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四個離島地區觀光發展階段暨觀光衝擊之研究

Tourism Development Stages and Tourism Impacts of Four Offshore Islands in Taiwan

葉八方

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中文摘要

觀光發展在臺灣已受到廣泛重視。然而，觀光衝擊也隨著觀光發展而產生。本研究採用旅遊地區生命週期理論來探討澎湖、小琉球、綠島和蘭嶼四個研究地點在不同觀光發展階段下的觀光衝擊以及社區生活品質。首先，利用個觀光客人數及居民人數可以幫助判定觀光發展階段。此外，為了加強研究的信度，研究者採取德菲爾法了解各研究地點的觀光衝擊。除了採用德菲爾法之外，本研究也採取網路問卷以調查居民與遊客對於觀光衝擊以及社區生活品質的看法。研究結果顯示經濟、社會文化與環境衝擊最為明顯也最容易受到不同觀光發展階段而改變。另外，二手資料判讀與德菲爾法對於觀光發展階段的判定較不一致，兩者結果互有出入。因此，本研究針對觀光衝擊與觀光發展階段有較全面的分析，可以促進較有效的經營管理和決策。

關鍵字：觀光發展階段、觀光衝擊、社區生活品質、旅遊地區生命週期理論、
澎湖、小琉球、綠島、蘭嶼。

Abstract

Tourism development in Taiwan has been widely discussed in tourism research. As tourism rapidly develops, concomitant tourism impacts occur. This thesis aims to investigate tourism impacts and community QOL across different stages of development in terms of TALC model to four offshore islands—Penghu, Little Liuqiu, Green Island, and Orchid Island. The number of tourists and residential populations help to further designate the stages. In addition, to ensure the credibility, Delphi method is also applied, thereby reassuring tourism impact on those four islands. Apart from Delphi, another survey was conducted for both residents and tourists to investigate tourism impacts and community QOL. The results indicated that those impacts regarding economy, environment and services would be the most explicit and changeable, subject to tourism development. Next, tourism development stages by no means correspond to Delphi and secondary data analysis. As a result, comprehensive studies of tourism impacts and tourism development analyzed by this thesis can substantially facilitate successful management and effective decision making.

Keywords: Tourism Development Stages, Tourism Impacts, Community QOL, Tourism Area Life Cycle (TALC) model, Penghu, Little Liuqiu, Green Island, Orchid Island

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CHAPTER ONE INTRODUCTION

This chapter is mainly composed of study background, research questions, and purpose. Moreover, the significance of the study and the limitations are in the remaining section.

1. Study Background

For the past four decades, studies pertaining to tourism impacts have rapidly developed (Jafari, 1986). Both positive and negative impacts studies have drawn researchers' attentions. From positive to negative aspects, tourism impacts studies have grown to full dimension (Jafari, 1986). On the other hand, tourism development has also been widely discussed in the field of tourism, since community quality of life (QOL) is deemed as a crucial component of successful tourism industry. The importance of residents strike a great influence in tourism development in a destination. With rapid growth of tourism development in Taiwan, concomitant tourism impacts occur as well. Recently, tourism has become a serious issue s in policy making and management. Although tourism impacts are not new for researchers, the linkage between tourism development and tourism impacts needs more comprehensive studies.

In this research, the author tried to analyze tourism impacts and community QOL

among tourism development stages in Penghu, Little Liuqiu, Orchid Island, and Green Island. Having determined to develop sustainable tourism industry, the local government has created different visions. Therefore, balancing between tourism developments and maintaining public goods such as environment and cultural heritage initiates an important concern in offshore public construction (National Development Council, 2009).

2. Research Purpose

The purpose of this research is to understand the tourism impacts in light of community QOL across different development stages. Simply, the tourism impacts are discussed in five aspects: economy, socio-culture, environment, conditions and services (community QOL) under development, stagnation, decline and rejuvenation stages in Tourism Life Cycle Model of each study site.

3. Research Questions

Two major research questions are provided:

(1) What are the development stages in Penghu, Little Liuqiu, Orchid Island and Green Island?

(2) What tourism impacts or QOL may change in different tourism development?

To sum up, the research is based on the tourism impacts and community QOL in different development stages, so researcher will show different degree of impacts in different stages.

4. Limitations

In this research, there are several limitations. Firstly, with limited time and budget, the author cannot investigate four islands comprehensively. Next, in order to get adequate samples, the author applied online survey, which may contain potential errors. Dilution constitutes the final factor. With the limitations of sample size, the results shall slightly alter under different circumstances.

5. Significance of the Study

This research applies the model to analyze stages of development in the four study sites. Additionally, this research provides insight of tourism impacts and tourism development in offshore islands nearby Taiwan; therefore, managers or policy makers can monitor the destination development, thus formulating better policies.

CHAPTER TWO LITERATURE REVIEW

The chapter consists two main themes: TALC model and tourism impacts. In the first part, a brief introduction of TALC model is given firstly. Later on, a recollection of TALC research would be later discussed by its methods and variables. Besides, the second part of tourism impacts and QOL would be given brief introductions, variables and empirical studies respectively.

1. Tourist Area Life Cycle (TALC) Model

The tourist area life cycle (TALC) model is known as a conceptual model derived from product life cycle (PLC) which indicates the lifecycle for a product over time (Levitt1965; Vernon 1966). In 1960s, PLC model was applied in tourism research based on the concept, which tourism was another type of product fitting a life cycle in the market (Martin and Uysal 1990; Tooman 1997). It was also widely accepted that W. Christaller observed a progression in a tourist site which may follow the concept of evolution in 1963. Later, R.W. Butler created a more concrete depiction by conceptualizing evolution. Since then, more and more researchers developed different methodologies to interpret TALC model. The essence in TALC model can be traced back to the theory of evolution cycle (Butler 1980, 2004; Crompton et al. 1987; Meyer-Arendt 1985). Likewise, tourist area life cycle (TALC) model defines the

degree of development involved in tourism destination with two factors: time and number of tourists. This model examines tourist area development from growth to decline; moreover, the concept has been widely applied in the tourism industry. TALC model was first proposed by R.W. Butler (1980). Butler discovered a trend in a tourist site representing an S-curve with six stages: exploration, involvement, development, consolidation, stagnation, and post-stagnation stages. The conceptual graph is shown below.

Once a destination experiences tourism development, only a few tourists come due to lack of access, facilities, and local knowledge, and researchers defined this stage as “exploration.” With more people involved in this destination, the destination becomes more familiar to tourists; accordingly, the stage moves to “involvement.” The state of involvement keeps happening because the destination attracts more tourists, thus improving the amenities. Researchers regard this stage as “development stage,” in which the destination grows rapidly. After that, if the development reaches theoretical carrying capacity (see Fig. 2-1), so the development slows down at “consolidation stage” owing to social and environmental limits. Next comes “stagnation,” the following stage, in which the development maximized in the destination. After stagnation, the development would go to decline stage which is shown by dotted lines. For line A or B, the destination undergoes rejuvenation due to

technological developments or infrastructure improvements. As for C and D, congestion and unsustainable development leads the destination to fail. The line E implies the destination may encounter disasters or crisis.

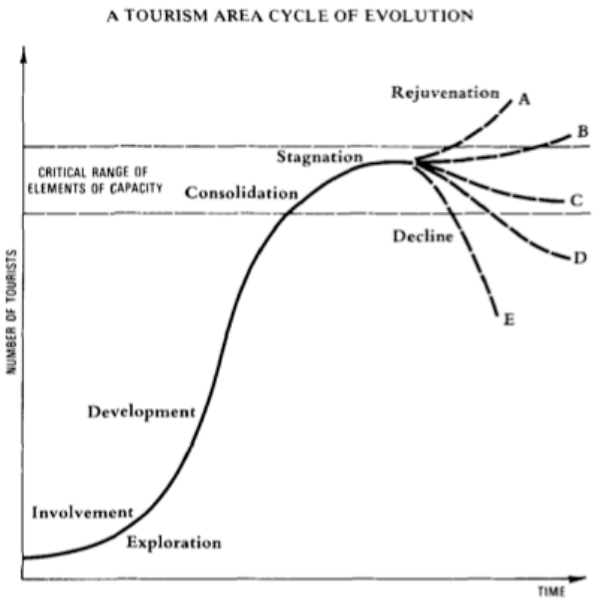


Fig. 2-1 Tourism Area Life Cycle Model

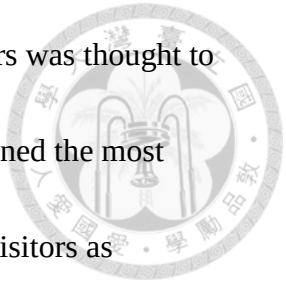
(Source: Butler, 1980)

The measurement for the TALC model varies from case to case. Basically, there are several indicators, specifically capacity, satisfaction or congestion, and quality of life (QOL). With the help of the TALC model, researchers can obtain the further understanding of tourism industry, thereby formulating optimum and seek better strategies for management. TALC model could be implied as a flow from PLC model to TALC model. TALC model was derived from PLC model; Butler extended the

essence to tourism development by adding the concept of evolution. After that, tourism studies modified TALC model and consequently made it more practical instead of rather than just a conceptual model. The indicators applied were number of visitors, qualitative research, economic conditions, and residents' perceptions.

It was Christaller (1963), who set up a milestone in tourism research. After Christaller, evolution concept was incorporated into tourism studies. Different approaches were applied to further investigate the development toward a specific location. Plog (1974, 2001) proclaimed that psychology of travelers may influence the fluctuation of a tourist area. According to Plog's study, three types of tourists are identified: as alloentric, the midcentric, and the psychocentric. The characters would be related to different stages of development. However, Crompton and Hensarling (1978) emphasized maximum effectiveness with regard to tourism development by contemplating managerial responses to different development stages, which could be applied to improve the services in park management.

After 1980, Butler recollected and encompassed PLC model into tourist area life cycle (TALC) model. Butler used the number of tourists as well as the level of infrastructure to identify the development stages of a particular tourist area. Moreover, he portrayed the concept with an S-shaped curve, and the curve influenced greatly among recent research.



However, based on Butler's TALC model, the number of visitors was thought to be one convenient indicator. Furthermore, the indicators taken remained the most celebrated ones in the field. Most studies thought of the number of visitors as indicators (Hovinen 1982; Haywood 1986; Strapp 1988; Copper and Jackson 1989; Debbage 1990; Ioannides 1992; O'Hare and Barrett 1997; Agarwal 1997; Douglas 1997; Knowles and Curtis 1999; Hovinen 2002; Boyd 2006). Haywood (1986) applied tourist arrivals and annual growth rates as main indicators to detect the development stages. In addition, the upper bound and lower bound of each stage were not only decided by highest or lowest 5% of tourist number, but also connected with the mean of tourists and standard deviation of tourist arrival growth rates. As opposed to Haywood (1986), Strapp (1988) argues that the average length of stays is more persuasive than the number of visitors.

Apart from the number of visitors, carrying capacity constitutes another crucial determining factor. Hovinen (1982) used physical and psychological carrying capacity to analyze whether the study site underwent evolution. Following Hovinen, Meyer-Arendt (1985) also applied carrying capacity to explicate tourism development stages. Debbage (1990) made a step further by utilizing industrial organization with a view to proving that industrial organization was not the major concern of TALC. However, Cole (2011) focused on synergy and congestion which would vary across tourism

styles and time. Cole established a model with TALC which could demonstrate destination growth. Because of this, researcher could possibly realize that the role of carrying capacity could be another reliable indicator and method when TALC model was employed.

Furthermore, Toh et al. (2001) realized the importance of economic power. Their studies differed from that of other researchers. Toh et al. (2001) advanced travel balance approach (TBA) as an improvement for Haywood (1986). The findings of Haywood (1986) were basically based on statistical analysis; conversely, Toh et al. (2001) implied economic development of the country as basis with actual tourism development together. Toh et al. (2001)stated export and import values to frame four development stages. To put simply, export would exceed import and later decline in the whole life cycle. Singal and Uysal (2009) took visitors log, sales tax, and other receipts to evaluate tourism growth in the study site. Hovinen (2002), Whitfeild (2009) both showed the importance in economic power, and they all declared the importance in tourism revenues.

On the other hand, some other researchers emphasized qualitative research. Getz (1992) used spatial perceptive secondary data analysis, interviews, and survey to understand the development. Harrison (1995) also reviewed newspaper and extensive library research. Douglas (1997) however, applied historical method to evaluate

tourism development. Particularly, Tooman (1997) applied both qualitative and quantitative to comprehend the situation in the study site.

Last of all, some researchers also regarded residents significant in the research. Zhong et al. (2008) as well as Diedrich and Garcia-Buades (2009) display resident perception to fill up the gap of tourists and residents. Kim, Uysal, and Sirgy (2012) later found the link residents' perceptions of tourism impact with residents' life satisfaction. Residents' perceptions, inclusive of perceived tourism impacts and quality of life, could be influenced by different degree of tourism development (Allen, et al., 1988; Johnson, Snepenger, & Akis, 1994; Madrigal, 1993; Perdue, et al., 1991). Although TALC remains a conceptual model, TALC model is believed to be unequivocal clear and useful (Richardson 1986; Johnson and Snepenger 1993; Tooman, 1997; Oppermann 1998; Formicaand Uysal 1996; Lundtorp & Wanhill, 2001; Hovinen 2002; Boyd 2006; Zhong et al., 2008; Whitfeild 2009; Singal and Uysal 2009).

Empirical Studies

In the previous section, a number of TALC were analyzed based on academic literatures. Most researchers approved TALC model a prodigious concept for understanding tourism development. However, TALC seemed to be more than just a

concept. In the future, TALC could be a practical model to investigate tourism development.

Firstly, Keller (1987) found out necessities in tourism services, namely manpower and hospitality when applying TALC model in the study site. Getz (1992) contended that managers should accentuate monitoring and forecasting in the study site. Similarly, O'Hare and Barrett (1997) also regarded TALC model as a monitoring and forecasting tool for managers to understand the best strategies in management. Moreover, Tooman (1997) thought that applying TALC model in policy making could control growth and emphasize economic diversity for better beneficial tourism development. In the same vein, Zhong et al. (2008) alleged that TALC model could significantly assist park development in considerable stage. Additionally, Singal and Uysal (2009) maintained that balancing both supply and demand sides were important in development. On the contrary, Diedrich and Garcia-Buades (2009) indicated that residents' perception of tourism impacts may account for the decline of destination. To put it briefly, TALC model could be remarkably effective in decision making, monitoring, forecasting, and tracing back the development in the past, an important component in the field of tourism management.

To sum up, tourism development management, and decision making are inextricably intertwined. Although TALC model may not precisely depict or forecast

potential problems, TALC model still remains an effective tool for understanding tourism development.

Table 2-1: Reported empirical studies of TALC related research

Method/Measure	Author/Year	Indictors	Findings
Number of Visitors	Hovinen (1982)		Evolution of tourism development took place in the study site.
	Strapp (1988)		The average length of stays is more persuasive than the number of visitors.
	Debbage (1990)	industrial organization	TALC neglects industrial organization.
	Ioannides (1992)	accommodation, tourism receipts, types of tourists and arrivals	Focus on authorities and investment.
	O'Hare and Barrett (1997)	international tourists	TALC model is useful for analyzing and portraying the development for tourism industry.
	Agarwal (1997)		Unit of analysis is vital in the study; furthermore, operating the TALC model is not easy.
	Knowles and Curtis (1999)		Post-stagnation stages could be explained by TALC.
	Hovinen (2002)	tourist arrivals and gross sales for individual businesses	Accurate description for "maturity" stage.
	Boyd (2006)		The TALC can be a powerful guide to trace park

			development.
Carrying Capacity	Hovinen (1982)	physical and psychological carrying capacity	Evolution of tourism development took place in the study site.
	Meyer-Arendt (1985)		TALC could explicate the development of the study site.
	Debbage (1990)	industrial organization	TALC neglects industrial organization.
	Cole (2012)	discussion of agglomeration and clustering	Synergy and congestion vary across tourism styles and time.
Economic	Ioannides (1992)	accommodation, tourism receipts, tourist type, and arrivals	Focus on authorities and investment.
	Toh et al. (2001)	travel balance approach (TBA)	The research mentioned export and import to frame four development stages.
	Hovinen (2002)	tourist arrivals and gross sales for individual businesses	Precise description for “maturity” stage.
	Singal and Uysal (2009)	visitors log, sales tax, and other receipts	Balance of supply and demand in tourism market is necessary.
Qualitative Research	Getz (1992)	Existing documents, interviews, field and map observations and a questionnaire	The study site is in maturity stage; planners and managers should take monitoring and forecasting seriously.

	Harrison (1995)	Structured questionnaires, basic data on the country's tourism industry, unstructured interviews, newspaper, and extensive library research	Tourism development in Swaziland does not fully correspond Butler's TALC model.
	Douglas (1997)	Historical method and data analysis.	TALC explains evolution of the second and third economic impact. Also, the importance of control growth and economic diversity are analyzed.
	Tooman (1997)	Qualitative and quantitative indicators	The TALC application to colonial and postcolonial societies may not reflect actual situation.
Residents'/Tourists' Perspective	Allen, et al. (1988)		Tourism impacts and quality of life could be influenced by different degree of tourism development.
	Perdue, et al. (1991)		
	Madrigal (1993)		
	Johnson, Snepenger and Akis (1994)		
	Diedrich and Garcia-Buades (2009)		Residents' perception of tourism impacts is an indicator of destination decline.
	Zhong et al. (2008)	Visitors and residents' perception of	TALC model could help park development to be in considerable stage.

		tourism development, secondary data analysis	
	Kim, Uysal and Sirgy (2012)		Residents' perceptions of tourism impact with residents' life satisfaction had a link in between.
Combination	Keller (1987)	roles of entrepreneurs, authorities and tourists	Manpower and hospitality play an important role in tourism services.
	Copper and Jackson (1989)	mainly number of visitors and institutional attitudes toward tourism services and facilities	TALC model is useful for analyzing and portraying the development.
	Whitfeild (2009)	Number of venues opening and offering conference facilities	Theoretical extension of the TALC is applied to the four conference venue classifications.

(Source: Uysal, Wooand& Singal, 2012, chap. 25)

2. Tourism Impacts

Tourism impacts studies could be traced back to 1960s; positive impacts and later studied on negative impacts were studied (Jafari, 1986). Most commonly, tourism impacts could be discussed in three aspects: economic, socio-culture and environment. Every time when a destination experienced tourism development, it is also affected by both positive and negative impacts. In this section, researcher would

discuss both positive and negative impacts in these three dimensions.

Once a destination encountered tourism development, it may also be affected by tourism impacts. The studied tourism impacts among residents could be characterized into three groups as economic, socio-cultural and environmental impacts by benefits and costs (Allen, et al., 1988; Belisle & Hoy, 1980; Lankford & Howard, 1994).

The first group is economic; positive and negative impacts have been listed such as increasing income, job opportunities, tax, and inflation. Secondly, in socio-cultural aspect, researchers found out impacts like crime, crowding and community image, awareness of cultural pride and heritage, and improvement of cultural facilities. The last part is environmental; researchers noticed that congestion, pollution, wildlife destruction and improvement of local infrastructure could be positive or negative impacts (Andereck, 1994; Andereck & Jurowski, 2006; Jurowski, 1994; Marcouiller, 1997; Yu, 2011). With positive impacts, the well improved infrastructure, festivals, restaurants, natural and cultural attractions, and recreation/leisure opportunities could be found in an enhanced resident community, thus attaining higher quality of life (Belisle & Hoy, 1980; Liu, et al., 1987; Liu & Var, 1986; McCool & Martin, 1994; Perdue, et al., 1990).

On the other hand, negative impacts would influence resident community's quality of life. For example, crowding, traffic congestion, crime, increased cost of

living and conflict between tourists and residents were common impacts which influenced negatively (Andereck, 1994; Belisle & Hoy, 1980; Brunt & Courtney, 1999; Cohen, 1988; Lindberg & Johnson, 1997; Liu, et al., 1987; McCool & Martin, 1994; Perdue, et al., 1990; Pizam, 1978). With negative impacts, residents' quality of life could be deteriorated (Allen, et al., 1993; Andereck & Nyaupane, 2010; Andereck, Valentine, Vogt, & Knopf, 2007; Andereck & Vogt, 2000; Liu, Sheldon, &Var, 1987).

Economic Impacts

Most conspicuously, higher tax revenues, increased job opportunities, additional incomes are all common and notable indicators for residents' quality of life under tourism impacts. However, tourism development also brought negative impacts such as inflation. Empirical studies showed positive impacts such as higher tax revenues (Haralambopoulos & Pizam, 1996; Milman & Pizam, 1988; Tyrrell & Spaulding, 1984), increased job opportunities (Belisle & Hoy, 1980; Liu & Var, 1986; Milman & Pizam, 1988; Pizam, 1978; Sheldon & Var, 1984; Tyrrell & Spaulding, 1984; Weaver & Lawton, 2001), additional incomes (Liu, et al., 1987; Prentice, 1993), more investments (Akis, et al., 1996; Belisle & Hoy, 1980; Liu & Var, 1986; Milman & Pizam, 1988; Sheldon & Var, 1984), improving local economy (Akis, et al., 1996; Allen, et al., 1988; Perdue, et al., 1990). Moreover, with the help of tourism

development, the destination may increase living standard or income and services (Belisle & Hoy, 1980; Haralambopoulos & Pizam, 1996; Lankford & Howard, 1994; Liu & Var, 1986; Milman & Pizam, 1988; Pizam, 1978; Tosun, 2002; Weaver & Lawton, 2001).

On the other hand, a destination may suffer from tourism development in several aspects such as inflation (Belisle & Hoy, 1980; Haralambopoulos & Pizam, 1996; Husbands, 1989; Liu, et al., 1987; Liu & Var, 1986; Pizam, 1978; Ross, 1992; Tosun, 2002; Weaver & Lawton, 2001), increasing price of real estate (Perdue, et al., 1990; Pizam, 1978; Ross, 1992; Tosun, 2002; Var, et al., 1985; Weaver & Lawton, 2001). Moreover, with better development of tourism, government would probably tax on residents more than before (Liu & Var, 1986; Perdue, et al., 1990; Ross, 1992).

Table 2-2: Reported empirical studies of economic impacts

Impacts	Studies
Economic (positive)	
Improving local economy	(Akis, et al., 1996; Allen, et al., 1988; Perdue, et al., 1990)
Increasing stand-of-living/income/ economic quality of life	(Belisle & Hoy, 1980; Haralambopoulos & Pizam, 1996; Lankford & Howard, 1994; Liu & Var, 1986; Milman & Pizam, 1988; Pizam, 1978; Tosun, 2002; Weaver & Lawton, 2001)
Employment	(Belisle & Hoy, 1980; Liu & Var, 1986; Milman & Pizam, 1988; Pizam, 1978; Sheldon & Var, 1984; Tyrrell & Spaulding, 1984; Weaver & Lawton, 2001)
Profitable local businesses	(Liu, et al., 1987; Prentice, 1993)
Investments	(Akis, et al., 1996; Belisle & Hoy, 1980; Liu & Var, 1986; Milman & Pizam, 1988; Sheldon & Var, 1984)
Tax revenue	(Haralambopoulos & Pizam, 1996; Milman & Pizam, 1988; Tyrrell & Spaulding, 1984)
Improving infrastructure and services	(Belisle & Hoy, 1980; Liu & Var, 1986)

Economic (negative)	
Inflation of goods and services	(Belisle & Hoy, 1980; Haralambopoulos & Pizam, 1996; Husbands, 1989; Liu, et al., 1987; Liu & Var, 1986; Pizam, 1978; Ross, 1992; Tosun, 2002; Weaver & Lawton, 2001)
Increasing price of land and housing	(Perdue, et al., 1990; Pizam, 1978; Ross, 1992; Tosun, 2002; Var, et al., 1985; Weaver & Lawton, 2001)
Increasing tax	(Liu & Var, 1986; Perdue, et al., 1990; Ross, 1992)

(Source: Yu, 2011)

Socio-cultural Impacts

Tourism development also affect the community's cultures and social status. Obviously, tourism helped the community improving quality of fire/police protection or quality of life (Belisle & Hoy, 1980; Liu, et al., 1987; Milman & Pizam, 1988; Dogan, 1989; McCool & Martin, 1994; Perdue, et al., 1990; Pizam, 1978; Ross, 1992; Perdue, et al., 1990). Moreover, tourism development also brought cultural exchange (Akis, et al., 1996; Belisle & Hoy, 1980; Keogh, 1989; Liu, et al., 1987; Liu & Var, 1986), increasing availability of recreation facilities/opportunities (Belisle & Hoy, 1980; Liu, et al., 1987; McCool & Martin, 1994; Perdue, et al., 1990; Pizam, 1978; Ross, 1992) and increasing demand for historical and cultural exhibits (Liu & Var, 1986). Tourism development could also preserve cultural identity (Liu & Var, 1986; Pizam, 1978), provide educational experience (Liu, et al., 1987; Liu & Var, 1986) and improve understanding through different cultures (Liu, et al., 1987; Liu & Var, 1986; Milman & Pizam, 1988; Pizam, 1978).

However, tourism development may disturb residents' living in several aspects.

For one thing, congestion (Akis, et al., 1996; Brunt & Courtney, 1999; Lindberg & Johnson, 1997; Liu & Var, 1986; Long, et al., 1990; McCool & Martin, 1994; Prentice, 1993; Rothman, 1978; Tyrrell & Spaulding, 1984) would be the most apparent problem. Secondly, illegal act such as crime (Belisle & Hoy, 1980; Brunt & Courtney, 1999; Cohen, 1988; Haralambopoulos & Pizam, 1996; King, et al., 1993; Lankford & Howard, 1994; Lindberg & Johnson, 1997; Liu, et al., 1987; Liu & Var, 1986; Milman & Pizam, 1988; Tosun, 2002), drug use/addiction and alcoholism (Haralambopoulos & Pizam, 1996; King, et al., 1993; Tosun, 2002) and sexual permissiveness (King, et al., 1993) were common negative impacts observed by researchers. For another thing is the degeneration of cultures. Researchers have found out culture commercialization in a destination after undergoing tourism development (Ap & Crompton, 1993; Cohen, 1988; Liu & Var, 1986; Weaver & Lawton, 2001).

Table 2-3: Reported empirical studies of socio-cultural impacts

Impacts	Studies
Socio-cultural (positive)	
Increasing availability of recreation facilities/opportunities	(Belisle & Hoy, 1980; Liu, et al., 1987; McCool & Martin, 1994; Perdue, et al., 1990; Pizam, 1978; Ross, 1992)
Improving quality of fire/police protection	(Keogh, 1989; Milman & Pizam, 1988; Pizam, 1978)
Increasing availability of entertainment/cultural activities	(Liu & Var, 1986)
Improving quality of life	(Dogan, 1989; Milman & Pizam, 1988; Perdue, et al., 1990; Pizam, 1978)
Improving understanding and	(Liu, et al., 1987; Liu & Var, 1986; Milman &

image of different communities/culture	Pizam, 1988; Pizam, 1978)
Enables meeting visitors (an educational experience)	(Liu, et al., 1987; Liu & Var, 1986)
Increasing demand for historical and cultural exhibits	(Liu & Var, 1986)
Promoting cultural exchange	(Akis, et al., 1996; Belisle & Hoy, 1980; Keogh, 1989; Liu, et al., 1987; Liu & Var, 1986)
Preserving cultural identity	(Liu & Var, 1986; Pizam, 1978)
Socio-cultural (negative)	
Congestion	(Akis, et al., 1996; Brunt & Courtney, 1999; Lindberg & Johnson, 1997; Liu & Var, 1986; Long, et al., 1990; McCool & Martin, 1994; Prentice, 1993; Rothman, 1978; Tyrrell & Spaulding, 1984)
Increasing crime	(Belisle & Hoy, 1980; Brunt & Courtney, 1999; Cohen, 1988; Haralambopoulos & Pizam, 1996; King, et al., 1993; Lankford & Howard, 1994; Lindberg & Johnson, 1997; Liu, et al., 1987; Liu & Var, 1986; Milman & Pizam, 1988; Tosun, 2002)
Increasing drug use/addiction and alcoholism	(Haralambopoulos & Pizam, 1996; King, et al., 1993; Tosun, 2002)
Increasing sexual permissiveness	(King, et al., 1993)
Culture commercialization	(Ap & Crompton, 1993; Cohen, 1988; Liu & Var, 1986; Weaver & Lawton, 2001)

(Source: Yu, 2011)

Environmental Impacts

Environment could be changed and affected by human activities, so tourism development could also alter a destination's environment. Researchers have found not only negative impacts but also positive impacts. Once a destination underwent tourism development, it must sacrificed its environment. For example, pollution was the most evident impacts for a destination (Andereck, 1994; Pizam, 1978). Moreover, ecological degradation was also a severe problem for a destination (Andereck, 1994; Kendall & Var, 1984; Liu & Var, 1986); throughout unlimited development,

researchers also found littering and solid waste in the destination (Brunt & Courtney, 1999; Lankford & Howard, 1994).

Yet, tourism development could also inspire environmental senses thus improving host area's appearance (Perdue, et al., 1987, 1990) or else help local community in environment and wildlife protection and improvement (Belisle & Hoy, 1980; Liu, et al., 1987; Liu & Var, 1986). Besides, tourism development could also preserve historic buildings (Liu, et al., 1987; Sheldon & Var, 1984) and provide recreation facilities and opportunities (Liu, et al., 1987; Liu & Var, 1986; McCool & Martin, 1994; Perdue, et al., 1990).

Table 2-4: Reported empirical studies of environmental impacts

Impacts	Studies
Environmental (positive)	
More leisure/recreation facilities and opportunities	(Liu, et al., 1987; Liu & Var, 1986; McCool & Martin, 1994; Perdue, et al., 1990)
Environment/wildlife protection and improvement	(Belisle & Hoy, 1980; Liu, et al., 1987; Liu & Var, 1986)
Improving host area's appearance	(Perdue, et al., 1987, 1990)
Preservation of historic buildings	(Liu, et al., 1987; Sheldon & Var, 1984)
Environmental (negative)	
Traffic congestion/crowding	(Andereck, 1994; Brunt & Courtney, 1999; Lindberg & Johnson, 1997; Liu, et al., 1987; McCool & Martin, 1994; Perdue, et al., 1990; Pizam, 1978)
Pollutions	(Andereck, 1994; Pizam, 1978)
Ecological degradation	(Andereck, 1994; Kendall & Var, 1984; Liu & Var, 1986)
Littering/solid waste	(Brunt & Courtney, 1999; Lankford & Howard, 1994)

(Source: Yu, 2011)

3. Community Quality of Life

Quality of life is also abbreviated as QOL which examine various aspects and levels of people's lives and environments it encompasses (Schalock, 1996). To evaluate QOL, both subjective and objective perspectives are under studies (Sirgy, Meadow, and Samli 1995; Sirgy, Rahtz, Cicic, and Underwood 2000), so scholars proposed a variety of QOL definitions and models.

At first, bottom-up spillover theory is established as a compound of several domains of satisfaction aggregating from its sub domains, and all the domains can be added up to global life satisfaction (Andrew and Withey 1976; Campbell, Converse, and Rodgers 1976; Diener 1984; Sirgy et al., 2000). Afterward, Philips (2006) noted 3 non-mutually exclusive items, happiness, life satisfaction and subject well-being, are near to form up QOL. Later, Sirgy et al. (2000) linked up individuals' QOL to their life satisfaction. So, based on bottom-up spillover theory the aggregation of every domain of satisfaction in a community can form up QOL to global life satisfaction.

Continue with global life satisfaction, Sirgy and Cornwell (2001) extended the concept by summing up three domains: global community services satisfaction, global satisfaction of community conditions and global satisfaction with other life domains. More precisely, community services can include satisfaction with government

services, business services and nonprofit services (Sirgy and Cornwell 2001; Sirgy, et al. 2000). Following, satisfaction of community conditions also include quality of the environment, change to the natural landscape, cost of living, crime, ties with people, neighborhood situation and the housing situation (Sirgy and Cornwell 2001). Besides, some other scholars concluded QOL as socio-economic and environmental indicators to examine livability as well as desirability of the region (Epley and Menon 2008; Sirgy and Cornwell 2001; Sirgy, et al. 2000).

Above all, most topic studying QOL in community are based on services and conditions. For one thing, community conditions can be regarded as socio-economic and environmental indicators to one community such as crime and safety, recreational and entertainment activities, infrastructure, traffic condition, parks, job opportunities, and taxes (Grzeskowiak, et al. 2003; Yu, 2011). On the other hand, community services includes government services (police, fire/rescue, library), business services (banking/savings, insurance, department stores), and non-profit services (alcohol/drug abuse services, crisis intervention, religious services) that are potentially influenced by tourism development (Grzeskowiak, et al. 2003; Yu, 2011).

Empirical Studies

There are existing communities which first fully supported tourist development but later oppose it only to find out that living costs may degrade residents' quality of

life(Liu and Var 1986). Thus, economic benefits may not reflect residents' QOL because of deterioration in social or physical environments (Jurowski and Gursoy 2004; Roehl 1999). In short, residents' QOL may be influenced by tourism impacts among socio-cultural, environmental and economic aspects. As a result, the relationships between tourism have been extensively noticed.

With this perception, Allen and colleagues (1988) found out residents' perceptions of community life satisfaction changed in different level of tourism development. The study investigated residents' perceptions of importance and satisfaction of QOL by adopting 33-indicators with seven community life dimensions such as public service, formal education, environment, recreation opportunities, economics, citizen involvement and social opportunity, and medical service (Allen and Beattie 1984; Allen, et al. 1987; Allen, et al. 1988; Yu, 2011).

Moreover, Roehl (1999) investigate relationships among resident characteristics, perceptions of the impacts of gaming, and QOL in Nevada. Roehl found that social costs were negatively correlated with QOL, but job growth was positively correlated with QOL.

Later in 2002, Ko and Stewart found that residents' overall community satisfaction was related to both positive and tourism impacts. Similarly, Vargas-Sanchez et al. (2009) had comparable findings. However, Ko and Stewart did not

explain abundantly about the relationship between overall community satisfaction and resident attitude on additional tourism development.

Next, Nunkoo and Ramkissoon (2010a, 2010b) found that overall community satisfaction has relationships with community conditions. Also, satisfaction with community services could be seen as community support for tourism development. In recent times, Kim, Uysal and Sirgy (2013) implied that particular tourism impacts on life domains may also influenced overall satisfaction.

In sum, QOL of a community could be affected by both positive and negative impacts; as a result, not only tourism practitioners but also tourists are responsible in residents' QOL. Studies has shown that both positive and negative tourism impacts would influence community conditions in different ways (Andereck 1994; Belisle and Hoy 1980; Brunt and Courtney 1999; Lankford and Howard 1994; Liu, et al. 1987; Liu and Var 1986; McCool and Martin 1994; Perdue, et al. 1987, 1990; Pizam 1978). Similarly, positive and negative tourism impacts would also influence community services in different ways (Ap 1990; Ap 1992; Ap and Crompton 1998; Belisle and Hoy 1980; Brunt and Courtney 1999; Keogh 1989; Lankford and Howard 1994; Liu and Var 1986; Milman and Pizam 1988; Pizam 1978).

CHAPTER THREE METHODOLOGY

This research aims to investigate tourism development in offshore islands and explore tourism impacts toward different developing stages. Firstly, researcher would fist discuss our four study sites, Penghu, Little Liuqiu, Green Island and Orchid Island and give all general and detailed information. Next, researcher would apply Delphi panel and survey in data analysis; besides, the investigation for tourism development and impacts are surveyed in the second stage. In this chapter, brief introduction of the four study sites may first be given. Later on, the methods applied as quantitative approaches would be more clearly familiarized.

1. Study Site

All of our study sites are islands surrounding around Taiwan. Recently, tourism has already become an important income for offshore islands in Taiwan. According to official statistics (Ministry of Household, 2013), about 121 islands can be included in the territory of Taiwan (National Development Council, 2009). Although many islands scattered around, only a few of them possess residents[1]. Varying from landscapes, ecology, culture and society, every single island owns spectacular attractions for tourists. Besides, the serenity causes the islands difficult in

[1] Although some desert islands are also familiar for tourists, researcher would not discuss in this section.

development. Once tourism enters in the offshore islands, it brings not only better chances but also improvements in living standards for the residents. Then, tourism gradually develops and is more likely to replace employment structure in the offshore islands. Consequently, balancing between tourism developments as well as maintaining public goods such as environment and cultural heritage strike an important concern in offshore public construction (National Development Council[2], 2009).

Sustainable development states an important role in offshore general public construction programs[3]. Based on our four study sites, Penghu, Little Liuqiu, Green Island and Orchid Island, local government planned for further tourism development as follow. Penghu planned to be an international island because of its special but important location in Taiwan Strait[4]. Little Liuqiu planned to cultivate as the educational and recreational island[5]. Green Island used its character “Green” to emphasize the importance of sustainable development[6]. Orchid Island specified its specialties as “hometown for aboriginals.[7]” Thus, sustainable development has become an important issue in offshore islands.

[2] 前經濟建設委員會，後併入國家發展委員會。
[3] 第二期（96-99 年）、第三期（100-103 年）離島綜合建設實施方案 translated by researchers.
[4]「國際島嶼，海上明珠」
[5]「海上休習(休閒與學習)島」
[6]「永續海洋生態與綠色旅遊產業島嶼」
[7]「原住民海洋原鄉」

Background of Penghu

Penghu islands (23°12 to 23°47 N, 119°19 to 119°43 E) are also well known for Pescadores Islands, the islands are an archipelago lying in the west of Taiwan. Penghu occupies the entire archipelago and forms Penghu County. Penghu County covers 141 square kilometers; most remarkable, there are over 90 islands scattered around Penghu (Ministry of Household, 2013). Recently, according to statistics, Penghu has more than 90,000 residents (Ministry of Household, 2013).

Tourism development in Penghu has lasted for decades. After World War II, Penghu started public constructions so as to improve living standards. In early 1950s, Penghu underwent a series of reconstructions, there were limited spaces for tourism development. The limitations came from military control and lack of public infrastructure and services. Consequently, the 50s seemed to be Penghu's reconstruction period. Later in late 1950s to 1970s, tourism in Penghu started to develop. Later in 1980s and 1990s, tourism became an important role in Penghu (Chuang, 2012).

Recently, Penghu National Scenic Area was founded and had 3 recreation areas: North Sea recreation area (北海遊憩系統), Magong Island Recreation Area (馬公本島遊憩系統) and South Sea recreation area (南海遊憩系統). Although Penghu is well known a destination for summer vacation, potential limitations cutback its

development. For one thing, the monsoon in Penghu is so strong that tourists cannot stand the wind. For another, the limited transportation also drawback development (National Development Council, 2009).

Background of Little Liuqiu

Little Liuqiu is governed by Liuqiu Township in Pingtung County. Besides, Little Liuqiu is the only one coral island of Taiwan's offshore islands suited south of Kaoping River. Recently, about 13,000 residents Live on little Liuqiu (Ministry of Household, 2013). Besides tourism, fishing is another important industry in Liuqiu.

Little Liuqiu is famous for coral ecosystem and aquatic activities, and in summer times, Little Liuqiu is on season. Besides, Little Liuqiu is also renowned for cultural resources, especially Taoist festivals which celebrates and honors Wong Ye (王爺).

Recently, Little Liuqiu becomes a well-known destination, but restricted lands and transportations limit tourism development. In addition, the management also need improvements. Finally, with the rapid development, Little Liuqiu needs more investigations in tourist spots and monitoring to prevent the irreversible damages in nature resources (National Development Council, 2009).

Background of Green Island

Green Island is a small volcanic island about 33 km (21 mi) off the eastern coast of Taiwan. Recently, there are more than 3500 residents on the island (Ministry of

Household, 2013). Green Island is famous for the nature resources.

In early19th century, immigrants from Liuqiu settled down and established villages. The industries on the islands remained primary industrial sectors such as farming, forestry, livestock and fishing sectors for a long time. In 1990s, tourism industry surpassed other industries to be the most important ones. With the help of tourism development, the residents living has improved (Lee, 2001).

In 1990, Green Island was included in East Coast National Scenic Area. Later on, the infrastructures such as water, electricity and airport has enhanced. Moreover, the tourists started increasing in 1990s, and most residents rely on tourism for living (Su, 1995).

Background of Orchid Island

Orchid Island is a 45 km² high island off the southeastern coast of Taiwan. Recently, more than 5000 residents living on the island (Ministry of Household, 2013). Besides aboriginal cultures, Orchid Island is also famous for nature resources.

The aborigines, Tao has lived on the island for centuries. Tao's industries on the islands remained primary industrial sectors such as farming (mainly slash and burn), livestock and fishing sectors for a long time. Besides tourism, the industries on the island still remain farming (mainly slash and burn), livestock and fishing; most interesting, women and men work cooperatively. Likewise, the flying fish is

considered the most important food which is necessary for aboriginal festivals.

Tourism development in Orchid Island remain slow and steady. Because of rich nature natural and cultural tourism resources, Orchid Island seems to have potential in tourism. However, the limitation of transportation, qualities of accommodations and lack of infrastructures put a sever drawback in development. As a result, the balance of conservation and development still remain a great problem (Chen, 2007).

2. Research Design

In this research, researcher aimed at exploring tourism development stages as well as investigating tourism impacts and community QOL. Thus, researcher divided the research into two steps, secondary data analysis and survey.

Firstly, secondary data analysis is used to explore tourism development stages based on Tourism Area Life Cycle (TALC) model (Butler 1980, Haywood, 1986; Toh et al., 2001; Kim, Uysal, & Sirgy, 2012). Besides secondary data analysis, Delphi was applied in survey of researchers. The conceptual graph of TALC model (Butler 1980) was given for the participants to portray the development stages in order to prevent misleading.

On the other hand, tourism impacts were mainly focused on the impacts brought by tourism development. For all indicators investigating tourism impacts, researchers

evaluated all items from present empirical studies (Dyer, et al., 2007; Ko & Stewart, 2002; Lankford & Howard, 1994; Liu & Var, 1986; Milman & Pizam, 1988; Perdue, et al., 1987; Vargas-Sánchez, et al., 2009; Yu, et al., 2009). Then, all the included impacts could be composed of economics, environment, culture and community QOL. However, for more detailed indicators for impacts on residents, researchers also analyze community services, community conditions and satisfaction in living qualities. In addition, all involved indicators were developed from previous studies (Andereck & Nyaupane, 2010; Dyer, et al., 2007; Ko & Stewart, 2002; Lankford & Howard, 1994; Liu & Var, 1986; Milman & Pizam, 1988; Perdue, et al., 1987; Sirgy & Cornwell, 2001; Sirgy, et al., 2000; Vargas-Sánchez, et al., 2009; Yu, et al., 2009). As for measuring tourism impacts, the survey in Delphi panel encompassed items of tourism impacts in economics, environment, culture, community services, community conditions and satisfaction in living qualities. The measurement was designed as a checklist about the impacts. After second check from Delphi panel, researchers provided online survey systems for residents and tourists. Moreover, the survey contained scales of importance, satisfaction, and perceived tourism effect rating (Yu, et al., 2009). All the respondents for surveying must rate both importance (1 to 5, from not important at all to extremely important) and satisfaction (1 to 5, from not at all satisfied to extremely satisfied) with each indicator. Finally, for the effect of

tourism were graded from 1 to 5, and the rating symbolized the degree of tourism greatly decreases or tourism greatly increases (Yu, 2011).

The reasons why researcher implemented Delphi panel in the middle of investigation could be explained in two aspects. Firstly, Delphi could be used as a second check the results came out after secondary data analysis. Because TALC model was often brought out for tourism development stages conceptually, researchers tried to recheck whether our results were coincide with the professionals. Secondly, it has pretested the tourism impacts. Although a great amount of research indicated numerous possible impacts toward residents, using Delphi panel could validate measurement. The following figure illustrates research process.

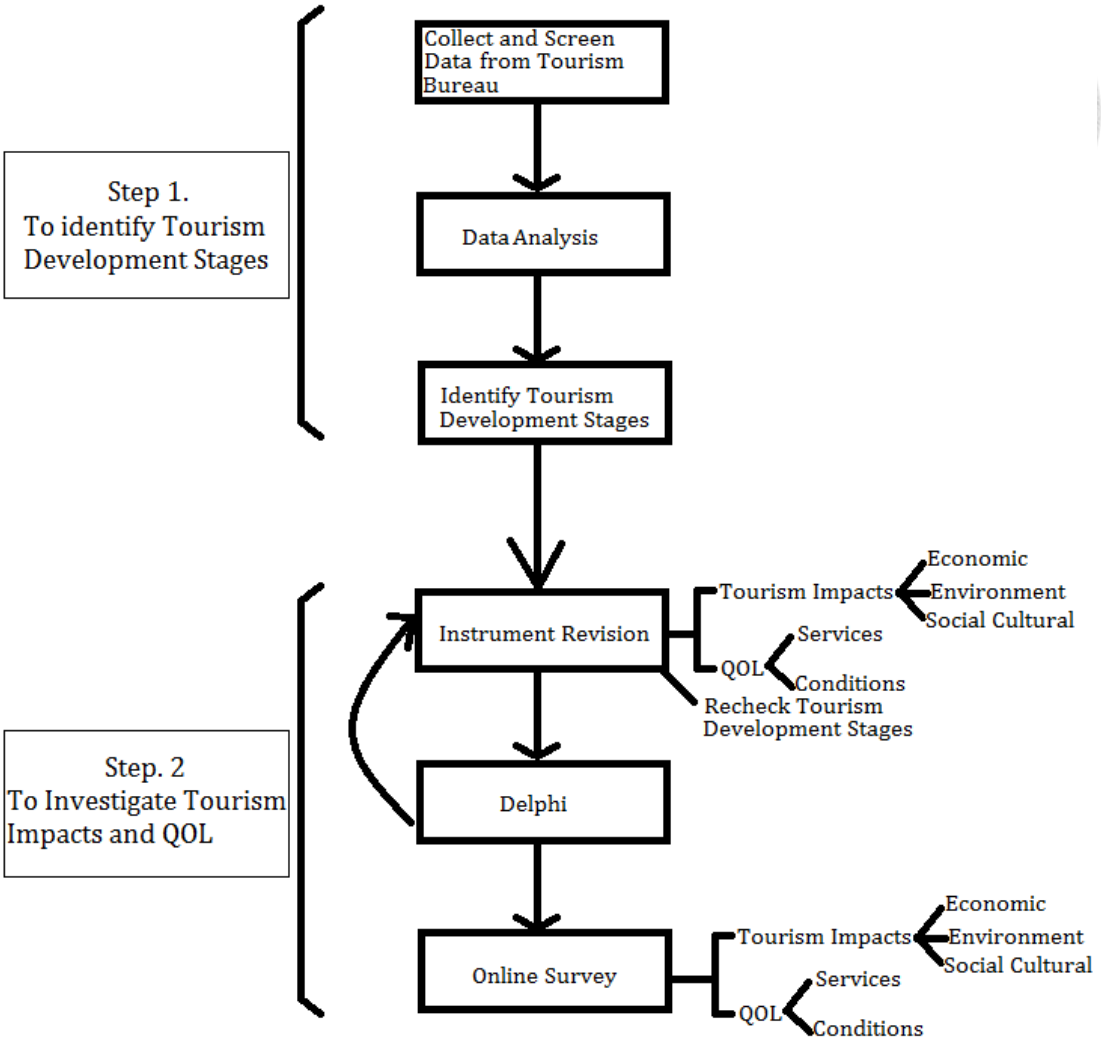


Fig. 3-1 Study Process

3. Data Collection

Secondary Data Analysis

From literature, Haywood (1986) indicated that stage identifications could be relied on the percentage of tourist arrivals and annual growth rate. Therefore, author used tourist numbers as the secondary indicator to cognize tourism development in the four study sites.

Firstly, data were collected from Tourism Bureau in Taiwan website to find out tourist numbers as for tourist arrivals. After visiting the database, researcher collected all data about visitors in the principal scenic spots from year 1986 to 2012 (Tourism Bureau, 2013). To run for TALC model, researcher identified the locations for every single spot and sorted them into the four study sites.

The second process is to understand the population shift so as to be another indicator for tourism impacts. In our research, researcher also observe population shift in the four study sites to understand the potential or existing impacts. The population data were from the Ministry of Household (http://www.ris.gov.tw/). All data were grouped by study sites chronically.

Delphi Panel

Delphi method is an organized expert panel for systematic, collaborative estimating insights toward one specific issue. Norman Dalkey, Olaf Helmer proposed a method in 1963, and the method relied on a panel of experts in two rounds. All experts involved were encouraged to propose their own thoughts without face to face. Mostly, Delphi method could be used in policy making, education and estimation (Rowe and Wright, 1999, 2000; Green, Armstrong, and Graefe, 2007).

To better understand tourism impacts, researcher formed up an expert panel for professional feedback. All candidates were selected into groups of the four study sites

based on their expertise. To construct Delphi Panel, the survey list was selected from National Digital Library of Theses and Dissertations in Taiwan. The participants for Delphi were professionals selected by research which must include at least one related study site. After selecting professionals, researchers acquired 35 people for Little Liuqiu, 58 people for Penghu, 11 people for Green Island and 5 for Orchid Island. The second step was to select randomly of the professionals for each study site. However, the sample for Orchid Island was not enough, researcher took general investigation instead of sampling. As a result, researcher invited 18 people for Little Liuqiu, 19 people for Penghu, 8 people for Green Island and 5 for Orchid Island. Yet, researcher only invited 8 people for Little Liuqiu, 19 people for Penghu, 8 people for Green Island and 5 for Orchid Island successfully. The last step was to generate an online survey system for Delphi panel respondents. The online survey system adopted was on Dosurvey.com (http://www.dosurvey.com.tw). At final, researcher distributed the invitation on 11th February 2014 and finished surveying on 31st March 2014.

In the aspect of tourism development, a given TALC graph led the subjects to answer in which the degree of tourism development was for each study site. The stages were divided into development, stagnation, decline and rejuvenation (Butler 1980; Haywood, 1986; Toh et al., 2001; Kim, Uysal, & Sirgy, 2012). Although theoretical TALC model encompassed 6 stages, researcher simplified into 4 so as to

eliminate vague answers. Besides, the Delphi survey conducted by reference of tourism impact studies as noted in previous section. About tourism impacts, all questions mainly contained positive and negative impacts with their details such as environmental, cultural, services and conditions.

However, in this study, there were two rounds survey. For one reason was that all researcher applied Delphi method as “pre-test.” Thus, Delphi panel was just another method to gather feedback in definite issues. Through doing Delphi, researcher could recollect all possible tourism impacts. The second reason was about research scale. Researcher defined this research as a prior study for cognizing the development and tourism impacts in offshore islands. In addition, researchers involved would list up different tourism impacts happening in different development stages. Therefore, Delphi panel was another approach of investigation in this study.

Online Survey

This research adopted online survey of tourism impacts toward local people and tourists in terms of their perceptions. Through this survey, researcher could better understand the differences and similarities of potential or existing impacts among each group. Finally, all data collected would go under analysis discussed below.

Survey Method

For tourism impacts online survey, researcher collected public contact

information and sent various emails for invitations of this survey. The survey was posted on Dosurvey.com, and divided into 4 individual surveys of each study site. In addition, researcher adopted volunteer online survey system for residents and tourists in the four study sites to provide their perceptions toward tourism impacts. To encourage more participants, researcher also cooperated with Pollster.com. Pollster.com is an online survey company which runs for market research. The survey was distributed by Pollster.com to its members which would be rewarded by bonus. At final, researcher also offer lottery for several gift certificate to thank for participants. Additionally, with the help of online survey company, researcher gained over 1004 samples in total.

While Zikmud (2003) recommended mail survey could be most effective for collecting a larger amount samples by spreading the survey geographical limitations in a short time, it was not possible for the researcher to finish under difficult circumstances. Instead, online survey system would be less expensive, more effective and time-saving (Davis, 1997; Dommeyer & Moriarty, 2000; Pitkow & Recker, 1995; Tse, 1998; Witte, Amoroso, & Howard, 2000); also, online survey system could be less offensive for Respondents (Walsh, Kiesler, Proull, & Hesse, 1992).

However, online survey system must went under specific design for improved reliability by eliminating sampling errors. Most researchers argued that online survey

system did not meet accessibility to reality. There were common errors such as coverage error, sampling frame and volunteer sample (Li, 2003).

4. Data Analysis

When it comes to data analysis, author may divide into three sections: secondary data analysis, Delphi panel and survey. In this part, researcher would deliberate these analysis respectively.

Secondary Data Analysis

In the first section, researcher tried to recollect all secondary data form Tourism Bureau, and the method used to run for descriptive statistics was Excel. In each study site, researcher focused on tourist arrivals growth rate (TAGR), mean of TAGR and standard deviation. Mostly, tourist arrivals growth rate could combine with standard deviation to identify the four stages in TALC model. (Haywood, 1986; Toh et al., 2001; Kim, Uysal, & Sirgy, 2012)

Table 3-1: Criteria calculation of tourism development stages

Terms	Descriptions
$M=\Sigma Ti^*/N$	Mean of TAGR
$\sigma=(\Sigma(Ti^*-M)^2/N-1)^{1/2}$	Standard Deviation of TAGR
Introduction stage	(M-0.5σ)~M
Growth stage	(M+0.5σ)~Highest TAGR
Maturity stage	M~(M+0.5σ)
Decline stage	Lowest TAGR~(M-0.5σ)

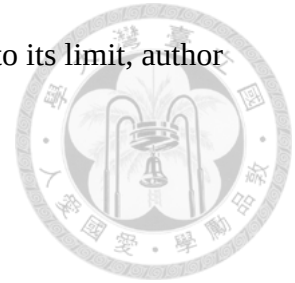
(Sources: Haywood, 1986; Toh et al., 2001; Kim, Uysal, & Sirgy, 2012)

Besides the TAGR and its standard deviation, the selection criteria in the previous studies mentioned above also implied the upper and lower bound for each stage. For beginning stage, researcher could depict the lower bound as the mean of TAGR minus 0.5 standard deviation of the TAGR, and researcher could also noticed the upper bound as the mean of TAGR. Then, maturity stage is defined as the mean of TAGR for lower bound and the mean of TAGR plus 0.5 standard deviation as the upper bound. Furthermore, in growth stage, researcher described the upper bound and the lower bound with the highest TAGR and TAGR plus 0.5 standard deviation respectively. Lastly, for the decline stage, the interval lied in the lowest TAGR to TAGR minus 0.5 standard deviation. By integrating tourism statistics, researcher could categorize the four intervals of TAGR. As a result, these intervals could represent the four stages in TALC model.

After categorizing the four stages, researcher also applied statistical cartography method to allow us portray the developing stages among TALC model. By illustrating an S-curve graph of TAGR growth, researcher simply point out the recent tourism development of each study site.

Afterwards, researcher took population data with tourist arrivals in a ratio. The ratio was called tourist/resident ratio. For tourist/resident ratio, this research examined the degree of tourism impacts in each study site. Tourist/resident could also defined as

“how many tourists should a local person serve? “If the ratio came to its limit, author assumed that the study site might contain more tourist impacts.



Delphi Panel

To analyze the survey for Delphi panel, two critical parts are provided: tourism development stages and tourism impacts. Although researcher had already pointed out tourism development by applying TAGR growth, the participants of Delphi panel might threw different perspectives. As a result, the professionals involved were given a basic graph of TALC (Butler 1980) to portray the development stage of each study site. After the beginning phase, researcher could combine the differences and similarities to search for the most suitable development stage. Furthermore, through surveying, researcher could recognize positive and negative tourism impacts toward each study site. For detailed impacts such as environment, culture, and services and conditions, professionals involved could give their perceptions. Through reviewing the perceptions, author could successfully explain the residents’ survey and therefore have an insightful realization.

Tourism Impacts Online Survey

The method of analyzing survey was firstly based on descriptive purposes such as frequencies, tendency and variability. As for the attribute datasets, e.g. socio-demographics, geographical proximity to tourism center and the dependency on

tourism, were all stored for comparison and grouping. Next, all datasets for economy, environment, culture, community services, and community conditions, were later listed by frequencies, tendency, and variability. Thirdly, the data collected required to run for one way ANOVA to observe the significance for each tourism impacts. The results helped to analyze the s existing tourism impacts and the degree of impacts, compared with the Delphi pretest. After that, researcher may realize in what aspect and in what way tourism influence residents and tourists on the offshore islands.

CHAPTER FOUR RESULTS

In this chapter, author would demonstrate the results for our research questions. Basically, our research aimed at (1) observing the tourism development stages of the four offshore study sites and (2) investigating different tourism impacts among different tourism development stages. For that reason, researcher would discuss the results and findings of data analysis. The first section would be the results for secondary data analysis which mainly focus on the tourist statistics from the Tourism Bureau. Next, researcher would present the results of Delphi panel. Finally, residents' survey was displayed at the end section of this chapter.

1. Secondary Data Analysis

For each study site, researcher presented a table and a graph for annual tourist arrivals growth rate (TAGR); moreover, all detailed tables can be seen in Appendices at the end of thesis.

Tourism Development Stage of Penghu

In Penghu, author discovers the irregular changes during the past three decades, and the trend shows that tourists coming to Penghu remain increasing. Yet, recently, the growth of tourists has slowed down. Through data interpretation, researcher believes that Penghu may fall in the growth stage in this decade.

Down under the graphs is the upper bound and the lower bound as well as the descriptive statistic values of TAGR. This table is based on the secondary data from the Tourism Bureau, and the time scale is from 1986 to 2012. The results suggest that the value of mean TAGR in Penghu accounts for is 14.66%, the standard deviation for TAGR, 41.50%. Also, the Highest TAGR is 153.78%; on the contrary, the lowest TAGR is -35.90%. Thus, in Penghu, researcher concludes that the range of the four stages with the upper bound and the lower bound.

In addition to the graphs indicating the upper bound and the lower bound, the population switch constitutes anther concern. Researcher found out that in Penghu, population remains in the range from 85,000 to 10,000 people. However, the tourist/population ratio begins increasing after 1998.

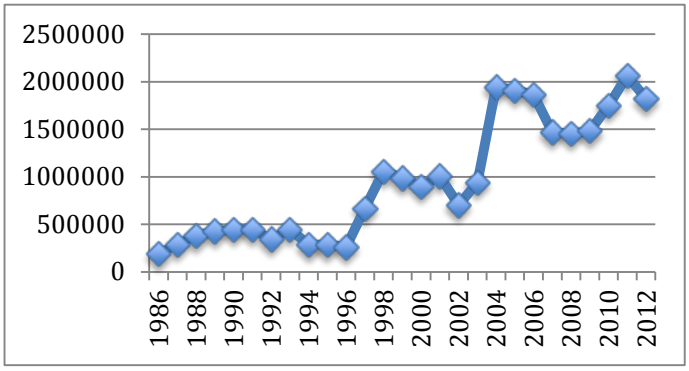


Figure 4-1: Annual Tourist Arrivals (1986~2012)

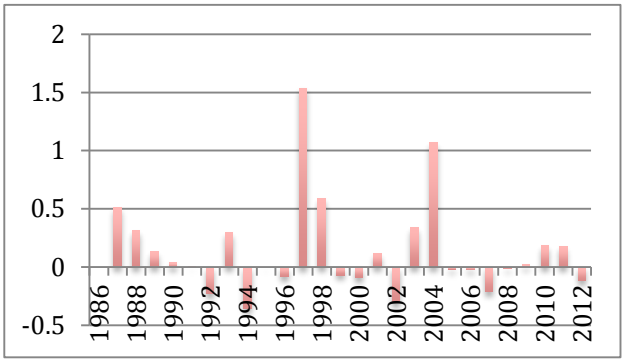


Figure 4-2: TAGR in Penghu (1986~2012)

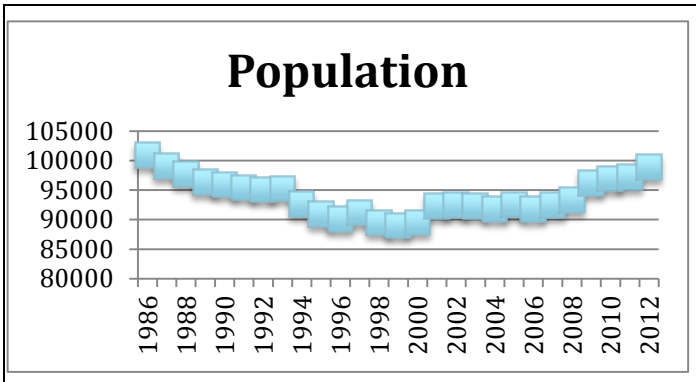


Figure 4-3: Population in Penghu (1986~2012)

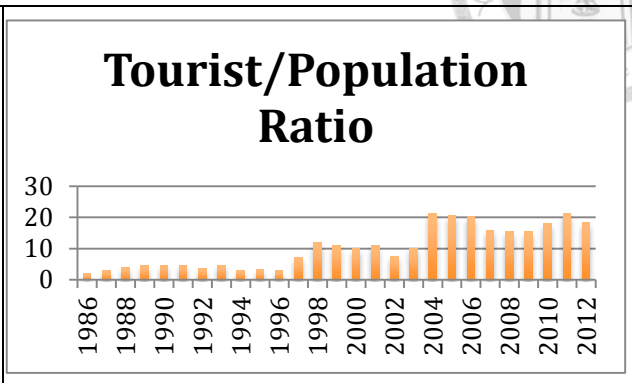


Figure 4-4: Tourist/Population Ratio in Penghu (1986~2012)

Table 4-1: TAGR results of Penghu

Years	27	
M	14.66%	
SD	41.50%	
Dec	-35.90%	-6.09%
Mat	14.66%	35.41%
Grw	35.41%	153.78%
Beg	-6.09%	14.66%

Tourism Development Stage of Little Liuqiu

In Little Liuqiu, researcher notice that the changes in tourist arrivals show a U curve, which means another increase in recent years. During 1986 to 1993, tourist arrivals declined apparently down to the floor. Far along, the tourist arrivals increased to 1500,000 people and stagnated for a decade. However, after a short time of dropping, the number of tourists became to bounce up, forming another peak. Accordingly, researcher consider that the development stage of Little Liuqiu shall be the growth stage consistent with the explosive growth after 2006.

Furthermore, the mean value of TAGR in the past 27 years is 3.74%, and the

standard deviation of TAGR is 24.15%. Also, the highest and the lowest TAGR value are 153.78% as well as -35.90% respectively. To our surprise, the means value of TAGR from 2006 to 2012 comes up to 25%, suggesting the rapid growth in tourism development.

A subtle decrease in population occurs, but the population still stays around 12,500 people. Apart from the switch in population, tourist/population ratio fluctuates twice as the same time when the tourist arrivals decrease. As a result, researcher hypothesizes that the ratio would be related to the changing tourist arrivals.

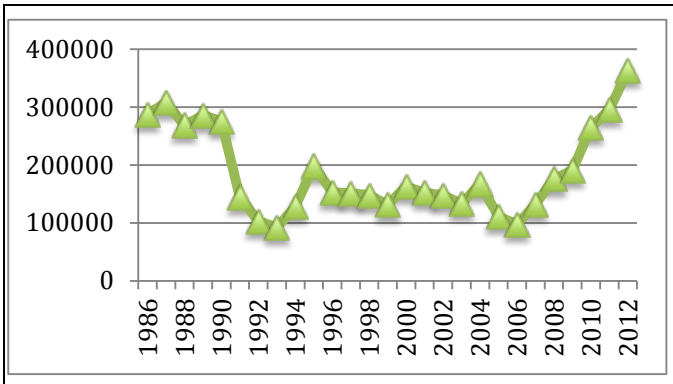


Figure 4-5: Annual Tourist Arrivals (1986~2012)

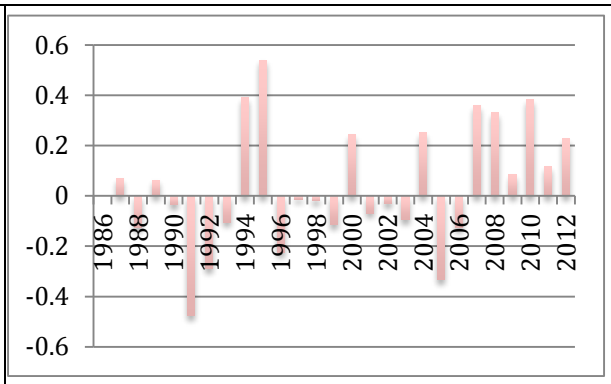


Figure 4-6: TAGR in Little Liuqiu (1986~2012)

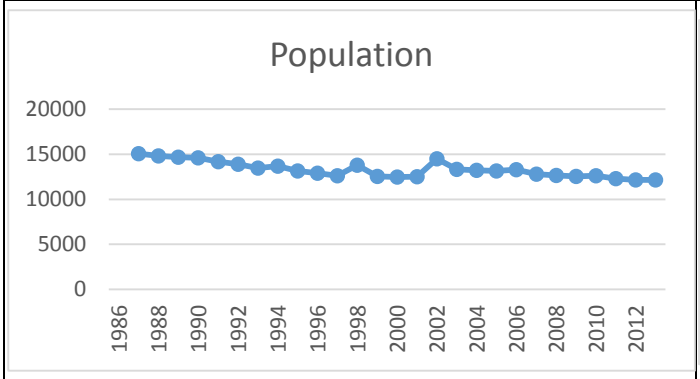


Figure 4-7: Population in Little Liuqiu (1986~2012)

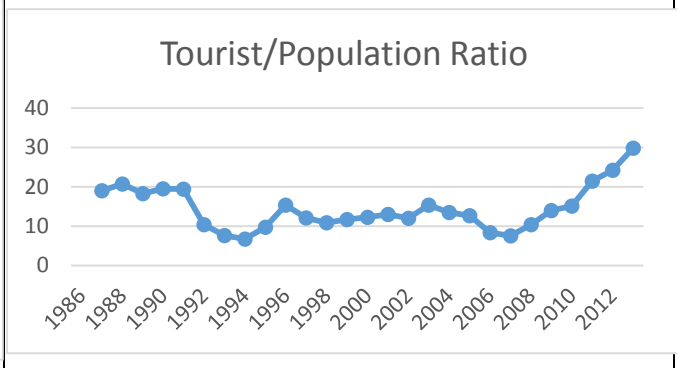


Figure 4-8: Tourist/Population Ratio in Little Liuqiu (1986~2012)

Table 4-2: TAGR results of Little Liuqiu

Years	27	
M	3.74%	
SD	24.15%	
Dec	-47.54%	-8.33%
Mat	3.74%	15.82%
Grw	15.82%	54.08%
Beg	-8.33%	3.74%

Tourism Development Stage of Green Island

The founding reflect tourist arrivals in Green Islands seem to fluctuate as an S curve which may be much similar to the shape in TALC model. The means of TAGR accounts for is 4.58%, and the standard deviation of TAGR 18.95%. In 1991 to 1999, the growth rate of tourist arrivals thrive up to about 22%; thus cumulating swiftly. However, in comparison with the time from or 1991~1999 to 2001~2012, researcher notices that the growth rate of tourist arrivals shrinks to only 1% with some slight instabilities. As a result, the development stage for Green Island should be in the maturity stage.

When contemplating the upper and lower bound of the four stages, researcher discovers the mean values of TAGR in 27 years is 4.58% with standard deviation 18.95%. Besides, the highest TAGR value is 44.75% but the lowest value is -34.67%. As mentioned earlier, the growth rate of tourist arrivals thrives up at the beginning ten years but fall down to merely 1% recently. Researcher anticipates a steady growing trend in the near future.

In addition, the population in Green Island continue declining from 1986 to 1998. However, after year 1998[8], the population increases slowly but steadily until 2004. To date, approximately 3,500 residents live on Green Island. Moreover, researcher observes that the tourist/population ratio tends to shift corresponding with what happens in tourist arrivals. The reason falls in the stable population. With steady population, tourist numbers can influence the vicissitudes in the ratio.

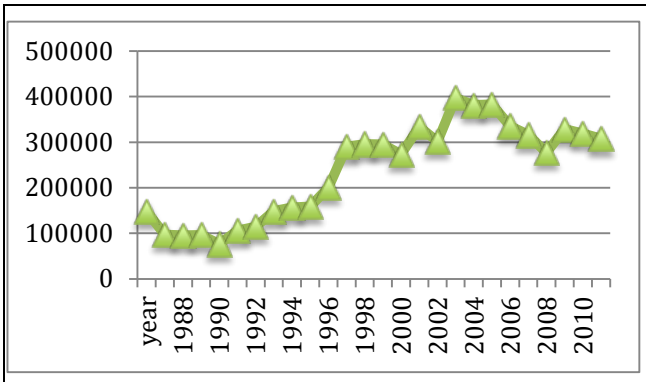


Figure 4-9: Annual Tourist Arrivals (1986~2012)

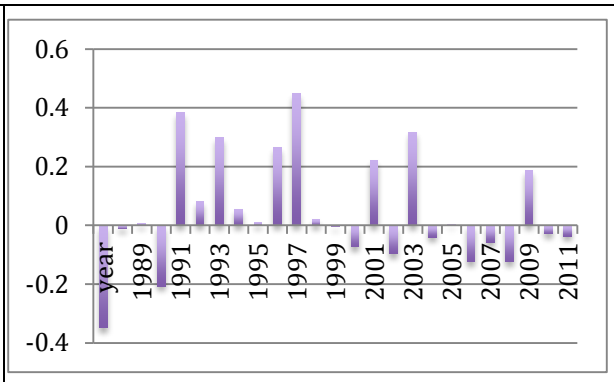


Figure 4-10: TAGR in Green Island (1986~2012)

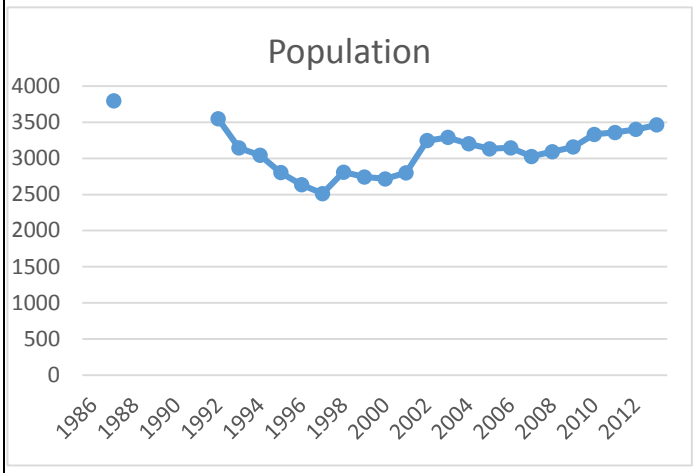


Figure 4-11: Population in Green Island (1986~2012)

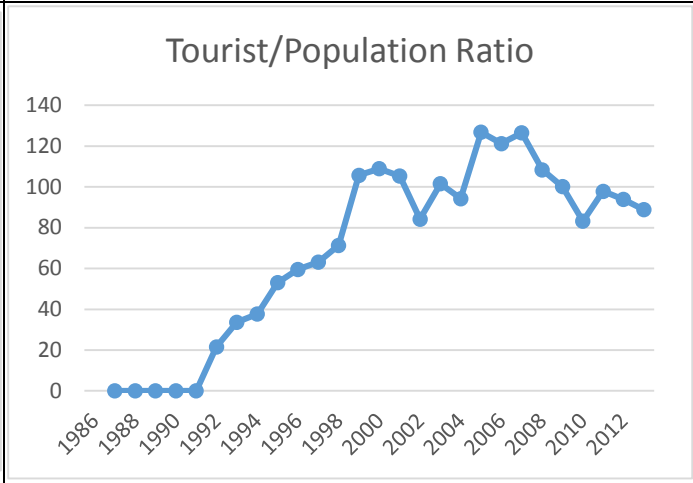


Figure 4-12: Tourist/Population Ratio in Green Island (1986~2012)

[8] The dataset do not include the year from 1987~1991, so researcher omits the missing data.

Table 4-3: TAGR results of Green Island

Years	27	
M	4.58%	
SD	18.95%	
Dec	-34.67%	-4.89%
Mat	4.58%	14.06%
Grw	14.06%	44.75%
Beg	-4.89%	4.58%

Tourism Development Stage of Orchid Island

It is obvious that in the year 1986 to 1996, an obvious decrease took place in Orchid Island. Then, between 1996 and to 2004, the number of tourists stays at 50,000. However, it can be seen that after the year 2006, the number of tourists starts to grow at the rate of 8%. As a result, the development in Orchid Island is thought to be the new introduction stage after decline.

Moreover, the means TAGR is 1.65% and the standard deviation of TAGR is about 25.43% in these 27 years. Apparently, the highest TAGR is 88.58% in comparison to the lowest TAGR with the value of -11.06%. The analysis implies that the development in Orchid Island has experienced the stages of decline, stagnation, and rejuvenation. It is predicted that the trend may go for another introduction in the near future.

In addition, the population in Orchid Island has experienced a stable growth in

these 27 years, and the population obviously increases visibly after the year 2000[9]. However, when comparing to the ratio of tourist and population, there are severe fluctuations in between. It is believed that the fluctuations would be related to the tourist arrivals. With unstable changes in tourist arrivals, the ratio can be easily influenced.

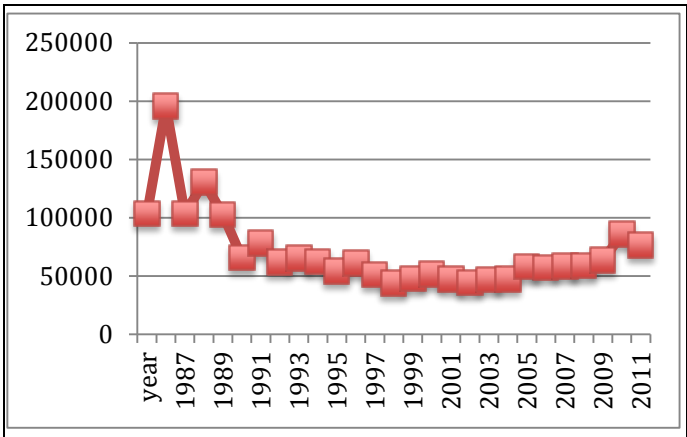


Figure 4-13: Annual Tourist Arrivals (1986~2012)

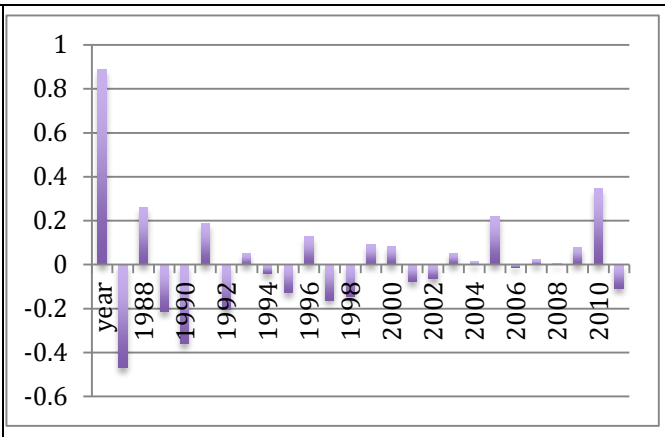


Figure 4-14: TAGR in Orchid Island (1986~2012)

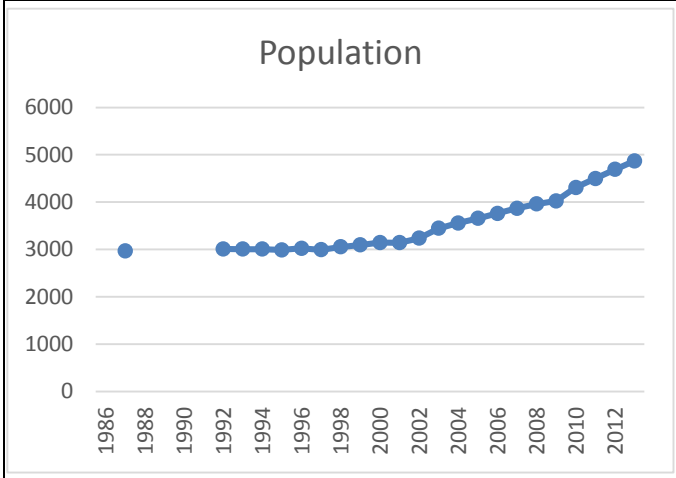


Figure 4-15: Population in Orchid Island (1986~2012)

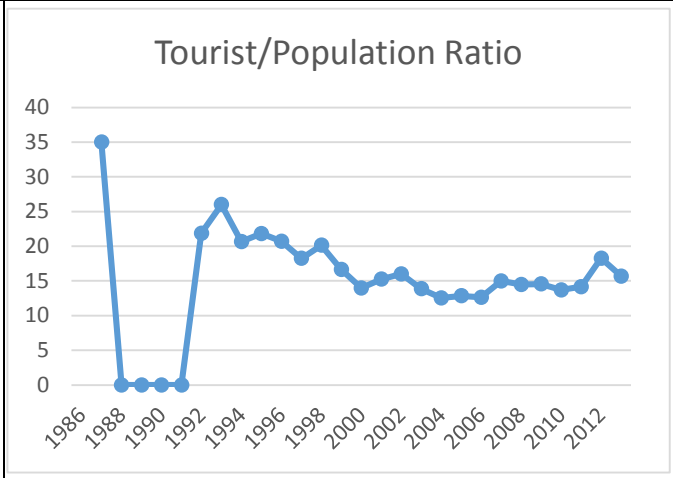


Figure 4-16: Tourist/Population Ratio in Orchid Island (1986~2012)

[9] Same as Green Island, the dataset do not include the year from 1987~1991, so researcher omits the missing data.

Table 4-4: TAGR results of Orchid Island

Years	27	
M	1.65%	
SD	25.43%	
Dec	-11.06%	-47.01%
Mat	1.65%	14.37%
Grw	14.37%	88.58%
Beg	-11.06%	1.65%

2. Tourism Impact Survey

Researcher gathered 1004 samples in total. Furthermore, there were no invalid data which would influence final analysis. For each study site, more than 230 samples were collected; moreover, researcher collected 265 for Penghu, 266 for Little Liuqiu, 233 for Orchid Island, and 240 for Green Island.

Table 4-5: Samples for each study site

Region	Number	Percentage (%)
Penghu	265	26.4
Little Liuqiu	266	26.5
Orchid Island	233	23.2
Green Island	240	23.9
Sum	1004	100.0

Background Information of Respondents

First of all, there are almost even numbers of male and female respondents; there are 510 males and 493 females with the percentage of 50.8% and 49.2%. Next, most respondents are between the age of 18 to 65. Thirdly, the educational background for those samples demonstrates that over 80% of respondents have a college degree or above. The analysis indicates that over 70% of respondents work full-time; a comparatively small ratio of people are students, and there are equal numbers of people working part-time or temporarily unemployed. To put simply, the survey samples suggest that most people at the age of 18 to 65 who are employed. Moreover, the result indicates the equal numbers of females and males interviewed.

On the other hand, the respondents include both residents and tourists. In Table 4-6-2 shows the components of samples in each study site. Moreover, if the answer is ambiguous, researcher placed these data into obscure parts. The residents in each study sites are 157 in Penghu, 159 in Little Liuqiu, 109 in Orchid Island, and 108 in Green Island. Next, the tourists occupy near one third of samples in Penghu and Little Liuqiu, but in Orchid Island and Green Island, tourists occupy higher ratios in the total samples. There are 99 respondents who are tourists in Penghu, 97 in Little Liuqiu, 107 in Orchid Island, and 121 in Green Island. However, if the respondents provide equivocal answers or misunderstood the questions, researcher may place

these answers in obscure sections. There are 9 obscure answers in Penghu, 10 in Little Liuqiu, 17 in Orchid Island, and 11 in Green Island.

Table 4-6-1: Summary of background information

		Number	Percentage (%)
Gender	Male	510	50.8
	Female	493	49.2
Age	Under 18	36	3.6
	18-25	171	17
	26-45	633	63
	46-65	155	15.4
	Over 65	9	0.9
Education	Junior high	33	3.3
	High School	133	13.2
	College	687	68.4
	Graduate School	151	15
Occupation	Retired	18	1.8
	Unemployed	34	3.4
	Housewife/husband	50	5
	Student	92	9.2
	Part-time	50	5
	Full-time	748	74.5
	Others	12	1.2

Table 4-6-2: Summary of background information

	Samples			
Study Sites	Residents	Tourists	Obscure[10]	Total
Penghu	157	99	9	265
Little Liuqiu	159	97	10	266
Orchid Island	109	107	17	233
Green Island	108	121	11	240

[10] In the survey, there are two questions designed for residents only. For those which made errors in answering, researcher placed these samples as obscure.

Comparisons to Economic Impacts

For Penghu, the results support the notion that economic contributor, being beneficial to all industries, bringing new incomes, substantial tax revenues, more job opportunities, more investment and improving infrastructure and services have higher scores which symbolize more apparent impacts on economy. Little Liuqiu somewhat has higher scores in economic contributor, being beneficial to all industries and bringing new incomes. Orchid Island only has higher scores in bringing new incomes. In addition, the result also suggest that Green Island has higher scores in economic contributor, being beneficial to all industries, bringing new incomes and more job opportunities. Nevertheless, some impacts are irrelevant or unapparent in study sites, with scores under 4.

For each study site, researcher notices that every study site has similar opinions on the increasing price of goods and services as well as increasing property taxes. The increasing price of goods and services is not significant with F value 1.352 ($P=0.256>0.05$), leading to the consistency in the 4 study site. Moreover, increasing property taxes is also non-significant with F value 1.357 ($P=1.357>0.05$), thus implying that all study sites have similar thoughts. Consequently, for increasing price of goods and services as well as increasing property taxes, consistent thoughts among these two issues is apparent.

However, the other nine questions have shown extraordinary significance. More precisely, economic contributor, being beneficial to all industries, bringing new incomes, substantial tax revenues, more job opportunities, more investment, improving infrastructure and services, higher prices of real estate and higher cost of living are all significant. Because of these F values are near 0 ($P<0.05$), researcher shall recommend these issues significant. In addition, researcher would go for post hoc test.

First of all, it is obvious that economic contributor of Penghu is significant among that of Green Island and Orchid Island. Besides, Little Liuqiu is also more significant than Green Island in economic contributor. However, the significance of Green Island is also higher than that of Orchid Island. Then, when it comes to whether tourism benefits businesses other than just tourism, the results also present similar trend to economic contributor.

Secondly, there are five issues revealing the identical tendency in terms of significance. Namely, researcher realizes that substantial tax revenues, more job opportunities, improving infrastructure and services, higher prices of real estate and higher cost of living share the same trend of significance. Therefore, it is noticeable that the significance of Penghu is higher than that of Orchid Island.

Next, in consideration of new income, researcher discovers that Penghu and

Little Liqiu are more significant than Orchid Island. Moreover, the significance of Green Island is also higher than that of Orchid Island.

Investments refer to the last factor to be discussed, and the significance of Penghu is higher than that of Orchid Island and Little Liuqiu.

Table 4-7: One-way ANOVA result of economic impacts

	Economic Questions	Study Sites	Number	Mean	Standard Deviation	F Value	Scheffe Multiple Comparison
Q1-1	Tourism is a strong economic contributor to our community.	Penghu	265	4.35	0.578	20.388***	Penghu>Orchid Island; Penghu>Green Island; Little Liqiu>Green Island; Green Island>Orchid Island
		Little Liuqiu	266	4.29	0.69		
		Orchid Island	233	3.89	0.826		
		Green Island	240	4.15	0.696		
Q1-2	Tourism benefits businesses other than just tourism industries in our community.	Penghu	265	4.25	0.569	11.398***	Penghu>Orchid Island; Penghu>Green Island; Little Liqiu>Green Island; Green Island>Orchid Island
		Little Liuqiu	266	4.07	0.759		
		Orchid Island	233	3.88	0.754		
		Green Island	240	4.06	0.691		
Q1-3	Tourism brings new income to our community.	Penghu	265	4.3	0.555	8.122***	Penghu>Orchid Island; Little Liqiu>Orchid Island;Green Island>Orchid Island
		Little Liuqiu	266	4.3	0.639		
		Orchid Island	233	4.05	0.723		
		Green Island	240	4.22	0.659		

Q1-4	Tourism generates substantial tax revenues for our local government.	Penghu	265	4.14	0.709	5.097**	Penghu>Orchid Island
		Little Liuqiu	266	3.99	0.831		
		Orchid Island	233	3.88	0.75		
		Green Island	240	3.99	0.743		
Q1-5	Tourism creates more jobs for our community.	Penghu	265	4.21	0.628	6.721***	Penghu>Orchid Island
		Little Liuqiu	266	4.09	0.772		
		Orchid Island	233	3.91	0.789		
		Green Island	240	4.08	0.764		
Q1-6	Tourism attracts more investment to our community.	Penghu	265	4.09	0.728	6.264***	Penghu>Little Liqiu; Penghu>Orchid Island
		Little Liuqiu	266	3.88	0.859		
		Orchid Island	233	3.79	0.884		
		Green Island	240	3.89	0.785		
Q1-7	Tourism improves infrastructure and services.	Penghu	265	4.02	0.738	4.393**	Penghu>Orchid Island
		Little Liuqiu	266	3.88	0.882		
		Orchid Island	233	3.75	0.834		
		Green Island	240	3.89	0.781		
Q1-8	The prices of goods and services have increased because of tourism.	Penghu	265	3.98	0.786	1.352	…
		Little Liuqiu	266	3.87	0.83		
		Orchid Island	233	3.87	0.788		
		Green Island	240	3.86	0.801		
Q1-9	The price of land and housing has	Penghu	265	3.89	0.823	6.521***	Penghu>Orchid Island
		Little Liuqiu	266	3.72	0.906		

	increased because of tourism.	Orchid Island	233	3.53	0.956		
		Green Island	240	3.71	0.936		
Q1-10	Tourism development increases property taxes.	Penghu	265	3.66	0.828	1.357	…
		Little Liuqiu	266	3.51	0.912		
		Orchid Island	233	3.58	0.917		
		Green Island	240	3.6	0.95		
Q1-11	Tourism increases the cost of living.	Penghu	265	3.85	0.769	3.886**	Penghu>Orchid Island
		Little Liuqiu	266	3.68	0.868		
		Orchid Island	233	3.63	0.896		
		Green Island	240	3.82	0.861		

Note: *p<0.05, **p<0.01, ***p<0.001

Comparisons to Socio-Cultural Impacts

In socio-cultural aspects, positive impacts have higher scores, specifically in the following categories: increasing number of recreational opportunities, improvements in the quality of service in restaurants, shops and hotels, improvements in the level of police protection and firefighting services and increasing availability of cultural, historical and entertainment activities. As opposed to the positive impacts, negative impacts such as disrupting quality of life, overcrowding, overuse of recreational resources, fast growing tourism as well as crime and vandalism have lower scores.

However, both Orchid Island and Green Island have the highest scores in disrupting quality of life fast growing tourism as well as crime and vandalism. Moreover, overcrowding and overuse of recreational resources also have higher scores but not as high as the others. For each study site, researcher finds out three impacts are not significant. The three impacts are improvements in the quality of service in restaurants, shops and hotels ($F=0.985$, $P=0.399>0.05$), improvements in the level of police protection and firefighting services ($F=2$, $P=0.112>0.05$) and increasing availability of cultural, historical and entertainment activities ($F=2.498$, $P=0.058>0.05$). As a result, researcher can conclude the respondents have similar considerations.

On the other hand, author can also notice the significance in the other six impacts. These 6 impacts are increasing number of recreational opportunities ($F=4.276$, $P=0.005<0.05$), disrupting quality of life ($F=6.989$, $P=0<0.05$), overcrowding ($F=8.858$, $P=0<0.05$), overuse of recreational resources ($F=11.804$, $P=0<0.05$), fast growing tourism ($F=7.796$, $p=0<0.05$) as well as crime and vandalism ($F=9.422$, $P=0<0.05$) show significant after ANOVA test. Therefore, all of these six impacts should go under post hoc test.

Firstly, increasing number of recreational opportunities shows that Penghu is more significant than Little Liuqiu and Orchid Island. Next, the result indicates that

Penghu and Little Liuqiu are both more significant than Green Island in terms of disrupting quality of life and overcrowding. Thirdly, for overuse of recreational resources, the results show the fact that Penghu and Little Liuqiu are more significant than Green Island. Finally, fast growing tourism as well as crime and vandalism reveals show that Little Liuqiu is more significant than Green Island and that Orchid Island.

Table 4-8: One-way ANOVA result of socio-cultural impacts

	Socio-Cultural Questions	Study Sites	Number	Mean	Standard Deviation	F Value	Scheffe Multiple Comparison
Q2-1	Tourism increases the number of recreational opportunities for local residents.	Penghu	265	3.81	0.801	4.276**	Penghu>Little Liqiu; Penghu>Orchid Island
		Little Liuqiu	266	3.54	1.054		
		Orchid Island	233	3.57	0.963		
		Green Island	240	3.61	0.984		
Q2-2	Tourism improves of the quality of service in restaurants, shops and hotels.	Penghu	265	3.9	0.749	0.985	…
		Little Liuqiu	266	3.86	0.81		
		Orchid Island	233	3.8	0.757		
		Green Island	240	3.8	0.805		
Q2-3	Tourism improves in the level of police protection	Penghu	265	3.62	0.841	2	…
		Little Liuqiu	266	3.49	0.916		
		Orchid Island	233	3.55	0.824		

	and firefighting services.	Green Island	240	3.44	0.931		
Q2-4	Tourism increases availability of cultural, historical and entertainment activities.	Penghu	265	3.97	0.73	2.498	…
		Little Liuqiu	266	3.85	0.817		
		Orchid Island	233	3.8	0.764		
		Green Island	240	3.93	0.737		
Q2-5	Tourists in our community disrupts my quality of life.	Penghu	265	2.95	0.995	6.989***	Penghu>Green Island; Little Liqiu>Green Island
		Little Liuqiu	266	2.98	1.028		
		Orchid Island	233	3.18	0.958		
		Green Island	240	3.30	1.019		
Q2-6	Our community is overcrowded because of tourism.	Penghu	265	3.16	1.036	8.858***	Penghu>Green Island; Little Liqiu>Green Island
		Little Liuqiu	266	3.10	1.156		
		Orchid Island	232	3.30	0.939		
		Green Island	240	3.54	0.954		
Q2-7	Our community's recreational resources are overused by tourists.	Penghu	265	3.16	1.101	11.804***	Penghu>Green Island;Little Liqiu>Orchid Island; Little Liqiu>Green Island
		Little Liuqiu	266	3.13	1.203		
		Orchid Island	232	3.43	0.965		
		Green Island	240	3.62	0.961		
Q2-8	Tourism is growing too fast in our community.	Penghu	265	2.98	0.977	7.796***	Little Liqiu>Orchid Island; Little Liqiu>Green Island
		Little Liuqiu	266	2.80	1.072		
		Orchid Island	232	3.08	0.992		
		Green Island	240	3.22	0.948		

Q2-9	Tourism has led to crime and vandalism.	Penghu	265	3.11	0.990	9.422***	Little Liqiu>Orchid Island; Little Liqiu>Green Island
		Little Liuqiu	266	2.93	1.033		
		Orchid Island	232	3.32	1.025		
		Green Island	240	3.35	1.012		

Note: *p<0.05, **p<0.01, ***p<0.001

Comparisons to Environmental Impacts

In the aspect of environmental impacts, positive and negative impacts have high scores, and the higher ones fall in negative impacts. Consequently, researcher recognizes that respondents are familiar to environmental impacts.

The results show that more than half impacts show considerable insignificance, such as diversity of nature (F=0.098, p=0.961>0.05), wildlife and natural habitats (F=1.43, p=0.232>0.05), protected environment (F=1.01, p=0.387>0.05), positive environmental ethics (F=0.632, p=0.595>0.05), harmonious development with nature (F=0.65, p=0.583>0.05) along with restoration of historical/cultural buildings and natural resources (F=2.019, p=0.11>0.05).

Additionally, most negative environmental impacts show significance, except improvements in community appearance (F=4.666, P=0.003<0.05). All negative impacts such as traffic congestion (F=10.082, P=0<0.05), pollutions (F=4.666, P=11.772<0), deteriorated environment (F=12.516, P=0.003<0) as well as littering and solid waste (F=13.004, P=0<0.05) show significant. For all impacts showing

significant, they should do post hoc test.

First, for improvements in community appearance, Penghu and Little Liuqiu are both more significant than Green Island. Next, in light of traffic congestion, Penghu and Little Liuqiu are both more significant than Green Island; also, Little Liuqiu shows more significance than Orchid Island. Instead, when comparing the three impacts: pollutions, deteriorated environment as well as littering and solid waste, researcher discovers that both Penghu and Little Liuqiu are more significant than Orchid Island and Green Island.

Table 4-9: One-way ANOVA result of environmental impacts

	Environmental Questions	Study Sites	Number	Mean	Standard Deviation	F Value	Scheffe Multiple Comparison
Q3-1	Our community's diversity of nature is valued and protected.	Penghu	265	3.34	0.977	0.098	…
		Little Liuqiu	266	3.37	1.032		
		Orchid Island	233	3.39	0.918		
		Green Island	240	3.37	0.985		
Q3-2	Tourism development in our community protects wildlife and natural habitats.	Penghu	265	3.28	0.943	1.43	…
		Little Liuqiu	266	3.36	1.016		
		Orchid Island	233	3.38	0.972		
		Green Island	240	3.45	0.976		
Q3-3	Our community's	Penghu	265	3.38	0.935	1.01	…

	natural environment is being protected now and for the future.	Little Liuqiu	266	3.45	1.020		
		Orchid Island	233	3.51	0.952		
		Green Island	240	3.52	0.985		
Q3-4	Tourism development in our community promotes positive environmental ethics.	Penghu	265	3.50	0.844	0.632	…
		Little Liuqiu	266	3.40	1.017		
		Orchid Island	233	3.49	0.929		
		Green Island	240	3.49	0.933		
Q3-5	Tourism in our community is developed in harmony with the natural environment.	Penghu	265	3.40	0.933	0.65	…
		Little Liuqiu	266	3.44	0.990		
		Orchid Island	233	3.45	0.964		
		Green Island	240	3.34	1.050		
Q3-6	Tourism helps restoration of historical/cultural buildings and natural resources.	Penghu	265	3.48	0.896	2.019	…
		Little Liuqiu	266	3.52	0.984		
		Orchid Island	233	3.55	0.880		
		Green Island	240	3.67	0.870		
Q3-7	Tourism improves community appearance.	Penghu	265	3.67	0.893	4.666**	Penghu>Green Island; Little Liqiu>Green Island
		Little Liuqiu	266	3.65	0.961		
		Orchid Island	233	3.75	0.743		
		Green Island	240	3.90	0.711		
Q3-8	Tourism has led to traffic congestion.	Penghu	265	3.47	1.055	10.082***	Penghu>Green Island;Little Liqiu>Orchid Island; Little
		Little Liuqiu	266	3.33	1.202		
		Orchid	233	3.61	0.875		

		Island					Liqiu>Green Island
		Green Island	240	3.81	0.907		
Q3-9	Tourism causes pollutions (water, air, and noise).	Penghu	265	3.53	1.059	11.772***	Penghu>Orchid Island; Penghu>Green Island;Little Liqiu>Orchid Island; Little Liqiu>Green Island
		Little Liuqiu	266	3.50	1.211		
		Orchid Island	233	3.81	0.852		
		Green Island	240	3.95	0.845		
Q3-10	The quality of the environment has deteriorated because of tourism.	Penghu	265	3.43	0.983	12.516***	Penghu>Orchid Island; Penghu>Green Island;Little Liqiu>Orchid Island; Little Liqiu>Green Island
		Little Liuqiu	266	3.36	1.119		
		Orchid Island	233	3.69	0.840		
		Green Island	240	3.83	0.898		
Q3-11	Tourism causes littering and solid waste.	Penghu	265	3.47	1.015	13.004***	Penghu>Orchid Island; Penghu>Green Island;Little Liqiu>Orchid Island; Little Liqiu>Green Island
		Little Liuqiu	266	3.47	1.150		
		Orchid Island	233	3.77	0.855		
		Green Island	240	3.91	0.821		

Note: *p<0.05, **p<0.01, ***p<0.001

Comparisons to Impacts on Conditions

High scores in conditions are obvious; basically, every single condition in each study site scores over 3. However, the highest score falls in prices for goods and services in Green Island. Nevertheless, the lower scores fall in clean air and water, cultural/historical sites, wildlife habitats and natural areas. Specifically, Little Liuqiu

has lower scores with reference to clean air and water, cultural/historical sites, wildlife habitats and natural areas as well as overall livability or conditions. Following the same argument, Green Islands and Orchid Island have lower scores in terms of clean air and water, cultural/historical sites, wildlife habitats and natural areas.

Concerning impacts among conditions, researcher only notice one insignificant condition. Property values has F value of 2.129 ($P=0.095>0.05$), so it is obvious that the respondents have similar thoughts regarding property values.

On the other hand, job opportunities ($F=4.175$, $P=0.006<0.05$), prices for goods and services ($F=13.707$, $P=0<0.05$), cost of living ($F=6.983$, $P=0<0.05$), infrastructure ($F=7.674$, $P=0<0.05$), traffic conditions ($F=6.896$, $P=0<0.05$), crime level ($F=7.094$, $P=0<0.05$), personal safety ($F=3.651$, $P=0.012<0.05$), entertainment opportunities ($F=4.985$, $P=0.002<0.05$), recreation opportunities ($F=5.502$, $P=0.001<0.05$), clean air and water ($F=14.66$, $P=0<0.05$), conditions of cultural/historical sites ($F=9.076$, $P=0<0.05$), conditions of wildlife habitats ($F=9.886$, $P=0<0.05$), conditions of natural areas ($F=10.792$, $P=0<0.05$), overall appearance in the community ($F=9.798$, $P=0.006<0.05$), overall community livability ($F=10.647$, $P=0<0.05$) and overall community conditions ($F=10.55$, $P=0<0.05$) are significant.

Several findings were made according to the aforementioned analysis. Firstly,

Penghu, Orchid Island and Green Island are more significant than little Liuqiu in the aspects of job opportunities and prices for goods and services. Next, Penghu and Green Island are more significant than Little Liuqiu in light of cost of living, infrastructure, crime level, personal safety, entertainment opportunities, conditions of wildlife habitats and conditions of natural areas. Thirdly, Penghu and Orchid Island are more significant than Little Liuqiu when talking about traffic conditions and overall community conditions. Next, for clean air and water, conditions of cultural/historical sites, overall appearance in the community and overall community livability, the significance for Penghu is higher than Little Liuqiu and Green Island; moreover, Orchid Island is also more significant than Little Liuqiu.

Table 4-10: One-way ANOVA result of impacts on conditions

	Conditions	Study Sites	Number	Mean	Standard Deviation	F Value	Scheffe Multiple Comparison
Q4-1	Job opportunities	Penghu	265	3.72	0.783	4.175**	Penghu>Little Liuqiu; Orchid Island>Little Liuqiu; Green Island>Little Liuqiu
		Little Liuqiu	266	3.5	0.953		
		Orchid Island	233	3.62	0.843		
		Green Island	240	3.73	0.776		
Q4-2	Property values	Penghu	265	3.29	0.846	2.129	…
		Little Liuqiu	266	3.11	0.908		
		Orchid Island	233	3.25	0.891		

		Green Island	240	3.18	0.939		
Q4-3	Prices for goods and services	Penghu	265	3.92	0.652	13.707***	Penghu>Little Liuqiu; Orchid Island>Little Liuqiu; Green Island>Little Liuqiu
		Little Liuqiu	266	3.59	0.957		
		Orchid Island	233	3.83	0.734		
		Green Island	240	4	0.688		
Q4-4	Cost of living	Penghu	265	3.74	0.711	6.983***	Penghu>Little Liuqiu; Green Island>Little Liuqiu
		Little Liuqiu	266	3.5	0.904		
		Orchid Island	233	3.66	0.777		
		Green Island	240	3.81	0.795		
Q4-5	Infrastructure (roads, bridges, utilities)	Penghu	265	3.68	0.784	7.674***	Penghu>Little Liuqiu; Orchid Island>Little Liuqiu
		Little Liuqiu	266	3.37	0.935		
		Orchid Island	233	3.53	0.76		
		Green Island	240	3.65	0.767		
Q4-6	Traffic conditions	Penghu	265	3.38	0.926	6.896***	Penghu>Little Liuqiu; Green Island>Little Liuqiu
		Little Liuqiu	266	3	1.06		
		Orchid Island	233	3.26	0.925		
		Green Island	240	3.15	1.034		
Q4-7	Crime level	Penghu	265	3.43	0.766	7.094***	Penghu>Little Liuqiu; Green Island>Little Liuqiu
		Little Liuqiu	266	3.19	0.891		
		Orchid Island	233	3.36	0.788		
		Green Island	240	3.5	0.749		
Q4-8	Personal safety	Penghu	265	3.23	0.884		

		Little Liuqiu	266	3.05	0.902	3.651*[11]	
		Orchid Island	233	3.21	0.843		
		Green Island	240	3.03	0.85		
Q4-9	Entertainment opportunities	Penghu	265	3.65	0.779	4.985**	Penghu>Little Liuqiu; Green Island>Little Liuqiu
		Little Liuqiu	266	3.39	0.938		
		Orchid Island	233	3.54	0.776		
		Green Island	240	3.6	0.775		
Q4-10	Recreation opportunities	Penghu	265	3.67	0.756	5.502**	Penghu>Little Liuqiu; Green Island>Little Liuqiu
		Little Liuqiu	266	3.42	0.929		
		Orchid Island	233	3.59	0.738		
		Green Island	240	3.67	0.752		
Q4-11	Clean air and water	Penghu	265	3.07	1.046	14.66***	Penghu>Little Liuqiu; Penghu>Green Island; Orchid Island >Little Liuqiu
		Little Liuqiu	266	2.53	1.075		
		Orchid Island	233	2.81	1.059		
		Green Island	240	2.56	1.029		
Q4-12	Conditions of cultural/historical sites	Penghu	265	3.32	0.916	9.076***	Penghu>Little Liuqiu; Penghu>Green Island; Orchid Island >Little Liuqiu
		Little Liuqiu	266	2.91	1.054		
		Orchid Island	233	3.18	0.885		
		Green Island	240	3.05	0.936		
Q4-13	Conditions of wildlife habitats	Penghu	265	3.05	1.025	9.886***	Penghu>Little Liuqiu; Green
		Little	266	2.62	1.097		

[11] After doing post hoc test, researcher does not find out significance in between.

		Liuqiu					Island>Little Liuqiu
		Orchid Island	233	2.85	1.004		
		Green Island	240	2.64	1.049		
Q4-14	Conditions of natural areas	Penghu	265	3.03	1.055	10.792***	Penghu>Little Liuqiu; Green Island>Little Liuqiu
		Little Liuqiu	266	2.58	1.083		
		Orchid Island	233	2.8	1.006		
		Green Island	240	2.6	1.022		
Q4-15	Overall appearance in the community	Penghu	265	3.41	0.875	9.798***	Penghu>Little Liuqiu; Penghu>Green Island; Orchid Island >Little Liuqiu
		Little Liuqiu	266	2.97	1.083		
		Orchid Island	233	3.21	0.913		
		Green Island	240	3.14	0.94		
Q4-16	Overall community livability	Penghu	265	3.35	0.845	10.647***	Penghu>Little Liuqiu; Penghu>Green Island; Orchid Island >Little Liuqiu
		Little Liuqiu	266	2.93	1.026		
		Orchid Island	233	3.24	0.872		
		Green Island	240	3.08	0.904		
Q4-17	Overall community conditions	Penghu	265	3.42	0.849	10.55***	Penghu>Little Liuqiu; Orchid Island >Little Liuqiu
		Little Liuqiu	266	2.96	1.049		
		Orchid Island	233	3.24	0.898		
		Green Island	240	3.19	0.962		

Note: *p<0.05, **p<0.01, ***p<0.001

Comparisons to Impacts on Services

As to the impacts among services, the data show neutral scores in every service listed in the survey. Thus, researcher does not find out specialties in services.

The data also reveal that three quarters of services listed in survey are insignificant. In addition, the nine services are formal education ($F=2.145$, $P=0.093>0.05$), medical availability and services ($F=1.467$, $P=0.222>0.05$), fire protection services ($F=0.286$, $P=0.835>0.05$), police protection services ($F=0.148$, $P=0.931>0.05$), public transportation services ($F=0.247$, $P=0.863>0.05$), banking services ($F=0.15$, $P=0.93>0.05$), shopping facilities and services ($F=2.263$, $P=0.08>0.05$), family supporting services ($F=1.124$, $P=0.338>0.05$) and overall community services ($F=0.592$, $P=0.62>0.05$) show insignificant.

In contrast, researcher notices that garbage collection services ($F=3.486$, $P=0.015<0.05$), restaurant facilities and services ($F=3.37$, $P=0.018<0.05$) along with recreational facilities and services ($F=2.709$, $P=0.044<0.05$) display significant. Therefore, all the three services should go under post hoc test.

First, the significance for Penghu is larger than Little Liuqiu in garbage collection services. In addition, restaurant facilities and services in Green Island is also more significant than in those in Little Liuqiu.

Table 4-11: One-way ANOVA result of impacts on services

	Services	Study Sites	Number	Mean	Standard Deviation	F Value	Scheffe Multiple Comparison
Q5-1	Formal education	Penghu	265	3.27	0.674	2.145	…
		Little Liuqiu	266	3.2	0.705		
		Orchid Island	233	3.34	0.772		
		Green Island	240	3.33	0.774		
Q5-2	Medical availability and services	Penghu	265	3.36	0.721	1.467	…
		Little Liuqiu	266	3.29	0.722		
		Orchid Island	233	3.4	0.799		
		Green Island	240	3.4	0.696		
Q5-3	Fire protection services	Penghu	265	3.34	0.695	0.286	…
		Little Liuqiu	266	3.31	0.713		
		Orchid Island	233	3.33	0.758		
		Green Island	240	3.37	0.748		
Q5-4	Police protection services	Penghu	265	3.35	0.774	0.148	…
		Little Liuqiu	266	3.3	0.763		
		Orchid Island	233	3.33	0.851		
		Green Island	240	3.32	0.797		
Q5-5	Garbage collection services	Penghu	265	3.36	0.801	3.486*	Penghu>Little Liuqiu
		Little Liuqiu	266	3.13	0.887		
		Orchid Island	233	3.29	0.871		
		Green	240	3.31	0.899		

		Island					
Q5-6	Public transportation services	Penghu	265	3.35	0.779	0.247	…
		Little Liuqiu	266	3.32	0.85		
		Orchid Island	233	3.38	0.795		
		Green Island	240	3.35	0.831		
Q5-7	Banking services	Penghu	265	3.33	0.659	0.15	…
		Little Liuqiu	266	3.3	0.643		
		Orchid Island	233	3.32	0.703		
		Green Island	240	3.33	0.663		
Q5-8	Shopping facilities and services	Penghu	265	3.52	0.713	2.263	…
		Little Liuqiu	266	3.39	0.909		
		Orchid Island	233	3.52	0.777		
		Green Island	240	3.56	0.795		
Q5-9	Restaurant facilities and services	Penghu	265	3.56	0.742	3.37*	Green Island>Little Liuqiu
		Little Liuqiu	266	3.39	0.943		
		Orchid Island	233	3.55	0.809		
		Green Island	240	3.62	0.815		
Q5-10	Recreational facilities and services	Penghu	265	3.58	0.735	2.709*[12]	
		Little Liuqiu	266	3.42	0.917		
		Orchid Island	233	3.58	0.79		
		Green Island	240	3.61	0.831		

[12] After doing post hoc test, researcher does not find out significance in between.

Q5-11	Family supporting services	Penghu	265	3.21	0.663	1.124	…
		Little Liuqiu	266	3.17	0.72		
		Orchid Island	233	3.25	0.742		
		Green Island	240	3.14	0.722		
Q5-12	Overall community services	Penghu	264	3.46	0.718	0.592	…
		Little Liuqiu	266	3.38	0.812		
		Orchid Island	233	3.46	0.814		
		Green Island	240	3.44	0.79		

Note: *p<0.05, **p<0.01, ***p<0.001

CHAPTER FIVE CONCLUSION AND DISCUSSION

In the final chapter, researcher would compare and discuss the findings first; subsequently, the author would conclude, providing suggestions and possible directions for future research. Furthermore, the two main themes of study would also be discussed and concluded by comparisons.

1. Discussions of the Findings

Tourism Development Stages

Although Butler (1980) Haywood (1986), Toh et al. (2001), Kim, Uysal, & Sirgy (2012) applied secondary data analysis for depicting tourism development stages for a destination. The borderline still relies on researcher's subjective opinions. Thus, it is rather difficult to meet the consensus. Researcher can take the different opinions as references.

The table below signifies that almost professions have different opinions different from those of the researcher. Only in Orchid Island displays that both sides agree on the argument depict that Orchid Island falls in decline and rejuvenation stage. Apart from that, in Delphi panel, mot professions assert that Little Liquiu falls in development stage; however, researcher states that Little Liuqiu is in the early development. Although both sides consider that Little Liuqiu is in its development

stage, the time line for Delphi participants moves somehow earlier. Also, researcher discovers that in Delphi panel, there is no consensus for Penghu in development stages. Finally, the professions describe Green Island as in decline and rejuvenation, and the results also differ to the researcher's.

As a result, researcher can understand with the unique perspective each scholar holds to examine the subject matter, each scholar maintain diversified arguments toward the notion of the development stages. Firstly, finding consensus is hard to achieve; it occurs only when the conditions to a destination are apparent. Secondly, the survey used in Delphi panel do not display the graphs recollected by researcher, therefore enlarging the gaps between participants and researcher. In addition, once a destination is large enough, participants in Delphi may conclude the development stage by specific area, which would not be able to represent the entire destination, thus allowing the errors to happen. In consequence of the three aforementioned reasons, this research fails to find any definite development stage in the four study sites.

Table 5-1: Comparisons for TALC stages

TALC Stages		
Study Sites	Secondary Data Analysis	Delphi
Penghu	development	development /stagnation/decline and rejuvenation

Little Liuqiu	early development	development
Orchid Island	decline and rejuvenation	decline and rejuvenation
Green Island	stagnation (mature)	decline and rejuvenation

Tourism Impacts

Researcher has done one survey for professions and the other for tourists and residents. However, there are several differences in between. In this part, researcher gives an explicit account for concludes both Delphi and survey results.

First, there are more consistency in economic impacts. Examples include, more job opportunities, economic contributor, better living standards and improvements in infrastructures as well as services are more consistent. In addition, rising price of land and housing, rising price of goods and services constitute the two major in negative impacts, which have higher consensus between Delphi and Survey.

However, are less similarities between Delphi and survey are by far obvious in light of socio-cultural impacts. Availability of cultural, historical and entertainment activities and recreational opportunities for Orchid Island and Little Liuqiu are all identical. Hence, it is predicted that socio-cultural impacts may not can hardly be aware with ease.

Next, Delphi and survey have a lot in common in terms of environmental impacts. Typical examples of this include, tourist attractions, restoration of

historical/cultural buildings and natural resources, deteriorated environment, traffic congestion and pollutions.

As to conditions, researcher discovers that job opportunities, cost of living, infrastructures, entertainment and recreation opportunities as well as clean air and water are apparently subject to tourism development. For both Delphi and survey, higher accordance has shown in between.

Finally, consuming facilities and services, restaurant facilities, and services along with recreational facilities and services are all under the tremendous influence of tourism impacts. Correspondingly, all the items are more acceptable for both respondents among Delphi panel and survey.

Consequently, it is suggested that economic and environmental impacts are more notable than socio-cultural impacts. This can be attributable to the fact the survey is conducted for residents and as tourists; some impacts may not be seen or experienced easily. The experiences, socio-cultural, conditions and services should have higher accordance to residents rather than tourists.

Significance in Tourism Impacts

In chapter Four, researcher has discussed the significance of for each tourism impact; the significance refers to what differentiates the impacts of each stage of

tourism development. In different stages of tourism development, respondents may notice certain degrees of impacts among each aspects.

For economic impacts, economic contributor, being beneficial to all industries, bringing new incomes, substantial tax revenues, more job opportunities, more investment, improving infrastructure and services, higher prices of real estate and higher cost of living would be influenced by different stages of development.

Secondly, there are six significant impacts are increasing number of recreational opportunities, disrupting quality of life, overcrowding, overuse of recreational resources, fast growing tourism as well as crime and vandalism show significant. Also, the degree these six socio-cultural impacts may be changeable due to tourism development stages.

Next, most negative environmental impacts indicate significance except improvements in community appearance. All negative impacts, such as traffic congestion, pollutions, deteriorated environment, and littering and solid waste show significance. As a result, negative environmental impacts would be influenced apparently by different development stages. In conclusion, researcher can say that different development stages also bring different impacts among environment.

Finally, except property values, impacts among other conditions show significance. Garbage collection services, restaurant facilities and services along with

recreational facilities and services are significant impacts for services, too. To sum up, services are more consistent, and these are not changeable due to tourism development. In addition, conditions would also change under different circumstances.

2. Suggestions and Directions for Future Research

For decision makers, tourism impacts are highly pertaining to different development stages; effective monitoring is the crucial key to effective policies making. In order to make appropriate precise decisions in management, the investigation should be applied in economy, socio-culture, environment al, conditions, and services. Most importantly, socio-cultural impacts should be inspected because the changes in this aspect would not be obvious in a short period of time.

Because of insufficient limitations on budget, time, and secondary tourism statistics, researcher may not be able to conduct more in-depth analysis and survey of all offshore islands. Accordingly, this research applies a similar survey on tourists and residents. However, the results of tourism impacts may consist errors which contain a high percentage of tourists' opinions.

In conclusion, according to this the research, it is suggested that offshore islands in Taiwan should be thoroughly investigated so as to identify find more acceptable

development stages. Secondly, qualitative researchers are in need to explore tourism impacts for residents. Finally, the samples collected should be in equal size. In addition, the comprehensive research for both residents' and tourists' perceptions of tourism impacts can demonstrate better relationships in between.

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APPENDICES

○○地區觀光發展暨觀光衝擊問卷調查

各位親愛的受訪者您好：

這是一份關於○○地區之觀光發展暨觀光衝擊問卷，目的在瞭解本地觀光發展影響、觀光衝擊與居民生活品質狀況。本研究僅供學術用途，敬請安心填答。您的意見對於本研究非常重要，感謝您的協助。

敬祝

闔府平安

國立臺灣大學森林環境暨資源學系

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1.請問觀光發展如何影響○○經濟？

		非常不同意	不同意	沒有意見	同意	非常同意
A.	觀光對本地區經濟有很大貢獻。	□	□	□	□	□
B.	在本地區觀光對其他產業亦有助益。	□	□	□	□	□
C.	觀光為地區帶來新的收入。	□	□	□	□	□
D.	觀光為當地政府帶來更多稅收。	□	□	□	□	□
E.	觀光提供本地區更多工作機會。	□	□	□	□	□
F.	觀光替本地區吸引更多投資。	□	□	□	□	□
G.	觀光改善基礎建設和服務。	□	□	□	□	□
H.	商品和服務的價格因觀光而提升。	□	□	□	□	□
I.	房地產價格因觀光而提高。	□	□	□	□	□
J.	稅金因觀光提高。	□	□	□	□	□
K.	生活費因觀光提升。	□	□	□	□	□

2. 請問觀光發展如何影響○○社會與文化？

		非常不同意	不同意	沒有意見	同意	非常同意
A.	觀光為本地人提供更多休閒遊憩機會。	□	□	□	□	□
B.	觀光提升本地商店、餐廳、旅館的服務品質。	□	□	□	□	□
C.	觀光提升警察與消防的防護水準。	□	□	□	□	□
D.	觀光增加本地文化及娛樂活動。	□	□	□	□	□

E.	觀光客干擾我的生活。	□	□	□	□	□
F.	本地區因觀光發展而過度擁擠。	□	□	□	□	□
G.	本地區休閒資源被觀光發展過度使用。	□	□	□	□	□
H.	本地區觀光發展太快。	□	□	□	□	□
I.	觀光造成犯罪和文化藝術的破壞。	□	□	□	□	□

3. 請問觀光發展如何影響○○環境？

		非常不同意 ▼	不同意 ▼	沒有意見 ▼	同意 ▼	非常同意 ▼
A.	本地區的自然資源多樣性提升且被保護。	□	□	□	□	□
B.	本地區觀光發展保護野生動物及其自然棲地。	□	□	□	□	□
C.	本地區之自然環境已被保護，且未來也將繼續被保護。	□	□	□	□	□
D.	本地區觀光發展對於推廣環境倫理有正面幫助。	□	□	□	□	□
E.	本地區觀光發展與環境保護和諧共存。	□	□	□	□	□
F.	觀光發展幫助修復古蹟、文化遺產以及自然資源。	□	□	□	□	□
G.	觀光提升本地區形象。	□	□	□	□	□
H.	觀光造成交通擁擠。	□	□	□	□	□
I.	觀光造成汙染（空氣汙染、水汙染、噪音）。	□	□	□	□	□
J.	環境品質因觀光而降低。	□	□	□	□	□
K.	觀光造成當地垃圾與土壤汙染。	□	□	□	□	□

4. 請您大致講述對觀光的看法?

		非常不同意	不同意	沒有意見	同意	非常同意

		▼	▼	▼	▼	▼
A.	整體而言，觀光帶來的效益多於成本。	□	□	□	□	□
B.	整體而言，我滿意本地區觀光發展。	□	□	□	□	□
C.	整體而言，我因觀光發展而受益。	□	□	□	□	□
D.	我支持觀光發展。	□	□	□	□	□
E.	我支持本地區進行更多的觀光發展。	□	□	□	□	□

5. 性　　別：　□男　□女

6. 年齡：　□ 18-25　□ 26-45　□ 46-65　□ Over 65

7. 您的郵遞區號：　_____

8. 請圈選您的最高學歷。

□ 國中以下　□ 高中職　□ 大學大專　□ 研究所

9. 請圈選您的就業狀態　。

□ 退休　□ 待業中　□ 家庭主婦／夫　□ 學生
□ 兼職　□ 全職　□ 其他　(請說明):
_____

10. 請問您或家人是否受雇於觀光產業？（如：觀光景點、導遊、旅館、飯店；零售商等）

□ 是　□ 否

11. 請問您對以下 <u>地區狀況</u> 的滿意度為何?

	地區狀況	完全不滿意 ▼	不滿意 ▼	普通 ▼	滿意 ▼	非常滿意 ▼
A.	工作機會	□	□	□	□	□
B.	價值觀	□	□	□	□	□
C.	物價	□	□	□	□	□
D.	生活費用	□	□	□	□	□
E.	基礎建設（道路、橋樑、公共設施）	□	□	□	□	□
F.	交通狀況	□	□	□	□	□
G.	犯罪率	□	□	□	□	□
H.	人身安全	□	□	□	□	□
I.	休閒機會	□	□	□	□	□
J.	娛樂機會	□	□	□	□	□
K.	乾淨的空氣、水與環境	□	□	□	□	□
L.	文化及歷史景點現況	□	□	□	□	□
M.	野生動物自然棲地現況	□	□	□	□	□
N.	自然環境現況	□	□	□	□	□
O.	地區整體觀感	□	□	□	□	□
P.	地區適宜居住性	□	□	□	□	□
Q.	整體地區狀況	□	□	□	□	□

12. 請問您覺得以下狀況 <u>重要性為何</u> ？

	地區狀況	完全不重要 ▼	不重要 ▼	普通 ▼	重要 ▼	非常重要 ▼
A.	工作機會	□	□	□	□	□
B.	價值觀	□	□	□	□	□
C.	物價	□	□	□	□	□
D.	生活費用	□	□	□	□	□
E.	基礎建設（道路、橋樑、公共設施）	□	□	□	□	□
F.	交通狀況	□	□	□	□	□
G.	犯罪率	□	□	□	□	□
H.	人身安全	□	□	□	□	□

I.	休閒機會	□	□	□	□	□
J.	娛樂機會	□	□	□	□	□
K.	乾淨的空氣、水與環境	□	□	□	□	□
L.	文化及歷史景點現況	□	□	□	□	□
M.	野生動物自然棲地現況	□	□	□	□	□
N.	自然環境現況	□	□	□	□	□
O.	地區整體觀感	□	□	□	□	□
P.	地區適宜居住性	□	□	□	□	□
Q.	整體地區狀況	□	□	□	□	□

13. 請問以下狀況受觀光影響程度為何？

	地區狀況	大幅下降 ▼	下降 ▼	沒有影響 ▼	提升 ▼	大幅提升 ▼
A.	工作機會	□	□	□	□	□
B.	價值觀	□	□	□	□	□
C.	物價	□	□	□	□	□
D.	生活費用	□	□	□	□	□
E.	基礎建設（道路、橋樑、公共設施）	□	□	□	□	□
F.	交通狀況	□	□	□	□	□
G.	犯罪率	□	□	□	□	□
H.	人身安全	□	□	□	□	□
I.	休閒機會	□	□	□	□	□
J.	娛樂機會	□	□	□	□	□
K.	乾淨的空氣、水與環境	□	□	□	□	□
L.	文化及歷史景點現況	□	□	□	□	□
M.	野生動物自然棲地現況	□	□	□	□	□
N.	自然環境現況	□	□	□	□	□
O.	地區整體觀感	□	□	□	□	□
P.	地區適宜居住性	□	□	□	□	□
Q.	整體地區狀況	□	□	□	□	□

14. 請問您對以下地區服務的 <u>滿意度</u> 為何？

	地區服務	完全不滿意 ▼	不滿意 ▼	普通 ▼	滿意 ▼	非常滿意 ▼
A.	正規教育	□	□	□	□	□
B.	醫療服務	□	□	□	□	□
C.	消防保護	□	□	□	□	□
D.	警察保護	□	□	□	□	□
E.	垃圾清運	□	□	□	□	□
F.	大眾運輸	□	□	□	□	□
G.	銀行服務	□	□	□	□	□
H.	購物設施與服務	□	□	□	□	□
I.	餐廳設施與服務	□	□	□	□	□
J.	休閒設施與服務	□	□	□	□	□
K.	家庭援助	□	□	□	□	□
M.	整體地區服務	□	□	□	□	□

15. 請問您認為以下的地區服務 重要性 為何？

	地區服務	完全不重要 ▼	不重要 ▼	普通 ▼	重要 ▼	非常重要 ▼
A.	正規教育	□	□	□	□	□
B.	醫療服務	□	□	□	□	□
C.	消防保護	□	□	□	□	□
D.	警察保護	□	□	□	□	□
E.	垃圾清運	□	□	□	□	□
F.	大眾運輸	□	□	□	□	□
G.	銀行服務	□	□	□	□	□
H.	購物設施與服務	□	□	□	□	□
I.	餐廳設施與服務	□	□	□	□	□
J.	休閒設施與服務	□	□	□	□	□
K.	家庭援助	□	□	□	□	□
M.	整體地區服務	□	□	□	□	□

16. 請以下服務受觀光 影響 程度為何?

	地區服務	大幅下降 ▼	下降 ▼	沒影響 ▼	提升 ▼	大幅提升 ▼
A.	正規教育	□	□	□	□	□
B.	醫療服務	□	□	□	□	□
C.	消防保護	□	□	□	□	□
D.	警察保護	□	□	□	□	□
E.	垃圾清運	□	□	□	□	□
F.	大眾運輸	□	□	□	□	□
G.	銀行服務	□	□	□	□	□
H.	購物設施與服務	□	□	□	□	□
I.	餐廳設施與服務	□	□	□	□	□
J.	休閒設施與服務	□	□	□	□	□
K.	家庭援助	□	□	□	□	□
M.	整體地區服務	□	□	□	□	□

17. 整體而言，您是否滿意○○的生活品質？（限居民填寫，遊客可跳過）

□ 完全不滿意 □ 不滿意 □ 普通 □ 滿意 □ 非常滿意 □非居民

18. 觀光大致上如何影響您的生活品質？（限居民填寫，遊客可跳過）

□ 大幅下降 □ 下降 □ 沒影響 □ 提升 □ 大幅提升 □非居民

19. 提到○○，地區現狀變得…

□ 更差 □ 沒改變 □ 更好

20. I 在未來數年，您相信○○會變得…

□ 比現在更差 □ 沒改變 □ 比現在更好

21. 在以下空白處請您提供○○觀光發展的看法。

感謝您的填答。

專家問卷調查：觀光開發階段、觀光衝擊與居民生活品質

親愛的專家學者您好：

這是一份專家問卷，目的在於了解◯◯[13]的觀光發展階段與觀光衝擊現況。

此問卷僅供學術研究之用，並採匿名方式，請您安心填寫。非常感謝你的協助！

祝您 萬事如意、事事順心！

國立台灣大學森林環境暨資源學系

指導教授:余家斌博士

學生:葉八方

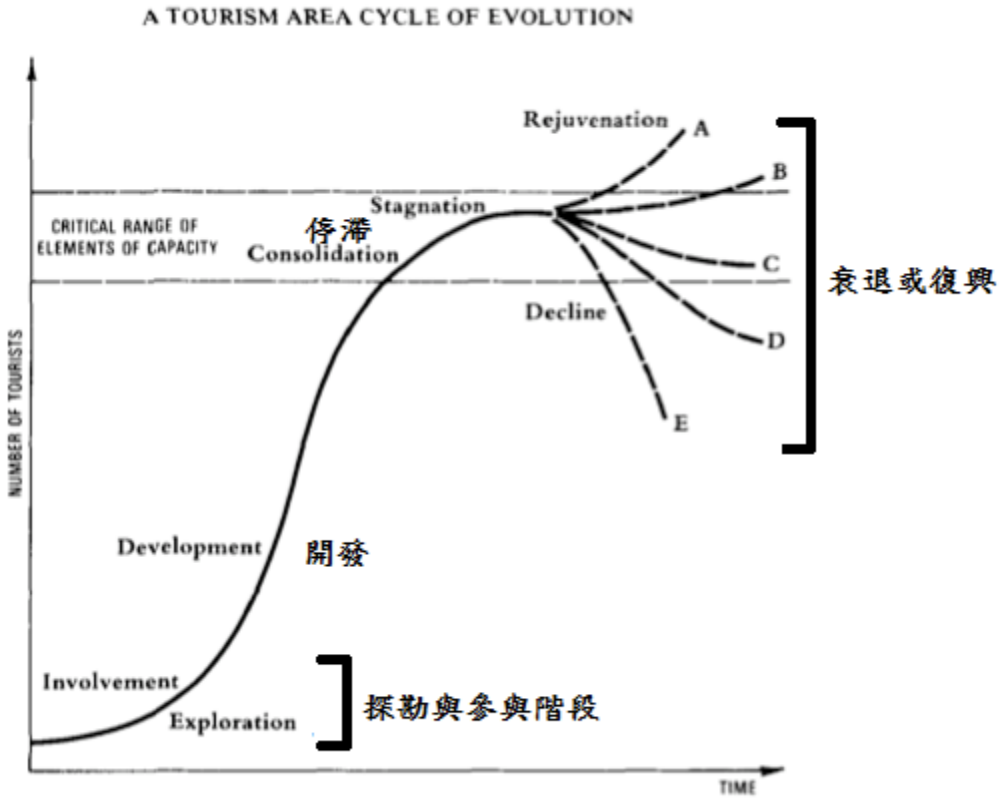
敬上

[13] ◯◯ represents the four study sites.

○○地區

從觀光開發階段(Tourist Area Life Cycle)模型來看(說明如下)，您認為○○目前屬於何種觀光開發階段？

觀光開發階段模型(Tourist Area Life Cycle Model)最早由 R.W. Butler 於 1980 年代提出，TALC 模型用來說明觀光地發展程度的演變。TALC 模型稱觀光地發展最初始階段為探勘與參與階段(exploration and involvement)，當地居民及企業主開始重視並經營觀光業致使觀光地逐漸發展，此時遊客人數較少。經過一段時間後，觀光地廣為人知，開始湧入大量遊客，稱此階段為開發階段(development)。當觀光地發展接近飽和，遊客人數成長趨緩，我們就稱為停滯階段(stagnation)。最後，本觀光地發展會衰退，或配合妥當的經營，觀光地尚可以有另一次發展機會，我們則稱此為衰退或復興(decline and rejuvenation)階段。以下為圖示說明。



本圖引自 Butler (1980)

(1) ☐ 探勘與參與階段探勘
(2) ☐ 開發
(3) ☐ 停滯
(4) ☐ 衰退或復興

1. 從經濟的角度來看您認為○○地區目前主要的觀光影響為何？

正面

☐增加就業機會
☐促進當地產業發展
☐遊憩、購物機會增多
☐地方稅收增加
☐居民生活水準提升
☐引進外來投資
☐促進當地產物流通
☐改善地方經濟結構

□增加居民所得
□改善地方基礎建設
□其他：_____

負面

□觀光利益分配不均
□房地產價格上漲
□物價上漲
□僕役性工作增加
□過度依賴觀光產業
□淡旺季差別造成季節性失業
□其他：_____

2. 從社會文化的角度來看您認為澎湖地區目前主要的觀光影響為何？

正面

□促進生活品質
□促進文化交流
□觀光提升當地文化活動
□本地傳統技藝文化活動獲得傳承保存
□社區的歷史文化遺產受到保護
□增加了社區的團結精神
□社區居民的自尊心提高
□居民娛樂的機會增加
□其他：_____

負面

□當地資源被濫用
□文化商品化
□犯罪增加
□傳統文化變質
□其他：_____

3. 從環境的角度來看您認為○○地區目前主要的觀光影響為何？（看附件）

正面

□公共設施的興建與改善
□增加社區的觀光據點
□社區轉型與更新
□特有歷史建築與區域維護與保存
□對外交通改善
□其他：_____

負面

□破壞自然環境
□交通擁擠
□噪音及環境污染
□攤販問題造成街道景觀髒亂
□垃圾髒亂
□空氣品質下降
□視覺污染
□其他：_____

4. 您認為觀光發展改變○○居民哪些社區生活狀態(conditions)？

工作機會
□價值觀
□物價
□生活費用
□基礎建設
□交通狀況
□犯罪率
□人身安全
□休閒娛樂機會
□空氣、水與環境
□文化及歷史景點現況
□野生動物自然棲地現況
□社區整體觀感
□社區適宜居住性
□整體社區狀況
□其他：_____

5. 您認為觀光發展改善○○居民哪些社區生活服務(services)？
□教育服務
□醫療服務
□消防保護
□警察保護
□垃圾清運
□大眾運輸
□購物設施與服務
□餐廳設施與服務
□休閒設施與服務
□家庭援助
□其他：_____