1988). Segmenting local residents by their attitudes, interests and opinions toward tourism. *Journal of Travel Research, 27*(2), 2-8.

Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method* (Vol. 2): Wiley New York.

Ding, L., Velicer, W., & Harlow, L. (1995). Effect of estimation methods, number of indicators per improper solutions on structural equation modeling fit indices. *Structural Equation Modeling, 2*, 119-143.

Dritsakis, N. (2004). Tourism as a long-run economic growth factor: An empirical investigation for greece using causality analysis. *Tourism Economics, 10*(3), 305-316.

Duffield, J. W. (1982). Forest regions of north america and the world. In R. A. Young (Ed.), *Introduction to forest science* (pp. 37-66). New York: John Wiley & Sons.

Dyer, P., Gursoy, D., Sharma, B., & Carter, J. (2007). Structural modeling of resident perceptions of tourism and associated development on the sunshine coast, australia.

Tourism Management, 28(2), 409-422.

Ekanayake, E., & Long, A. E. (2012). Tourism development and economic growth in developing countries. *The International Journal of Business and Finance Research, 6*(1), 61-63.

Erkuş-Öztürk, H., & Eraydın, A. (2009). Environmental governance for sustainable tourism development: Collaborative networks and organization building in the antalya tourism region. *Tourism Management, 31*(1), 113-124

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50.

Gilbert, D., & Clark, M. (1997). An exploratory examination of urban tourism impact, with reference to residents attitudes, in the cities of canterbury and guildford. *Cities, 14*(6), 343-352.

Gursoy, D., & Rutherford, D. G. (2004). Host attitudes toward tourism: An improved structural model. *Annals of Tourism Research, 31*(3), 495-516.

Hair, J. F., Anderson, R. E., Babin, B. J., & Black, W. C. (2010). *Multivariate data analysis: A global perspective* (Vol. 7): Pearson Upper Saddle River, NJ.

Harrill, R., & Potts, T. (2003). Tourism planning in historic districts. *Journal of American Planning Association, 69*(3), 233-244.

Hoyle, R. H., & Panter, A. T. (1995). *Writing about structural equation models*. London: Sage.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling, 6*, 1-55.

Huh, C., & Vogt, A. (2008). Changes in residents' attitudes toward tourism over time: A cohort analytical approach. *Journal of Travel Research, 46*(4), 446-455.

Husband, W. (1989). Social statue and perception of tourism in zambia. *Annals of Tourism Research, 16*(2), 237-255.

Huttasin, N. (2008). Perceived social impacts of tourism by residents in the otop tourism village, thailand. *Asia Pacific Journal of Tourism Research, 13*(2), 175-191.

Introduction of registered enterprises in e-commerce marketing competition. (2010). *Ministry*

of Economic Affairs. Retrieved from http://ecidea.pchome.com.tw/99/news_org2.html?page=5

Johannesburg declaration on sustainable development. (2002). *World Summit on Sustainable Development*. from http://www.un-documents.net/jburgdec.htm

Johnson, J. D., Snepenger, D. J., & Akis, S. (1994). Residents' perceptions of tourism development. *Annals of Tourism Research, 21*(3), 629-642.

Joreskog, K. G. (1971). Simultaneous factor analysis in several populations. *Psychometrika, 36*(4), 409-426.

Jurowski, C., & Gursoy, D. (2004). Distance effects on resident attitudes toward tourism. *Annals of Tourism Research, 31*(2), 296-312.

Jurowski, U., Uysal, M., & Williams, D. R. (1997). A theoretical analysis of host community resident reactions to tourism. *Journal of Travel Research, 36*(2), 3-11.

Kaae, B. C. (2001). *The perceptions of tourists and residents of sustainable tourism principles and environmental initiatives*. Oxon: CABI.

Kang, S. K., Lee, C. K., Yoon, Y., & Long, P. T. (2008). Resident perception of the impact of limited-stakes community-based casino gaming in mature gaming communities. *Tourism Management, 29*(4), 681-694.

Kayat, K. (2002). Power, social exchanges and tourism in langkawi: Rethinking resident perceptions. *International Journal of Tourism Research, 4*(3), 171-191.

Kline, R. B. (2005). *Principles and practice of structural equation modeling* (2 ed.). New York: Guilford Press.

Ko, D. W., & Stewart, W. P. (2002). A structural equation model of residents' attitudes for tourism development. *Tourism Management, 23*(5), 521-530.

Ko, J. T. G. (2001). Assessing progress of tourism sustainability. *Annals of Tourism Research, 28*(3), 817-820.

Kuvan, Y., & Akan, P. (2005). Residents' attitudes toward general and forest-related impacts of tourism: The case of belek, antalya. *Tourism Management, 26*(5), 691-706.

Lee, C. C., & Chang, C. P. (2008). Tourism development and economic growth: A closer look at panels. *Tourism Management, 29*(1), 180-192.

Leung, Y. F., & Farrell, T. A. (2002). *Visitor impact knowledge is basic*. Paper presented at the World Ecotourism Summi, Quebec City, Canada.

Li, M., Wu, B., & Cai, L. (2008). Tourism development of world heritage sites in china: A geographic perspective. *Tourism Management, 29*(2), 308-319.

Lindberg, K., & Johnson, R. L. (1997). Modeling resident attitudes toward tourism. *Annals of Tourism Research, 24*(2), 402-424.

Liu, J. C., Sheldon, P. J., & Var, T. (1987). Resident perception of the environmental impacts of tourism. *Annals of Tourism Research, 14*(1), 17-37.

Liu, J. C., & Var, T. (1986). Residents attitudes toward tourism impacts in hawaii. *Annals of Tourism Research, 13*(2), 193-214.

Making tourism more sustainable - a guide for policy makers. (2005). *United Nations Environment Programme and World Tourism Organization*. from http://www.unep.fr/shared/publications/pdf/DTIx0592xPA-TourismPolicyEN.pdf

Mathieson, A., & Wall, G. (1982). *Tourism: Economic, physical, and social impacts*. New York: Longman House.

McCool, S. F., & Martin, S. T. (1994). Community attachment and attitudes toward tourism development. *Journal of Travel Research, 32*(3), 29-34.

McGehee, N. G., & Andereck, K. L. (2004). Factors predicting rural residents' support of tourism. *Journal of Travel Research, 43*(2), 131-140.

Milman, A., & Pizam, A. (1988). Social impacts of tourism on central florida. *Annals of Tourism Research, 15*(2), 191-204. doi: http://dx.doi.org/10.1016/0160-7383(88)90082-5

Mitchell, R. E. (2001). *Community perspectives in sustainable tourism: Lessons from peru*. Oxon, UK: CABI.

Murphy, P. E. (1983). Perceptions and attitudes of decisionmaking groups in tourism centers. *Journal of Travel Research, 21*(3), 8.

Nuevo, R., Ruiz, M. A., Izal, M., Montorio, I., Losada, A., & Marquez-Gonzalez, M. (2008). A comparison of the factorial structure of dsm-iv criteria for generalized anxiety disorder between younger and older adults. *Journal of Psychopathology and Behavioral Assessment, 30*(4), 252-260.

Nunkoo, R., Gursoy, D., & Juwaheer, T. D. (2010). Island residents' identities and their support for tourism: An integration of two theories. *Journal of Sustainable Tourism, 18*(5), 675-693.

Nunkoo, R., & Ramkissoon, H. (2012). Power, trust, social exchange and community support. *Annals of Tourism Research, 39*(2), 997-1023.

Nunkoo, R., & So, K. K. F. (2015). Residents' support for tourism: Testing alternative structural models. *Journal of Travel Research*. doi: 10.1177/0047287515592972

Othman, N., Anwar, N. A. M., & Kian, L. L. (2010). Sustainability analysis: Visitors impact on taman negara. *Journal of Tourism, Hospitality & Culinary Arts, 2*(1), 67-79.

Pederson, A. (2002). *Managing tourism at world heritage sites*. Paris: World Heritage Centre.

Penghu national scenic area administration. (2017a). *Penghu*. from http://www.penghu-nsa.gov.tw/English/

Penghu national scenic area administration. (2017b). *About Penghu*. from http://www.penghu-nsa.gov.tw/English/InDepthExperience/AboutPenghu/CulturalHistory.htm

Perdue, R. R., Long, P. T., & Allen, L. (1987). Rural resident tourism perceptions and attitudes. *Annals of Tourism Research, 14*(3), 420-429.

Perdue, R. R., Long, P. T., & Allen, L. (1990). Resident support for tourism development. *Annals of Tourism Research, 17*(4), 586-599.

Pham, L. H. (2012). Tourism impacts and support for tourism development in ha long bay, vietnam: An examination of residents' perceptions. *Asia Social Science, 8*(8), 28-39.

Pizam, A. (1978). Tourism's impacts: The social costs to the destination com-munity as perceived by its residents. *Journal of Travel Research, 16*(4), 8-12.

Population. (2015). *Penghu County Government*. from http://www.penghu.gov.tw/en/home.jsp?mserno=201111070001&serno=201111070015&contlink=content/20111229163334.jsp

Prentice, R. (1993). Community-driven tourism planning and residents' preferences. *Tourism Management, 14*(3), 218-227.

Puczko, L., & Ratz, T. (2000). Tourist and resident perceptions of the physical impacts of tourism at lake balaton, hungary: Issues for sustainable tourism management. *Journal*

of Sustainable Tourism, 8(6), 458-479.

Report of the world commission on environment and development. (1987). *General Assembly Resolution 42/187*. from http://www.un-documents.net/a42r187.htm

Ritchie, J. R. B. (1988). Consensus policy formulation in tourism. *Tourism Management, 9*(3), 199-216.

Shan, S. (2014). Feature: Rise in penghu tourism a challenge. *Taipei Times*. from http://www.taipeitimes.com/News/taiwan/archives/2014/06/24/2003593557

Sirakaya, E., Teye, V., & Sönmez, S. (2002). Understanding residents' support for tourism development in the central region of ghana. *Journal of Travel Research, 41*(1), 57-67.

Stoddard, J. E., Evans, M. R., & Dave, D. S. (2008). Sustainable tourism: The case of the blue ridge national heritage area. *Cornell Hotel and Restaurant Administration Quarterly, 49*(3), 245-257.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Boston: Pearson/Allyn & Bacon.

Teye, V., Sirakaya, E., & Sönmez, S. F. (2002). Residents' attitudes toward tourism development. *Annals of Tourism Research, 29*(3), 668-688.

Walpole, M. J., & Goodwin, H. J. (2000). Local economic impacts of dragon tourism in indonesia. *Annals of Tourism Research, 27*(3), 559-576.

Ward, C., & Berno, T. (2011). Beyond social exchange theory: Attitudes toward tourists. *Annals of Tourism Research, 38*(4), 1556-1569. doi: http://dx.doi.org/10.1016/j.annals.2011.02.005

Weaver, D. B., & Lawton, L. J. (2004). Visitor attitudes toward tourism development and product integration in an australian urban-rural fringe. *Journal of Travel Research, 42*(3), 286-296.

Yoon, Y., Gursoy, D., & Chen, J. S. (2001). Validating a tourism development theory with structural equation modeling. *Tourism Management, 22*(4), 363-372.