The Impact of Cultural and Natural Capital on Chinese Outbound Tourism Demand

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Abstract

The tourism industry contributes greatly to economic growth according to research. The impact of different aspects of tourism on tourism demand, particularly the impact of cultural and natural capital, has however, received less attention. Most of the literature has focused on tourism modelling with determinants such as income level, distance, population and some local characteristics. In order to promote sustainable tourism and understand the importance of cultural and natural capital in tourists' decision making process, this research examines whether tangible cultural and natural characteristics of the destination country affect Chinese tourists' decisions when choosing their international travel destination. The main motivation of this research is to provide effective policy recommendations to the Australian tourism industry to ensure a healthy tourism demand and supply relationship that is sustainable between China and Australia.

This study uses a panel data regression model to test whether natural and cultural capital influence Chinese outbound tourism. The main finding shows that natural capital, referred to as natural heritage sites on the UNESCO World Heritage List, may have little positive impact on Chinese outbound tourism demand, while cultural capital, referred to as cultural heritage sites listed on the UNESCO World Heritage List, may have a more significant impact on Chinese outbound tourism than natural capital.

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List of Abbreviations

ADS	Approved Destination Status
ARIMA	Autoregressive integrated moving average
GDP	Gross Domestic Product
GNP	Gross National Product
NSW	New South Wales
NT	Northern Territory
QLD	Queensland
SARIMA	Seasonal autoregressive integrated moving average
TAS	Tasmania
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNWTO	United Nations World Tourism Organization
VIC	Victoria
WA	West Australia

Chapter 1
Introduction

1.1 Backgrounds

Tourism can make a strong contribution to a nation's economic growth (Anderson 2015). In 2015 international tourist arrivals reached 1.2 billion and the global tourism industry generated US$1.5 trillion in export earnings (United Nations World Tourism Organization 2016). Compared to manufacturing, mining and heavy industry, tourism is a relatively low pollution industry and it has potential to lead to more sustainable development (Eilat & Einav 2004; Su & Lin 2014). Hence, the tourism industry attracts attention from both governments and individual businesses. Many countries are developing a tourism-based economic strategy as a pathway to their sustainable development (Su & Lin 2014).

To actively promote sustainable tourism, an understanding of the influences on tourists' decisions is important and of particular interest is the extent to which a destination country's endowment of cultural and natural capital affects tourist demand. Cultural capital refers to assets that have cultural significance such as a heritage building or site, and natural capital refers to environmental amenities such as forests, beaches, wilderness areas and so on. These capital items are referenced in this thesis as recognised assets listed on the UNESCO World Heritage List.

Tourists make decisions on travel destinations based on a variety of factors, such as income level, holiday availability, travel distance and personal taste. Sightseeing and experiencing local culture are two important aspects of tourism activities. Tourists can be considered as special consumers, as they consume goods and services that are derived from the stock of capital assets including cultural and natural capital (Lück 2008). Cultural and natural capital are both likely to have an impact on the quality of the tourism experience. Thus, it is reasonable that high quality cultural or natural capital of the destination country will have an influence on the number of international visitors. One of the specific goals for this study is to

investigate whether the cultural and natural characteristics of the destination country affect Chinese tourists' decisions when selecting their travel destination. Yet, there is little research on the role and contribution of cultural and natural capital in tourism demand. Increasing awareness of the role of these types of capital in tourism demand is an important motivation for this research.

1.2 Overview of World Heritage List and sustainable tourism development

In 1972, the World Heritage Centre of the United Nations Educational, Scientific and Cultural Organization (UNESCO) adopted a Convention for the Protection of the World Cultural and Natural Heritage (Drost 1996; UNESCO 2016). The World Heritage List was designed to encourage countries to identify and preserve cultural and natural capital with outstanding value to humanity (Arezki, Cherif & Piotrowski 2009). To be successfully inscribed on the World Heritage List, the nominated sites have to pass a strict examination process. The cultural and natural capital items that have been approved by UNESCO represent a nation's cultural and natural identity at an aggregate level. Nations with many sites that have been listed on the World Heritage List may have high global visibility. In recent decades, World Heritage sites have been widely used in marketing tourism by travel agencies and national governments, even though the initial purpose for establishing the World Heritage List was not to encourage tourism (Cellini 2011). Figure 1.1 shows there has been a significant increase in the number of World Heritage sites from 1995 to 2014, as increasing numbers of cultural and natural sites were identified as valuable capital for those nations. The positive impact of cultural and natural heritage sites on tourism is important for tourism expenditure which explains why countries make significant efforts to include their sites on the list. The process could be self-reinforcing, since a great proportion of the total revenue generated from tourism services or donations from the public at World Heritage sites will go directly to conservation. Thus the increased revenue will improve the quality and conditions for tourism, and then the improved tourism conditions could further increase the attractiveness of those heritage sites (Yang, Lin & Han 2010; Su & Lin 2014).

Figure 1.1: Total number of World Heritage sites each year, 1995 to 2014

Source: Constructed using data from United Nations Educational, Scientific and Cultural Organization (2016).

Tourism does have negative impacts on environmental and cultural sites, due to the increasing number of people and associated activities, although not as much impact as other industries. A common dilemma in the tourism industry is the potential damage that may result from high demand for heritage sites that have both a natural and cultural base (Li, Wu & Cai 2008). There are concerns that higher recognition of outstanding values may stimulate visitation and impacts on these sites which could hinder a country's ability to achieve sustainable tourism development in the long term. Sustainable tourism aims to keep the impact on environment and cultural heritage to a low level and can also help to create work opportunities, business opportunities and also provide a positive experience for tourists (UNWTO 2005). In other words, the main purpose to promote sustainable tourism development is to ensure a balance between natural environmental conservation, maintenance of cultural integrity, tourists' travel experience and the improvements in economic benefit for host communities (Liu 2003). Natural and cultural factors play important roles in sustainable development. In Australia, 19 cultural, natural and mixed sites have been included in the UNESCO World Heritage List (UNESCO 2016). Table 1.1 summarises the three cultural sites, twelve natural sites and four mixed heritage sites in Australia.

Table 1.1: Australia's sites on the World Heritage List

	Name of cultural, natural and mixed heritage site	Type	Year of listing
1	Royal Exhibition Building and Carlton Gardens, VIC	Cultural	2004
2	Sydney Opera House, NSW	Cultural	2007
3	Australia Convict sites	Cultural	2010
4	Great Barrier Reef, QLD	Natural	1981
5	Lord Howe Island, NSW	Natural	1982
6	Gondwana Rainforests of Australia, NSW/QLD	Natural	1986
7	Wet Tropics of QLD	Natural	1988
8	Shark Bay, WA	Natural	1991
9	Fraser Island, QLD	Natural	1992
10	Australian Fossil Mammal Sites (Riversleigh/Naracoorte)	Natural	1994
11	Heard and McDonald Island	Natural	1997
12	Macquarie Island, TAS	Natural	1997
13	Greater Blue Mountains Area, NSW	Natural	2000
14	Pumululu National Park, WA	Natural	2003
15	Ningaloo Coast, WA	Natural	2011
16	Kakadu National Park, NT	Cultural and Natural	1981
17	Willandra Lakes Region, NSW	Cultural and Natural	1981
18	Tasmanian Wilderness, TAS	Cultural and Natural	1982
19	Uluru-Kata Tjuta National Park, NT	Cultural and Natural	1987

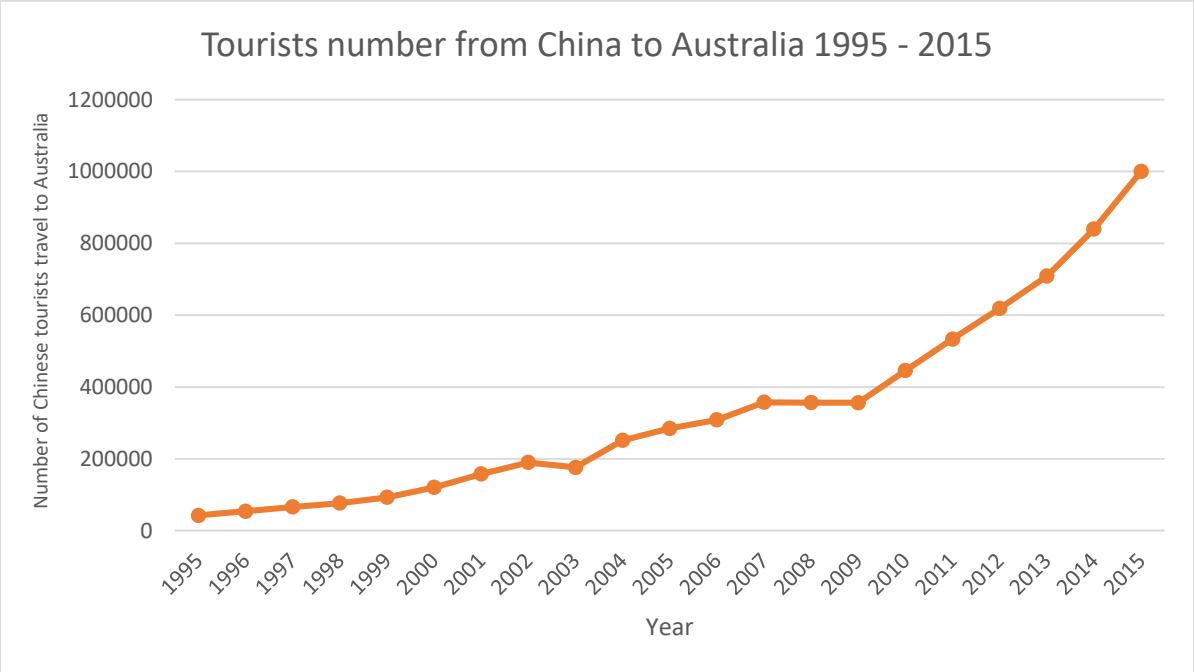
Source: Constructed using data from United Nations Educational, Scientific and Cultural Organization (2016).

1.3 China and Australia

China is one of the largest sources of inbound tourists for Australia. In 2014, China was the second largest inbound market for Australia and contributed the largest tourism expenditures which accounted for 19% of all tourism expenditures in the Australian market (Tourism Australia 2015). Australia became a popular travel destination for Asian visitors in the 1990s. In 1994-95, 28.2% of foreign visitors to Australia came from the Asian region

(Reisinger & Turner 1998b). In 1999, Australia became the first country to be granted Approved Destination Status by the Chinese government. The designation means China allows its residents to visit selected countries for personal purposes such as tourism (Austrade 2016). The Approved Destination Status scheme has led to the number of tourists from China to Australia increasing gradually. As Figure 1.2 shows, the number of tourists from China to Australia has been increasing steadily from 1995 to 2015, and reached one million a year in 2015 (UNWTO 2016). The main purpose of Chinese outbound tourists demand for Australia are holiday travels (over 50%), visiting friends and relatives (18%), business (11%) and others, such as education. The qualified inbound tour operators under the ADS scheme are the major handlers for Chinese tourists in Australia (Tourism Australia 2015).

Figure 1.2: Number of tourists from China to Australia each year, 1995 to 2015



Source: Constructed using data from United Nations World Tourism Organization (2016).

In addition, the China and Australia Free Trade Agreement, which came into force at the end of 2015, provides favourable policies under ANNEX III for the Australian and Chinese tourism industries (Department of Foreign Affairs and Trade 2015; Austrade 2016). Under this agreement, Australia is planning to relax the visa conditions for Chinese tourists and create more opportunities for working holiday visas. Moreover, Australian-owned tourism companies

are allowed to enter the Chinese market and gain more freedom in that market. One of the direct benefits for Australia is that Australian-owned travel companies can promote Australia as a desirable travel destination to Chinese tourists directly. Overall, the China-Australia Free Trade Agreement will bring more opportunities in tourism development to both China and Australia.

The main objective of this thesis is to consider the nature of Chinese demand for tourism to Australia. To investigate the role and contribution of the cultural and natural environment, this thesis constructs and estimates a model of tourism demand with particular emphasis on the role of a country's endowments of cultural and natural capital as determinants of demand. The aim of this study is to propose policy recommendations for the Australian tourism industry to ensure a sustainable relationship between China and Australia in tourism demand and supply.

This thesis is organised as follows. Chapter 2 reviews literature on tourism studies, focusing on the application of techniques that model and forecast the demand for tourism in different destination countries. Research on cultural tourism and eco-tourism is also reviewed. The research methodology and data are provided in Chapter 3, followed by the main findings and discussion. Policy recommendations are given in Chapter 4. Finally, a conclusion is presented in Chapter 5.

Chapter 2
Theoretical foundations

2.1 Introduction

The tourism industry has been researched from many different points of view. Scholars have examined the effect of tourism development on the economy, determinants of tourism demand and problems related to tourism development. In particular, demand modelling and forecasting have drawn the most attention from researchers. This chapter pays particular attention to research on the role of natural and cultural capital in influencing tourism demand (Arezki, Cherif & Piotrowski 2009). To achieve this goal, there are key questions to be clarified. Firstly, the importance of the tourism industry to economic growth needs to be quantified and the extent to which the cultural and natural characteristics of the destination country affect the decision making of Chinese tourists needs to be examined. The second section of this chapter explains the gain from tourism from both economic and non-economic perspectives. Thirdly, studies of tourism demand modelling and forecasting are reviewed. The role of natural and cultural capital in tourism research is explained in Section 2.4. Finally, a summary is provided.

2.2 The gain from tourism

A fundamental question is what a country can gain from tourism development, especially sustainable tourism development. Countries put significant effort into developing their tourism industry because tourism generates foreign exchange earnings for many countries (Sinclair 1998; Seddighi & Theocharous 2002; Eilat & Einav 2004; Sequeira & Maçãs Nunes 2008). The revenue generated from tourism can alleviate a country's balance of payment issues (Seddighi & Theocharous 2002). Sinclair (1998) pointed out that developing countries have turned to the development of tourism as an alternative source of growth. In these countries, resources have been allocated to construct human-made capital such as infrastructure, airports, local transport and buildings to facilitate increasing demand for long-haul tourism. Anderson (2015) provided evidence that tourism development makes a positive contribution to the economy, arguing that tourism in rural Africa, such as Kilimanjaro Tanzania, contributed to the reduction of poverty. In this particular case, tourism, especially regional cultural tourism,

expanded the local labour market, and led to construction of parks and other facilities. Developing countries may benefit more from tourism than other developed countries (Sinclair 1998; Seddighi & Theocharous 2002; Sequeira & Maçãs Nunes 2008). Benefits for developed countries from tourism are also documented. Forsyth, Dwyer & Spurr (2014) studied the Australian tourism industry and noted that the tourism industry made a significant contribution to Australia from gross value added and employment during 2010 to 2011.

Importantly, economic benefit is not the only reason for the promotion of tourism. As Richards and Wilson (2006) noted, tourism promotes the culture of destination countries and gives international tourists a perception of a destination. From the origin country's perspective, an advanced tourism market provides its citizens with opportunities to enjoy recreational activities, leisure and an unique cultural experience (Qiu, Xu & Li 2016). A tourism industry also has the potential to provide opportunities for long term sustainable development through increased employment, infrastructure creation, cultural revitalisation and support for environmental conservation initiatives (Bennett et al. 2012; Butler & Hinch 2007; Zeppel 2006). Particularly, the Ecologically Sustainable Development Working Group (1991) mentioned that tourism aids the sustainability of Australian cultural heritage by stimulating the restoration and conservation of a variety of heritage properties, such as Port Arthur and The Rocks of Sydney. However, as an important component of tourism activities, there is little literature on the role of culture in destination countries, especially in Australia.

2.3 Modelling tourism demand

Forecasting and modelling plays a crucial role in tourism management for both the private and the public sector. Tourism research has focused on modelling and forecasting tourism demand because accurate forecasting and modelling could help the private sector to avoid a shortage or surplus in goods and services (Burger et al. 2001). Further, tourism increases some countries' gross domestic product, making modelling of tourism important in these countries (Akın 2015). Song and Li (2008) summarised and discussed different tourism modelling and forecasting techniques worldwide, from both an academic and a practical point of view. A variety of approaches have been used to study tourism demand, including both qualitative and quantitative tools.

In this study, several main tourism modelling approaches are reviewed. Firstly, the characteristics approach under Lancaster (1966)'s new approach to consumer theory has been widely adopted and modified to fit tourism demand modelling. Secondly, the Almost Ideal Demand System (Deaton & Muellbauer 1980) has drawn some scholars' attention to tourism research. However, Paptheodorou (2001) highlighted that the traditional demand theory may not be an appropriate method to modelling tourism demand because it may not be able to take evolutionary features of tourism products into account. Song and Li (2008) also mentioned that literature applying the Almost Ideal Demand System in tourism modelling is limited. Thirdly, the application of international trade theory is also a common approach for tourism demand research, such as the gravity model together with panel data analysis. Apart from these approaches, time series and panel data regression models also have been adopted to study regional tourism modelling. The empirical literature with application of the tourism demand modelling discussed in this study is summarised in Table 2.1 below.

Table 2.1: Summary of empirical literature on tourism demand modelling and forecasting

Study	Study period	Region	Research methodology
Akın (2015)	2001-2011 (Monthly)	Turkey	Seasonal Autoregressive Integrated Moving Average, Support Vector Regression and Neutral Network models
Brida & Risso (2009)	1987-2007	South Tyrol	Dynamic panel data analysis
Chin (2009)	1995-2005	Malaysia	Panel data analysis
Divisekera (2003)		United Kingdom, Australia, New Zealand, Japan, United States	Tourist's utility function, Price Independent Generalised Log-Linear (Choice Theory)
Eilat & Einav (2004)	1985-1998	Worldwide	Three-dimension panel data analysis
Garín-Muñoz (2006)	1992-2002	Canary Islands	Dynamic panel data analysis
Garín-Muñoz & Amaral. (2000)	1985-1995	Spain	Unbalanced panel data analysis
Garín-Muñoz & Montero-Martín (2007)	1991-2003	Balearic Island	Dynamic panel data analysis
Han, Durbarry & Sinclair (2006)	1960s-1990s	US/European	Almost ideal demand system model, different price indices
Keum (2010)	1990-2002	South Korea	Gravity model, Linder Hypothesis
Khadaroo & Seetanah, (2008)	1990-2000	Europe, America, Asia and Africa	Gravity model, Panel data
Kim & Moosa (2005)	1981-2000 (Seasonal)	Australia	Seasonal Autoregressive Integrated Moving Average, Harvey's structural time series
Kusni, Kadir & Nayan (2013)	1995-2009	Malaysia	Panel data analysis
Ledesma-Rodriguez, Navarro-Ibabez & Peter-Rodriguez (2001)	1978-1997	Tenerife	Panel data analysis
Massidda & Etzo (2012)	1998-2007	Italy	Panel data analysis
Morley (1992) *			Indirect utility function (Choice Theory)
Morley (1998) *	1972-1992	Australia	Theoretical dynamic model and economic utility theory
Morley, Rosselló & Santana-Gallego (2014) *			Theoretical foundation for the Gravity equation
Naude & Saayman (2005)	1996-2000	Africa	Panel data analysis
Neumayer (2010)	1995-2005	Worldwide	Log-linearised gravity model, Panel data
Papatheodorou (2001)			Characteristics approach
Rugg (1973) *	January 1969 and July 1969	European countries	Modified Lancaster's characteristics approach
Seddighi & Theocharous (2002)	2001	Cyprus	Lancaster's characteristics approach, Koppelman's consumer transaction model
Seetaram (2010)	1991-2007	Australia	Dynamic panel cointegration approach
Shan & Wilson (2001)	1987-1998 (Monthly)	China	Time series, Granger causality test
Song et al. (2010)	1981-2006	Hong Kong	General-to-Specific modelling approach

Note: Theoretical framework marked as *.

Lancaster (1966)'s research on a new approach to consumer choice theory has been used widely as a framework to examine tourism demand. Rugg (1973) first introduced Lancaster's characteristics approach into tourism research. Rugg (1973) found Lancaster's original formulation to be appropriate for most commodities, but it was inappropriate for the travel destination commodity. The author argued that it was not possible for tourists to consume or possess a destination, so utility cannot be generated from consuming or possessing destinations by tourists. Thus, Rugg developed a model under Lancaster's framework that can analyse the consumer's choice of journey destination and used this model to evaluate the determinants of the tourists travelling between nine European countries. The author used the utility function below:

$$U = U(z) \tag{2.1}$$

Subject to $z = b(d)$

$$T \geq c \times d + t \times n$$

$$Y \geq p_d \times d + p_t \times m$$

Notably, vector z measured the destination's characteristics such as pleasant climate and beautiful scenery. In addition, the time constraint in Rugg (1973) was a sum of the total time spent on visiting destinations and the total time spent on transport. The budget constraint simply considered transport cost denoted by $p_t \times m$ and total cost spent on visiting destinations. Rugg also adopted least squares regression analysis to test the model empirically and concluded that this model was appropriate to explain consumers' choice of travel decision. Rugg's characteristics approach for the tourism industry has been adopted and modified by many other researchers to conduct studies in tourism demand analysis. However, this concept can be very difficult to use, especially at the aggregate level. For instance, with developments in information systems, tourists' decision making process became more complex than in the 1970s. Advertisements, friends' experiences, education level and many other factors have gradually changed consumers' consumption habits, making the original variables in $z = b(d)$ correlated with each other. Moreover, Rugg underestimated the importance of time in tourism demand, so a time lag variable should be considered in the model. Preferred destination characteristics may vary in different origin countries which can bring difficulties and uncertainties to the forecast.

More recently, Morley (1992) constructed an indirect utility function under Lancaster's framework as a microeconomic theoretical model for international tourism demand. This utility function was used in transport economics to model choice decisions. The model can be divided into two parts. The first part only focused on a single tour utility model. In Morley's study, a tour can be referred to as a trip where a tourist stays at one destination or multiple destinations within one trip. Followed by the general utility function, the time constraint was constructed as $t + \hat{t} \leq T$, where $\hat{t}$ is the time spent in transit, and t stands for time spent in the destination. The budget constraint was shown as:

$$p' \times q + c_0 t + f \leq Y. \tag{2.2}$$

Income Y can be spent on quantities q at price p and f is the spending on travel. Since the first part of the utility function assumed that utility was only derived from time t, a price of c_0 per unit of time t on tour needs to be added. By maximising the utility function $\max U, (t, q,)$ subject to the time and budget constraint, the maximised utility level can be written as:

$$V_r^* = \vartheta_r(P, c_0, \hat{t}, f, T_r, Y_r). \tag{2.3}$$

Although it is a simple equation, it is the basis of tourism demand measurement. The second part was more complicated because it involves different multiple tours. It is important to know how tours' characteristics may influence utility. Morley (1992, p. 259) noted "different tours will yield different utilities, because of attributes of the tours themselves and their contribution to the utility of the individual". Therefore, the utility should be derived based on these tour characteristics. Morley's model shared common points with Rugg's work and may have similar drawbacks.

In a later paper, Morley (1998) modified the previous model and stressed the importance of the time constraint in modelling tourism demand by taking the lagged dependent variable into account. This was, in essence, a theoretical dynamic model with economic utility theory. Morley used Australia as the destination country and other countries such as New Zealand, the United States, the United Kingdom, Germany, Malaysia, Japan and Canada as source markets for Australia. The results indicated that a change in income has a similar influence on demand from all of these origin countries. But the elasticity of fare and prices was different across different origin countries. Notably, Morley (1998) also mentioned that the domestic pilots' strike in Australia in 1989 had a negative impact on the number of tourists.

Dwyer et al. (2006) also noted the Severe Acute Respiratory Syndrome (SARS) virus in 2003 led to a slump in inbound tourism demand in Australia from April to June 2003. Special events at a certain time period may have effects on tourists' decisions, and hence major events may need to be considered as potential factors that could impact tourism demand.

Papatheodorou (2001) also constructed a utility model to explore why people travel to different places. The author also adopted Lancaster's framework to explain that utility can be derived from the consumption of the products' characteristics which was a similar concept to Rugg (1973) and Morley (1992). The formulation of utility maximisation was also consistent with these earlier papers. But, based on Rugg and Morley, Papatheodorou (2001) improved the modelling system by including competition, quality information and advertisements. Similarly, Divisekera (2003) also conducted research about the economic determinants of demand for international tourism which was based on the consumer theory of choice. Divisekera (2003) pointed out that tourism can be considered a commodity which can be traded globally, although its goods and services may not cross borders in a physical sense. Tourism and international trade are closely connected: some researchers have treated tourism as a very special trade and have studied the internal relationship between interactional tourism and international trade (Hazari & Sgro 1995; Shan & Wilson 2001). Another similar approach by Seddighi and Theocharous (2002) combined the model of the Lancaster characteristics approach with Koppelman's consumer-oriented transport planning approach.

The Almost Ideal Demand System (Deaton & Muellbauer 1980) is another approach that has been adopted in tourism research. The Almost Ideal Demand System is a system of demand equations rather than single-equation econometric models; this system was used initially to examine consumer behaviour. In tourism research, the Almost Ideal Demand System can be adopted to study tourism demand from a source market among a number of neighbouring destinations, in which tourism expenditure is usually used as an explanatory variable (Song & Li 2008). Based on the nature of the Almost Ideal Demand System, it seems to be more suitable for substitution effects and competition analysis. Li, Song and Witt (2004) forecasted tourism demand for Western Europe by employing the linear Almost Ideal Demand System approach. Later, Han, Dubarry and Sinclair (2006) adopted the Almost Ideal Demand System with different price indices to study the United States tourism demand for European

countries. As mentioned earlier, the Almost Ideal Demand System may suffer from a few drawbacks as a tourism demand modelling approach (Papatheodorou 2001), thus, the application of the Almost Ideal Demand System in tourism demand studies is less popular compared with other quantitative methods (Song & Li 2008).

International trade theory has a close relationship with international travel flows, even if it may provide only a partial explanation for tourism (Gray 1970). The gravity model is a basic model first used by Jan Tinbergen (1962) which was initially intended to measure international trade flows. There is no doubt that tourism is a "complex trade" (Lickorish et al. 1991; Teo & Huang 1995). Keum (2010) introduced the gravity model into international tourist flows by studying tourism arrivals in South Korea from its 28 major trading partners globally. Khadaroo and Seetanah (2008) studied the role of transport infrastructure in international tourism by employing a gravity model. They argued that the gravity model is applicable in tourism studies and the result proved the robustness of the gravity model in both trade and tourism flows in South Korea. Morley, Rossello and Santana-Gallego (2014) also showed that the gravity model is a valid method to examine foreign direct investment, international trade and tourism demand. The basic gravity model measures international tourist flows between different regions. The equation can be expressed as follows:

$$F_{ij} = B\frac{(GDP_i)^{\beta_1}(GDP_j)^{\beta_2}}{(DIST_{ij})^{\beta_3}}U_{ij}. \qquad (2.4)$$

The left-hand side represents the international trade flows and GDP denotes the gross domestic product in both country i and country j. Distance between country i and j is shown by $DIST_{ij}$ and U_{ij} is an error term. By taking the log of both sides, the estimation equation can be summarised as follows:

$$lnF_{ij} = \beta + \beta_1 lnGDP_i + \beta_2 lnGDP_j + \beta_3 lnDIST_{ij} + \varepsilon_{ij}. \qquad (2.5)$$

Since the error term is normally distributed, the E (ε_{ij}) is equal to zero. However, based on Morley, Rossello & Gallego (2014), the gravity model may suffer from the lack of theoretical foundations. Thus, the authors recovered the theoretical foundation and showed that it is possible to apply the gravity equation to tourism demand. In order to fit tourism studies better, the gravity model has been modified as follows (Keum 2010; Morley, Rossello & Santana-Gallego 2014):

$$\ln(Tourism_{ijt}) = \beta_0 + \sum_{s=1}^{s} \alpha_{is}\, lnZO^{s}{}_{i} + \sum_{p=1}^{p} \gamma_{jp}\, lnZD^{P}{}_{j} + \sum_{r=1}^{r} \gamma_{ijr}\, lnCost_{ijt} \quad (2.6)$$

Many traditional tourism research studies may omit some destination-linked factors. Under this circumstance, the gravity specification could have some advantages. The ZO^{s}represents the push force for outbound tourists from the origin country, while ZD^{P} refers to a vector of pull force for inbound tourists to destination *j*.

Panel data can be used to examine a more comprehensive dataset with multiple individuals across multiple periods of time. As illustrated above, the gravity model is always associated with the panel data analysis. Garín-Muñoz and Amaral (2000), Eilat and Evinav (2004), Brida and Risso (2009) and Seetaram (2010) estimated the tourism demand in different countries by using panel data techniques; moreover, these studies put more attention on elasticity. Garín-Muñoz and Amaral (2000) conducted research by measuring the impact of the economic determinants on tourism demand in Spain from 1985 to 1995. The authors used panel data techniques to estimate elasticity of income per capita, exchange rate and prices of tourism products over the demand of tourism services in Spain. The authors identified five important variables: income on the import side, price of goods or services in the destination countries, exchange rate, transport costs, and population in the origin country. Ledesma-Rodriguez, Navarro-Ibabez and Peter-Rodriguez (2001) used panel data analysis to research tourism demand in the Tenerife region and concluded that tourism demand for Tenerife has high elasticity with respect to real income per capita.

Eilat and Evinav (2004) attempted to provide an explanation of the determinants of international tourism by fitting tourism into a form of trade in services. The authors adopted a three-dimensional panel data analysis to examine which factors were the most important variables for tourism demand. The findings indicated that in developed countries, the price elasticity was approaching one. This research showed destination risk was not significant for trade in goods. Other factors identified by the authors were fashion, common border, common language and short distance. However, according to Tourism Australia (2015), a destination's safety level has been ranked as one of the top five factors that have a significant influence on international tourists' decision making when they are selecting a travel destination. One

possible reason for this result could be that the domestic safety levels were similar in the sample countries that were selected by Eilat and Evinav (2004).

Brida and Risso (2009) followed Garín-Muñoz and Amaral (2000)'s method and modified this dynamic methodology by building up a model based on both cross-section and time series data to study the German demand for tourism in South Tyrol, Italy. Again, Brida and Risso (2009) also focused on income elasticity and price elasticity which shared a similar focus point to Garín-Muñoz and Amaral (2000) and Eilat and Evinav (2004). In an Australian tourism market, Seetaram (2010) adopted the dynamic panel cointegration approach to examine international tourist flows into Australia between 1991 and 2007. Seetaram (2010) used income, real exchange rate and airfares as demand determinants to study elasticity of tourist arrivals to Australia. The finding showed that the demand is inelastic to its determinants in the short run and elastic in the long run.

Other studies investigating international tourism demand, such as international tourism demand in Malaysia, Balearic Islands and Canary Islands using panel data, highlighted that the price variable should be the tourism price index rather than the normal consumer price index (Chin 2009; Garín-Muñoz 2006; Garín-Muñoz & Montero-Martín 2007). The tourism price index has been measured by the formula:

$$TP_{it} = \left(\frac{CPI_{Dest}}{CPI_{Origin}}\right) * \left(\frac{1}{ER_{\frac{Dest}{Origin}}}\right) \quad (2.6)$$

The $ER_{\frac{Dest}{Origin}}$ represents the number of monetary units of the destination by each monetary unit of origin countries. Furthermore, Chin (2009) added trade openness into the regression model and measured this variable using:

$$TO_{i,t} = (EX_{i,t} + IM_{i,t})/GDP_t \quad (2.7)$$

Autoregressive integrated moving average modelling (ARIMA) and the seasonal autoregressive integrated moving average model (SARIMA) are two popular time series techniques that have been widely adopted in tourism studies (Shan & Wilson 2001; Lim & McAleer 2002; Song & Li 2008; Akın 2015). Time series is a common tool to analyse the

variables' historical trend and pattern over time, and can be used to predict future tourism demand based on past trend and patterns identified in the model. A time series model usually requires historical data, rather than experimental choice data, so it is also a less costly method to evaluate tourism demand (Song & Li 2008).

In the Australian market, Lim and MacAleer (2002) studied international travel demand for Australia, employing the time series forecasting method. The authors adopted current and historical seasonally unadjusted tourism arrivals data from Malaysia, Singapore and Hong Kong to Australia. Autoregressive integrated moving average was used in this research and the paper concluded that there may not be much improvement in empirical studies from employing the ARIMA method compared to simple forecasting techniques, even though the ARIMA model is able to predict tourist arrivals from these places to Australia. Shan and Wilson (2001) also researched the China market by employing time series techniques. Further, Kim and Moosa (2005) compared direct forecasting and indirect forecasting by conducting seasonal ARIMA models. It seems that time series data can be used to test the accuracy of tourism demand models. More recent research conducted by Akın (2015) modelled Turkish tourism demand in ten countries from 2001 to 2011. Akın collected monthly tourist arrival data and selected the seasonal ARIMA method to identify the "better" algorithm for tourism modelling. The authors introduced a novel systematic approach to test whether the SARIMA is an appropriate model for tourism forecasting. Akın (2015) concluded the SARIMA model is not the best model for their study.

However, tourism demand will not only be influenced by the origin country's income level and the destination country's price level. According to previous studies, there are several factors which can have impacts on tourists' decisions. Tourism demand may be influenced by marketing expenditures, personal preferences, habit persistence, origin population, special events, political tensions and destination image (Song & Witt 2000; Prideaux 2005). However, the majority of research has focused on economic factors such as income and price of tourism products (Song et al. 2010). The quality of a destination's attractiveness and cultural factors are both considered as determinants for destinations' competitiveness by Prideaux (2005). As tourism activities could be based on natural environment and local culture in a destination country, there is no doubt that these two factors could have an impact on international tourists'

decisions. Or in other words, personal tastes in the travel destination are related to the destination's characteristics, such as traditions, customs and natural sightseeing. Thus, cultural and natural factors may deserve attention in tourism studies.

2.4 The influence of cultural and natural capital on tourism demand

As noted earlier, there is only limited research on the role and contribution of cultural and natural capital in tourism demand. Before discussing the influence of cultural and natural capital on tourism demand, we consider the characteristics of natural and cultural capital, and the relationship between natural and cultural capital and tourism.

Natural aspects of the tourism 'good' are often integrated with cultural factors. Research by Lück (2008) argues that tourism activity is a process of production. Tourists are producing a tourism experience by using natural capital, cultural capital and human-made capital as inputs. Lück (2008) outlines five types of capital in the tourism industry: natural capital, cultural capital, human-made capital, labour capital and financial capital. Tourists rely on these capital assets to produce a quality tourism experience, such as environmental quality, availability of suitable accommodation and restaurants, experienced tour guides, the level of safety, availability of cultural attractions and monetary assets. Tourists can have different preferences for both cultural capital and natural capital.

The term natural capital was first introduced by Schumacher (1973). Increasingly people have become aware of the effect of natural environment issues on the economy, and the phenomenon of natural capital has been accepted by many economists (Throsby 1999). Costanza and Daly (1992, p. 38) pointed out that natural capital can be interpreted as "a stock that yields a flow of valuable goods or services into the future". Moreover, the term natural capital played a core role in sustainability development and ecological economics (Costanza 1992). Natural capital has been given a broader definition recently, as the World Forum on Natural Capital (2015) proposed that natural capital can be understood as the world's stock of natural assets such as soil, air, water and all other living things. A strong sustainability position may have a close relationship with natural environment conservation. On the importance of

natural capital in sustainable development, Buckley (1994) linked the natural environment and the tourism industry in four ways. Firstly, natural environments can act as major marketable tourism attractions for tourists. Secondly, tourism operators should then take responsibility to minimise the negative impact of tourism activities on the environment. Thirdly, monetary resources or non-monetary materials which are generated from tourism activities may contribute directly or indirectly to environmental conservation. Finally, the attitude of tourist operators to the environment and environmental education is strongly related to the attitude of tourists towards the environment.

As well as the association between natural capital and tourism, the link between cultural capital and tourism has also been identified recently. The concept of cultural capital was firstly proposed by Bourdieu in the 1960s. Bourdieu introduced three forms of cultural capital: embodied state, objectified state and institutional state. Throsby (1999, p. 6) identified cultural capital as "the stock of cultural value embodied in an asset". According to Throsby, cultural capital assets contain tangible and intangible forms. In particular, cultural heritage sites can be seen as tangible cultural capital (Throsby 1999; Ginsburgh & Throsby 2006). Other things like ideas, traditions and beliefs all can be categorised as intangible cultural capital. In later research, Zhang et al. (2015) conducted a study on the relationship between cultural capital and destination image by comparing New York City and Tokyo. The authors divided cultural capital into three forms: static, dynamic and embodied. Static cultural capital includes the tangible cultural landscape and heritage sites, while festivals and cultural activities belong to dynamic cultural capital. Embodied cultural capital can be understood as beliefs and values.

In the tourism industry, the most notable cultural capital are heritage sites that are listed on the World Heritage List and on lists by national organisations, such as the Australia National Heritage List which is a list of natural, historical and indigenous properties of outstanding significance to the nation (Australia Government Department of the Environment and Energy 2016). Cultural heritage is a valuable asset for humanity. However, there is a critical argument about whether cultural capital can bring economic benefit. Showing that cultural heritage sites can have an impact on tourism activities may indicate that cultural capital not only contributes non-economic benefits, but also economic benefits to a nation. Tisdell and Wilson (2002) argue that properties that are listed on WHL may have significant branding effects on tourism

stimulation. Furthermore, Zhang et al. (2015) presented "cultural capital" images on websites to provide potential travellers with a unique perception and pointed out that cultural capital in cities plays an important role in creating tourists' perceptions of destinations. They concluded that cultural capital has a very close relationship with destination image, whereas embodied cultural capital establishes a unique destination image in a more direct way.

Different methodologies have been used to test the effect of the World Heritage List on both domestic and international tourism and visitation. Empirical modelling using time series and cross-sectional techniques is one of the most common methods in this field (Arezki, Cherif & Piotrowski2009; Yang, Lin & Han 2010; Huang, Tsaur & Yang 2012, Su & Lin 2014). There are also other methodologies such as online questionnaires (Hardiman & Burgin 2013) and time series of historical visitation comparison between the listed heritage sites and the control sites (Buckley 2004).

Huang, Tsaur & Yang (2012) used a gravity model, together with panel data analysis, to investigate determinants of the flow of international tourists to Macau. The authors focused on contrasting the period before and after World Heritage listing of 2005. Before 2005, there were no properties listed on the WHL in Macau. They employed the gravity equation and the World Heritage List factor was captured by a dummy variable equal to one for 2005 and the years after 2005. However, the empirical result does not provide strong support that being on the World Heritage List will induce more international tourists to a country. The coefficient for the World Heritage List was positive, but the authors doubted the tourism-enhancing effect was due to the World Heritage List. Yang, Lin and Han (2010) conducted research on international tourist arrivals in China by employing the gravity model as well. In their study, the number of cultural and natural heritage sites listed on the WHL and national recognised sites are included separately as key variables. Their final result also showed that World Heritage List sites played a limited role in inducing more tourists from foreign countries. In a more recent study, Su and Lin (2014) adopted a panel data model to examine the role of natural and cultural heritage sites listed on the WHL in international tourist's arrivals worldwide. The authors concluded that for one or more cultural or natural heritage sites possessed by a country, it is expected to increase its annual international tourist arrivals by 382.637. Furthermore, this study also showed that

both cultural and natural world heritage sites could have significant enhancing effect on inbound tourism.

Countries with abundant natural and cultural capital may have an advantage in specialising in tourism (Brau 2003) as cultural and natural capital can be strongly associated with sustainable tourism development. However, with a rapidly developing tourism industry, it is difficult for the tourism industry to remain sustainable. On the impact of tourism on natural capital, many studies note the threats of overwhelming tourism on natural sites (Farrell & Runyan 1991; Collins 1999; Piciu & Trica 2011), including water quality, land use, vehicle emissions and others. Sustainability is clearly linked to environmental conservation, preservation of biodiversity and maintaining the quantity and quality of natural capital stock over time (Pearce & Turner 1990; Collins 1999). There are examples of how rapid tourism development has a negative effect on natural capital. For instance, expansion of accommodation surrounding the Great Barrier Reef in northern Queensland damaged water quality nearby, with some evidence that increased pollution accelerated the damage of coral in the Great Barrier Reef (Shafer & Inglis 2000). Research conducted in Europe shows that facilities to accommodate tourists such as swimming pools and golf courses are increasing pressure on scarce water resources. Research indicated that one tourist consumes 300 to 880 litres of water per day and generates 180 litres of wastewater per day (Piciu & Trica 2011). Further, the construction of tourism infrastructure will also affect the local area's water quality.

Sustainable tourism planning has become more significant in the preservation of natural and cultural capital. Du Cros (2001) mentioned the fundamental problem for sustainable planning is to identify the most appropriate heritage places for tourism. Examining the relationship between commercial expectations and conservation management is essential. Another problem is that many rural areas in the world have started to redefine themselves as consumption-oriented places and are gradually commodifying the old tradition and sites (Cloke 1993). For instance, many historical buildings are renovated for business purposes to better serve tourists. Functioning as hotels, restaurants or event venues, some of these buildings have retained their historical values, but many others have lost their original appearance and unique cultural identity. Furthermore, as tourism brings opportunities and potential to local people and businesses, more and more areas are promoted for tourism by imitating successful business

models. In the end, their ability to produce a unique cultural image for themselves diminishes. Instead, these countries move into the "serial reproduction" of culture (Harvey 1989). Reproduction of the culture will eventually lead a country to lose its identity. This is also similar for natural heritage sites.

2.5 Summary

In summary, tourism has been studied from different aspects by scholars all over the world. Tourism is closely associated with economic growth, as this relatively less polluting industry can bring both economic and non-economic benefits to a country. Modelling and forecasting attract the most attention from scholars due to their appropriateness for tourism management in both the private and public sectors (Burger et al. 2001). Many studies, such as Rugg (1973), Papatheodorou (2001), Divisekera (2003) and Seddighi and Theocharous (2002), have focused primarily on using consumer choice theory to explain tourism demand. In more recent studies, statistical techniques such as time series and panel data regression have been widely used, such as Lim and MacAleer (2002), Kim and Moosa (2005), Shan and Wilson (2001) and Akin (2015). However, time series analysis may not be the best method to examine the effect of cultural and natural capital on tourism demand because cultural and natural capital is relatively time-invariant compared with gross domestic product, exchange rate and other potential determinant of tourism. Keum (2010) and Morley, Rossello and Santana-Gallego (2014) proposed that the gravity model can be used instead to examine tourism demand. There are also many researches adopted panel data regression techniques to model international tourism demand, for instance, Chin (2009), Eilat and Evinav (2004) and Seetaram (2010). With respect to the limited literatures that included cultural and natural components in tourism demand, Yang, Lin and Han (2010), Huang, Tsaur and Yang (2012) took the World Heritage List into account when testing international tourism demand to Macau and mainland China by using panel data analysis. However, they both argued that the cultural and natural world heritage sites may have limited effect on Macau and China inbound tourism. On the other hand, Su and Lin (2014) disagreed and proved that both cultural and natural heritage sites play core role in inbound tourism worldwide. In general, panel data regression has some advantages because it has the ability to examine the question from both time series and cross-sectional dimensions (Yang & Lin 2011).

There are some common limitations that exist in the literature. Firstly, most scholars focused more on tourists' income level, holidays and other endogenous factors when they were examining tourism demand. Although cultural and natural capital could be important factors in tourism, relatively little attention has been given to them in the literature. Further, compared with natural capital and cultural capital in tourism research, most studies focused more on natural tourism such as wildlife parks (Anderson 2015). As a consequence, cultural factors seem to be neglected to some extent. To maintain sustainable tourism development, both natural and cultural capital need attention, requiring a comprehensive analysis of demand incorporating both types of capital for sustainable tourism development. In addition, most of the studies focused on inbound tourism, especially for those which included cultural and natural factors. One issue that deserve some attention: inbound tourists from different countries with distinct backgrounds may present different consumption habits when selecting their travel destination. For this reason, we concentrate on Chinese outbound tourism demand of cultural and natural capital among 13 popular destination countries for Chinese tourists.

Chapter 3
Methodology, data and results

3.1 Introduction

This research provides preliminary insight into Chinese tourism patterns by observing the relationship between Chinese outbound tourism and its corresponding determinants. In particular, the analysis tests whether cultural and natural capital are important for Chinese tourists. 13 popular destination countries for Chinese international tourists have been selected: Australia, Germany, Italy, Japan, Malaysia, New Zealand, Philippines, Russia, Thailand, South Korea, United Kingdom, United States of America and Vietnam. A fixed effects model (a simple panel data regression) is used to test the effect of cultural and natural capital on Chinese tourists' decision-making when they are selecting a travel destination. To avoid seasonality problems, and also because of the data availability, annual data is used in this study. Data used in the research is mainly sourced or provided by UNWTO, UNESCO World Heritage List, World Bank database, CEPII database, International Monetary Fund, National Bureau of Statistics of China and the Institute of Economics and Peace. This chapter is organised as follows: Section 3.2 introduces the regression model and discusses the selected variables and Section 3.3 explains why this model is chosen. Results are discussed in Section 3.4. Limitations of this study are provided in the last section.

3.2 Simple regression model

To investigate whether cultural and natural heritage sites influence Chinese tourists' decision making when they are choosing international travel destinations, a simple regression model is estimated as below followed by the general equation in a panel data framework:

$$lnTOUR_{jt} = \beta_0 + \beta_1 lnPCGDP_t + \beta_2 lnPOP_t + \beta_3 EXAD_{jt} + \beta_4 GPI_{jt} + \beta_5 lnDIST + \beta_6 CUL_{jt} + \beta_7 NAT_{jt} + \varepsilon_{jt} \quad (3.1)$$

The dependent variable is the natural logarithm of the number of tourists from China to country *j* within year *t* which is denoted as $TOUR_{jt}$. Subscripts *j* and *t* represent the destination

country and the time period respectively. This dataset including Chinese tourist arrivals in these 13 countries ($j = 1,2,3 \ldots \ldots 13$) is based on data provided by the United Nations World Tourism Organization (UNWTO). In order to keep the consistency of the data, the time period in this study is from 2007 to 2014 (t = 1, 2…….8). Lastly, the error term is represented by ε_{jt} which includes the unobserved country-specific variables.

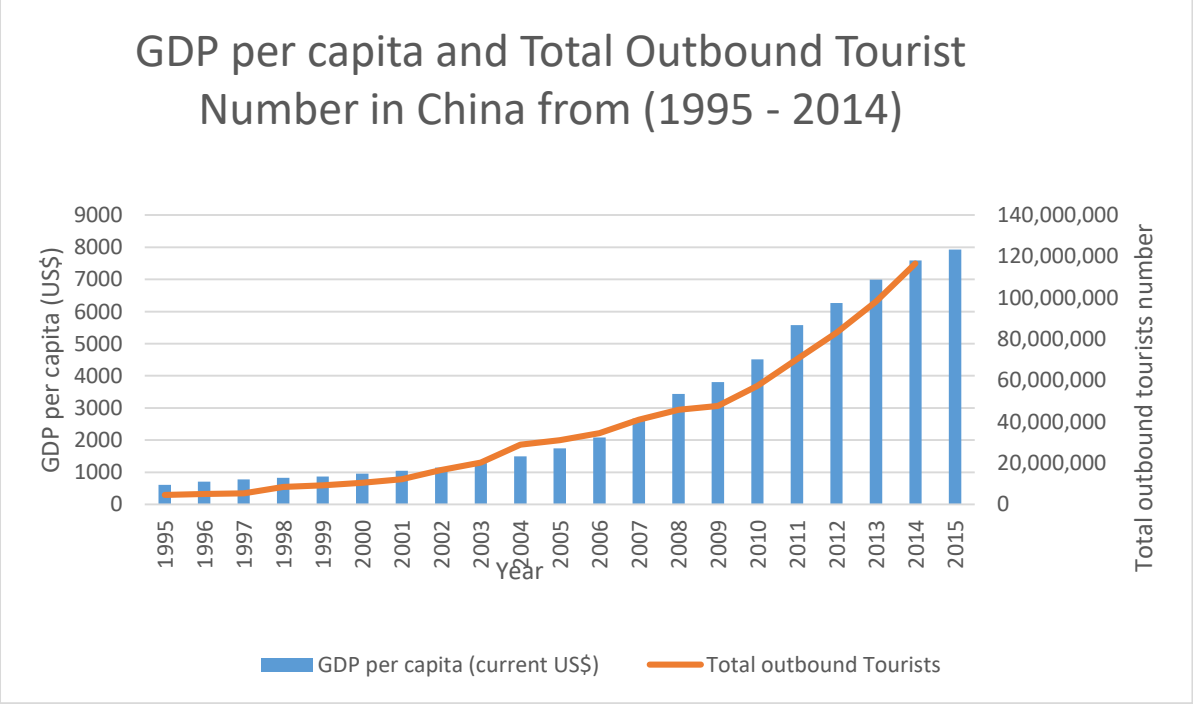
In regard to the independent variables, the determinants for Chinese tourism outflow are suggested by international tourism flow studies, as there is relatively little research on the outflow of Chinese tourists in particular. Factors that may influence tourists' choice of destination country could be both economic and non-economic (Massidda & Etzo 2012). Most investigations focus on how economic variables affect tourists' choices. However, when the economy in an origin country develops to a certain level, non-economic factors are likely to be considered more by tourists. In these circumstances, economic factors may not be able to explain tourism flows as effectively as destinations' qualitative characteristics (Eilat & Einav 2004; Zhang & Jensen 2007; Khadaroo & Seetanah 2008; Massidda & Etzo 2012). Table 3.1 summarises the variables used in the study.

In the following paragraphs we discuss the reasons for choosing the various independent variable in the model. Firstly, in regard to the *income level* in the origin country, discretionary income is possibly the most appropriate measurement to use in tourism studies. It is defined as the income remaining from total income after deducting necessary household spending (Lim 1997). However, discretionary income data for China is difficult to obtain in practice. Hence, it is necessary to use gross domestic product (GDP) per capita in current US$ (PCGDP), which is argued to be a suitable variable to measure income level by many scholars (Garín-Muñoz & Montero-Martín 2007; Keum 2010; Seetaram 2010; Massidda & Etzo 2012). In this study, GDP per capita is used to measure Chinese tourists' aggregate income level, and the change in the GDP per capita is used to capture income change. This variable is denoted as PCGDP. The GDP indicators are available on the World Bank database. Figure 3.1 shows the number of total outbound Chinese tourists has been increasing significantly from 1995 to 2014 together with continuous growth in GDP per capita. Thus, fast growth in China's economy may have a positive contribution to total outbound tourism demand.

Table 3.1: Definition and sources of variables used in the study

Variable	Definition	Source of data
TOUR	Tourist outflows from China to country *j*	UNWTO (2016)
PCGDP	GDP per capita ($US) change in China	World Bank 2016
POP	Population change in China	World Bank 2016
EXAD	CPI Adjusted Exchange Rate, calculated by $\frac{CPI_{Origin}}{CPI_{Destination}} \times ExRate$	International Monetary Fund 2016; National Bureau of Statistics of China 2016
GPI	Global Peace Index	Institute of Economics and Peace 2016
DIST	Geographical distance between China and country *j*	CEPII Database 2016
$CUL_{j\,t}$	Cultural heritage capital in country *j* (listed in World Heritage List)	UNESCO World Heritage Centre 2016
$NAT_{j\,t}$	Natural heritage capital in country *j* (listed in World Heritage List)	UNESCO World Heritage Centre 2016

Figure 3.1: GDP per capita and total outbound tourists from China, 1995 to 2014



Source: World Bank Database (2016); UNWTO (2016).

Secondly, *population change* is added to capture the potential market size change in China which is denoted as POP. The market size is argued to have a positive impact on tourism, as the market size becomes larger, the number of potential customers or tourists also grows (Naude & Saayman 2005; Yang, Lin & Han 2010; Huang, Tsaur & Yang 2012; Su & Lin 2014). Data on the population for the origin country is taken from the World Bank database.

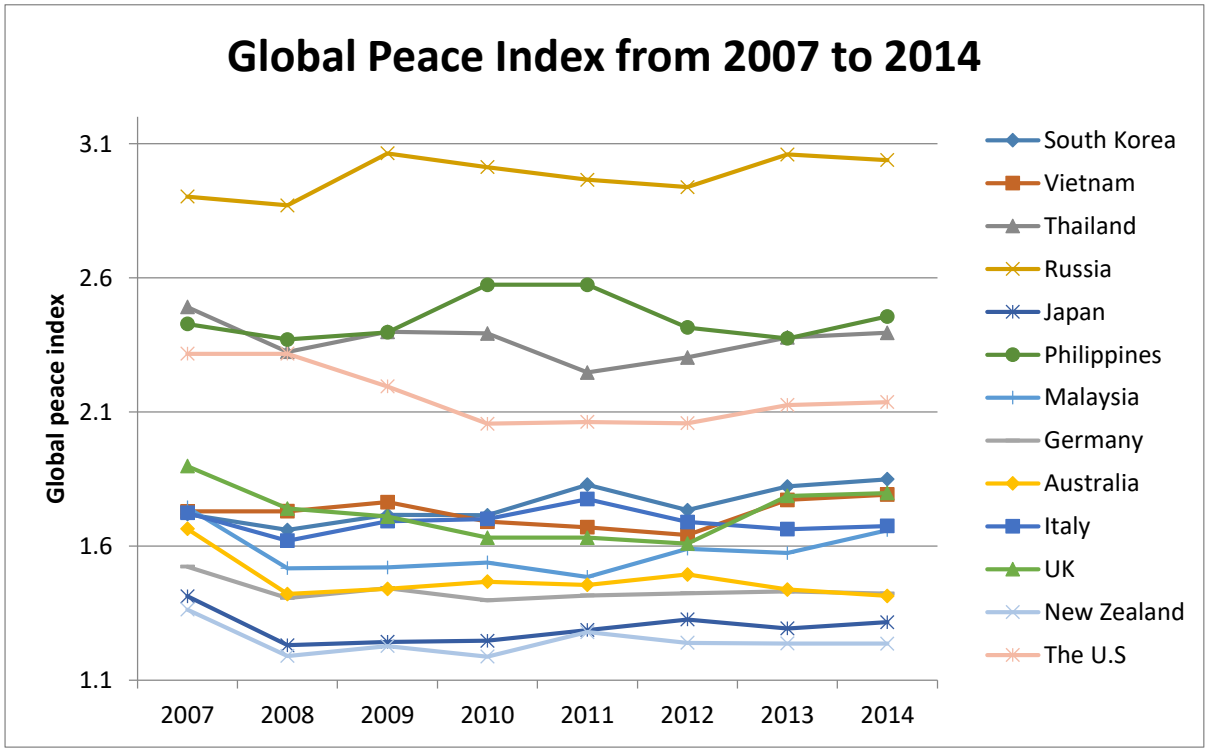
Distance can also have a significant influence on Chinese tourists' decisions when they choose their travel destinations. Distance is used to capture the transport cost and denoted as DIST. A preliminary test conducted by Keum (2010) indicates that distance is negatively related to tourism demand. Thus, a negative relationship is expected between distance to destination country and the number of Chinese tourists. CEPII gravity database (2016) provides distance information worldwide.

Exchange rate is another important factor that may affect tourists' decision making process. The adjusted exchange rate represents the adjusted exchange rate between Chinese Yuan (CNY) and local currency units (LCU). This variable reflects the Chinese currency's purchasing power in terms of destination countries' currency. EXAD is used to represent this variable. To remove the influence of inflation and deflation, the exchange rate is adjusted by both origin and destination country's consumer price index with base year 2010 (Chin 2009). If one unit of Chinese Yuan (CNY) is now worth more destination currency units than before, then the travelling cost decreases accordingly, in which case the number of tourists may increase due to the law of demand (Yang, Lin & Han 2010; Huang, Tsaur & Yang 2012; Su & Lin 2014). This variable is calculated by $EXAD = \frac{CPI_{Origin}}{CPI_{Destination}} \times ExRate$ and the annual exchange rate is adopted from the International Monetary Fund (2016). Consumer price index can be found in the World Bank and China Statistic Year Book (2007-2014).

The Global Peace Index, an index that represents a country's *safety level*, is used in this regression model, available from the Institute of Economics and Peace. The Global Peace Index considers 22 indicators, such as the frequency of internal and external conflicts, political instability, number of homicides per 100,000 people and ease of access to small arms and light weapons. Huang, Tsaur & Yang (2012) tested the impact of public order on international tourist

arrivals in Macau. The crime variable which is represented by public order has a negative impact on tourist arrivals. Other literature also indicates that social security and political instability may influence tourists' decision making when they are selecting a travel destination (Dhariwala 2005; Dougan 2007; Yang, Lin & Han 2010; Su & Lin 2014). Figure 3.2 indicates that the peace index for the popular destination countries has some variation, but most of them have a low (safe) level. Except for the United States, Thailand, Russia and Philippines, all other countries' global peace indexes are below 2.0. The Philippines' global peace index was above 2.5 from late 2010 to late 2011 and at the same period of time, the trend line for tourists from China became flatter than before. Nonetheless, most of these popular destinations for Chinese tourists have a low and stable global peace index.

Figure 3.2: Global Peace Index for 13 destination countries, 2007 to 2014

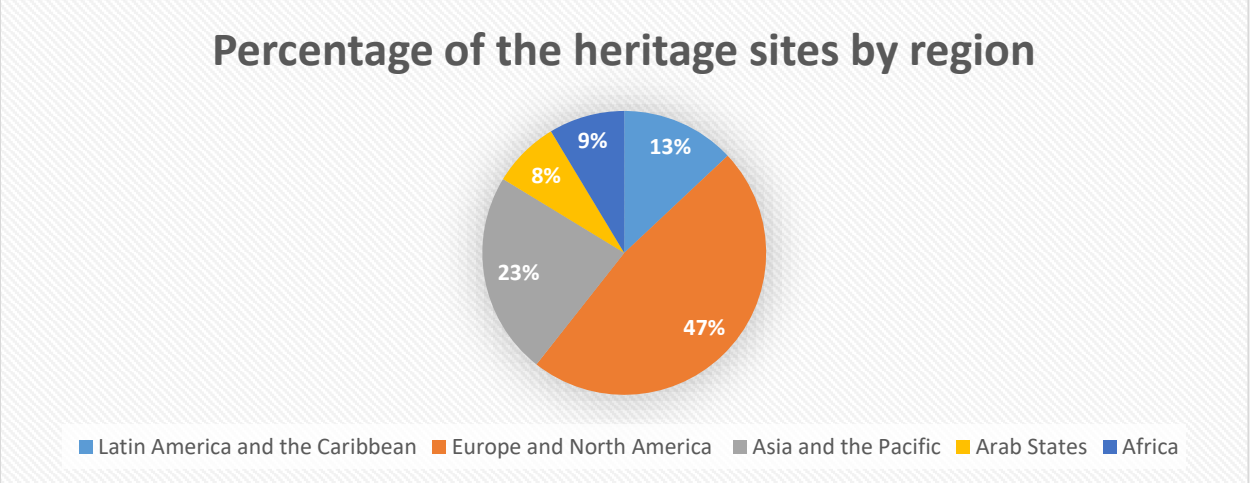


Source: Institute for Economics and Peace (2016).

Cultural and natural capital is measured by the number of cultural and natural heritage sites listed on the UNESCO World Heritage List, as those cultural and natural sites have strong reputations and outstanding international images. Cultural capital and natural capital are denoted as CUL and NAT in this study. While a nation's cultural and natural capital are far

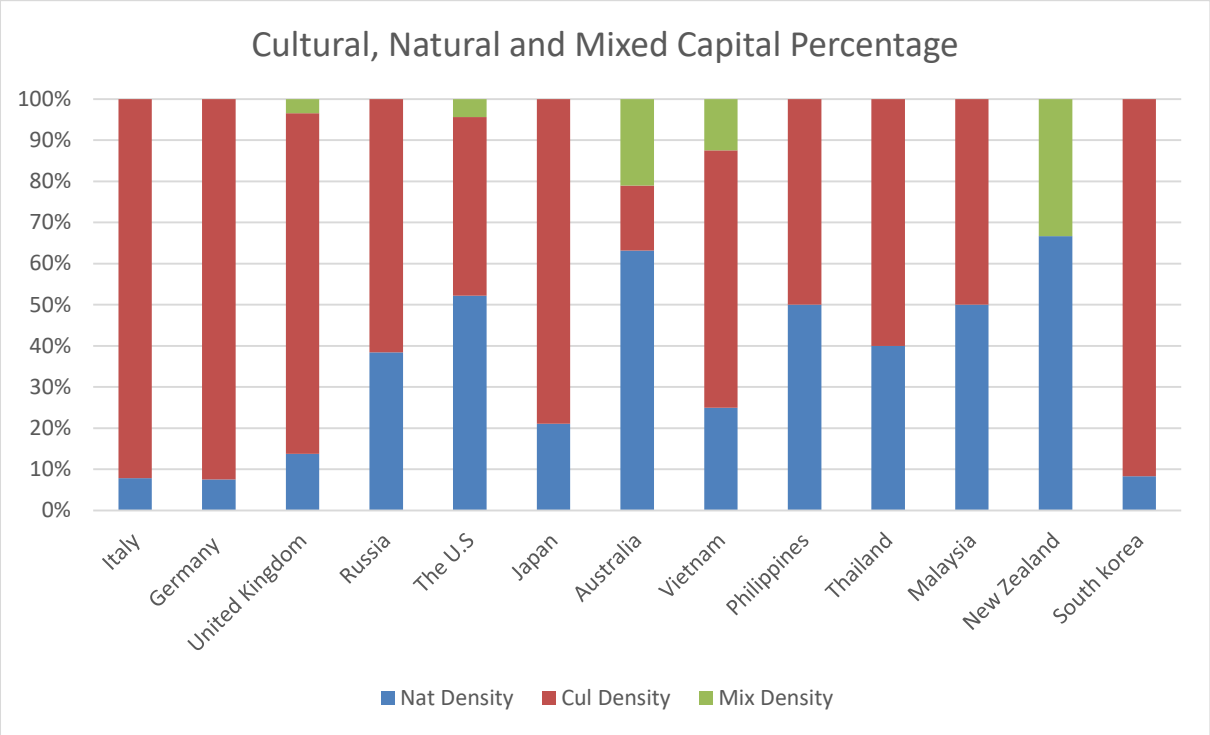
more than just those listed on the World Heritage List, those cultural and natural heritage sites that have been successfully listed represent a country's highest level of those assets. Figure 3.3 shows that European and North American countries have 47% of the total World Heritage assets in the world. Asia and the Pacific region is the second largest area, with 23% of the total heritage capital. The rest of the world shares the remaining 30% of heritage sites. Figure 3.4 shows the percentage of cultural, natural and mixed capital in these 13 countries. Japan has the same number of World Heritage sites as Australia, but Japan has more cultural resources than natural capital. Italy, Germany and United Kingdom have 120 heritage sites in total which account for half (51%) of total heritage sites in these 13 countries. Thus the data shows that the distribution of heritage sites is uneven, and it may have some impact on the analysis results. In addition, Massidda and Etzo (2012) found that culture has a positive relationship with domestic travel in Italy. Yang, Lin and Han (2010) also argued that the number of World Heritage sites is one of the major contributors for international tourists' travel to China. Similarly, as Su and Lin (2014) investigated, both cultural and natural heritage capital could have a tourism-enhancing effect. The number of cultural and natural heritage sites in each country is collected from UNESCO World Heritage List in year 2016.

Figure 3.3: Percentage of World Heritage sites by global region, 2016



Source: UNESCO (2016).

Figure 3.4: Percentage of cultural, natural and mixed capital sites in 13 countries, 2016



Source: UNESCO World Heritage Centre (2016).

3.3 Estimation method

The general form of the panel data regression model can be specified as follows:

$$Y_{j,t} = \alpha_i + \beta X_{j,t} + \varepsilon_{jt}, \text{ where } \alpha_j \ (j = 1,2 \dots \dots n;\ t = 1,2 \dots \dots T) \tag{3.2}$$

with i denoting counties and t denoting time. Notably,

$$\varepsilon_{jt} = \varepsilon_j + v_{jt} \tag{3.3}$$

denotes the unobservable individual specific effect and the remainder disturbance (Baltagi 2008). The pooled ordinary least squares regression treats the country-specific unobserved variable and the normal distributed error term as a whole. Hence, because the pooled ordinary least squares estimation will omit the unobserved variables, the results could be biased and inconsistent. Naude and Saayman (2005) noted that the pooling estimation can be an appropriate method when using the panel data to estimate the determinants of tourist arrivals with a short time period. In order to test whether the pooling estimation can fit in this study, the Breusch-Pagan Lagrange Multiplier test is used. The Breusch-Pagan Lagrange Multiplier

test can detect heteroscedasticity in the pooled ordinary least squares test (Breusch & Pagan 1979). The null hypothesis is that variances across countries are zero which means there is no difference between countries. In this study, there are existing country-specific unobserved factors that are likely to have an influence on the number of Chinese outbound tourists. Based on Table 3.2 shows the results of applying the Breusch-Pagan test. It is apparent that the null hypothesis should be rejected because the Chi-square (162.84) is too significant and the p-value is small. We conclude that the pooling estimation is biased and inconsistent in this study; hence the results from pooling estimation will only be used as a reference in the presentation of the estimation results in the next section.

In light of the above discussion, we turn to the fixed effects model and random effects model as better alternatives (Naude & Saayman 2005; Seetaram 2010; Yang & Lin 2010; Su & Lin 2014). The fixed effects model assumes that each country has its own country-specific unobserved variable and estimates the constant term for each country individually (Baltagi 2008). Nonetheless, the fixed effects cannot capture the distance since the distance variable in this study does not vary with time. On the other hand, the random effects model can estimate the distance and this model assumes the ε_{jt} fall into a normal distribution. The random effects model could be a better method for panel data analysis which takes both time-invariant and individual-invariant variables into account (Keum 2010). The Hausman test are used to examine which model is a better fit for this scenario (Hausman 1978). If the Chi-square is significant with a small p-value, then the null hypothesis should be rejected and the fixed effect model is a better fit. According to the result shown in Table 3.2, the Chi-square is significant at 20.793 and p-value (0.002) is far smaller than the 5% significance level, thus the null hypothesis is rejected. We therefore conclude that the fixed effects model is an appropriate estimate for this study.

Table 3.2: Breusch-Pagan Lagrange Multiplier test and Hausman test

Test name	Chi-Square	p-value
Breusch-Pagan Lagrange Multiplier test	162.84	2.20E-16
Hausman test	20.793	0.0020

3.4 Results and discussion

The results from estimating the above model are shown in Table 3.3. As noted, our primary concerns is with the fixed effects model; results for the other two estimations are shown mainly for comparison purposes. In the following paragraphs we discuss the interpretation of results for each explanatory variable in turn.

Firstly, the results show the adjusted exchange rate has a positive impact on the number of tourists leaving China, confirming that a higher purchasing power in Chinese Yuan encourages more Chinese tourists to choose to travel overseas. Increased Chinese currency value against local currency means that Chinese tourists can enjoy the local food, services and commodities at a lower price. However, in reality, the exchange rate may have an ambiguous effect on tourism activities and it needs to be considered with other factors. For instance, in 2007, 1 Chinese Yuan was equivalent to 0.45 Malaysian Ringgit, 122.00 Korean Won, 6.06 Philippines Peso and 4.53 Thai Baht. But in 2009, two years later, the exchange rate between China and these four countries improved significantly. In 2009, 1 Chinese Yuan was equivalent to 0.51 Malaysian Ringgit, 186.92 Korean Won, 6.90 Philippines Peso and 5.10 Thai Baht. Tourist arrivals from China to Thailand, Philippines and Singapore decreased while Malaysia and South Korea received more tourists from China than before. Notably, the global financial crisis around 2008 may have had some impact on tourism activities, especially for those countries that have a strong economic relationship with the centre of the crisis. Therefore, a very significant increase in the value of Chinese currency may be needed to have any impact on the number of outbound tourists.

Table 3.3: Determinants of Chinese outbound tourists to 13 countries

Variable	Pooling	Fixed effect	Random effect
EXAD	-0.00002 (0.0001)	0.0004* (0.0002)	0.0004* (0.0001)
Log(POP)	2.7996 (2.9974)	3.4768* (1.5264)	3.0324* (1.5766)
Log(PCGDP)	0.4220 (0.2667)	0.2948* (0.1320)	0.3662** (0.1385)
GPI	0.0645 (0.1536)	-0.8145 (0.5367)	-0.3300 (0.3753)
NAT	0.1395*** (0.02943)	0.1575 (0.0965)	0.2439*** (0.0646)
CUL	0.0162* (0.0071)	0.1878*** (0.0468)	0.0527*** (0.0197)
Log(DIST)	-1.1974*** (0.1453)		-1.5846*** (0.3934)
R-square	0.50	0.41	0.32
No. of observations	104	104	104

Notes: Figures in parentheses are standard deviations. *, **, *** represent significance at the 10%, 5% and 1% statistical levels, respectively.

Population change captures the potential market size in China. The relationship between population change and the number of tourists is positive, indicating that faster growth in the Chinese population will lead to a faster increase in the number of outbound tourists. While China has a large population, the "One Child Policy" between 1978 and 1980 to control population growth (Bongaarts & Greenhalgh 1985) has translated into a relatively stable population growth during the period 2007 to 2014. According to the results, a 1% increase in the Chinese population growth rate leads to a 3.5% increase in the number of outbound tourists, on average, *ceteris paribus*.

Distance represents the transport cost in tourism activity. It is reasonable to assume that the further the distance from China to a destination country, the higher the transport cost. It can be seen that, distance has a negative effect on Chinese tourist arrivals in a destination country in both the pooled effect model and random effects model. In Eilat and Einav (2006), distance plays a negative role in both high GNP and low GNP countries' tourist flows. The distance factor is time-invariant, so it is dropped automatically in the fixed effects model (Huang, Tsaur & Yang 2012).

A stabilised population rate and high GDP results in a higher GDP per capita in China. As the results show, a percentage increase in GDP per capita causes a positive percentage change in tourists. However, even though there is still a gap between rich and poor in China, more and more Chinese citizens are becoming wealthier than in the past. The results in table 3.3 show that if the GDP per capita growth in China increases by 1%, the number of tourist arrivals in each country is expected to increase by 0.29%, on average, *ceteris paribus*. This result simply implies that the wealthier the Chinese consumers are, the more likely they will demand outbound tourism.

Chinese tourists may also be concerned about safety conditions in destination countries. Destination countries with unstable government and public security issues may attract fewer tourists than those countries with good public order (Dhariwala 2005; Dougan 2007; Su & Lin 2014). The lower the Global Peace Index, the safer the country. In the fixed effects model, the coefficient for the Global Peace Index is negative. If the peace index increases by 1 unit, then

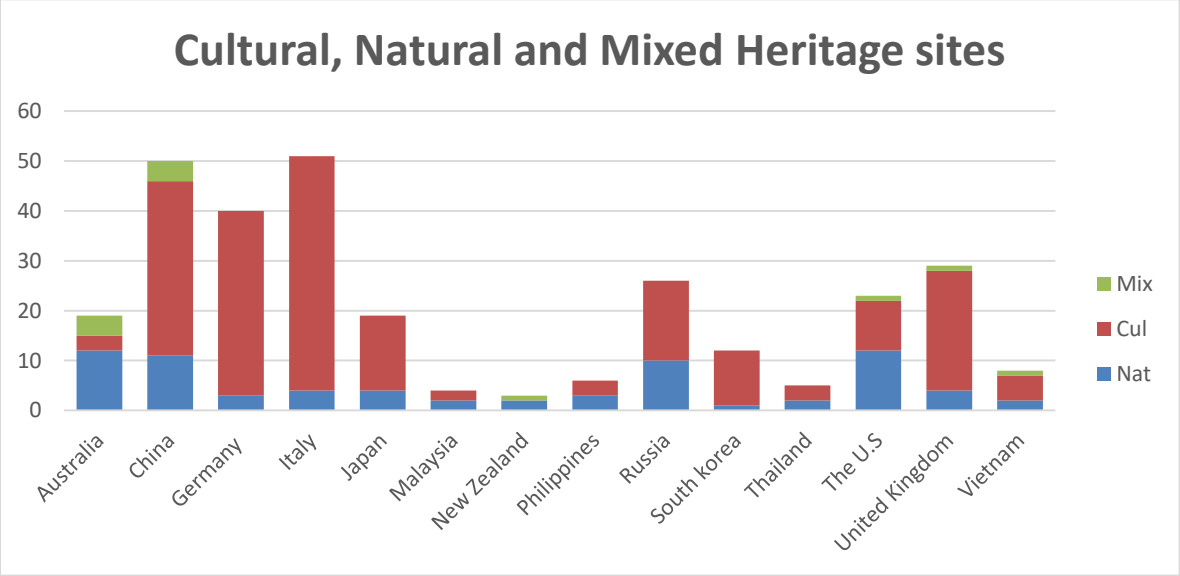
the number of visitors in a country is expected to decrease by 81.2%, on average, *ceteris paribus*. As we shown earlier (Figure 3.2), the Global Peace Index is relatively stable; a one unit change in the Global Peace Index in a country can be seen as an indication this country is suffering from negative shocks. The 13 countries in the model are all popular travel destinations for Chinese tourists. Compared to many other destination countries, these countries already have an advantage of relative peacefulness. Hence, if there are no major issues in these countries, the Global Peace Index may not be a significant factor that will have an impact on tourist numbers; this is the most likely reason why the Global Peace Index is not a significant factor in this model.

We turn now to the most important factors in this model for the present study, i.e. the cultural and natural components. Based on the fixed effects model result, the numbers of cultural and natural heritage sites both have a positive impact on Chinese tourists' outflows. The regression result suggests that cultural capital is a significant factor that could have an impact on Chinese tourists' decision making. Based on this estimate, if the number of cultural sites increases by one unit in a country, the number of Chinese tourists is expected to rise by 18.169%, on average, *ceteris paribus*. However, this result may be constrained by several factors which will be further discussed in the next section. The p-value indicates natural capital is not as significant as cultural capital, even though both coefficients are positive. Thus, this result could imply that Chinese tourists may show more interest in cultural capital than natural capital.

The distribution of cultural and natural heritage sites in the 13 countries may explain differences between the significance of natural and cultural capital. As discussed before in Section 3.2, European countries have the greatest number of World Heritage sites compared with other areas. Figure 3.5 indicates that Italy has the greatest number of heritage sites (51 sites), while Germany has the second highest number of heritage sites (40 sites). The United Kingdom also has a significant number of heritage sites (29 sites). Except Japan, other Asian countries among these countries, such as South Korea, have very few heritage sites. The United States, Russia, Japan and Australia have a similar number of heritage sites. Taken as a whole, Europe has the most cultural sites - Italy, Germany and the United Kingdom have 108 cultural sites and account for almost two-thirds (64.7%) of the total cultural heritage sites among the

13 countries. Most of the countries are dominated by cultural sites except Australia, which is the only country of the 13 countries with an obvious advantage in natural sites. Australia, Russia and America are the three countries with the greatest number of natural capital sites. European countries such as Italy, Germany and the United Kingdom account for less than 20% (18.3%) of the total natural capital. There is the potential trade-off between transport cost (captured by the distance) and the quantity of the cultural and natural attractions. As Germany and the United Kingdom are long distance travel destinations for Chinese tourists, only 8% of total Chinese outbound tourists choose these countries as travel destinations while more than 70% of Chinese outbound tourists prefer short distance countries.

Figure 3.5: Cultural, natural and mixed heritage sites in 14 countries including China, 2016

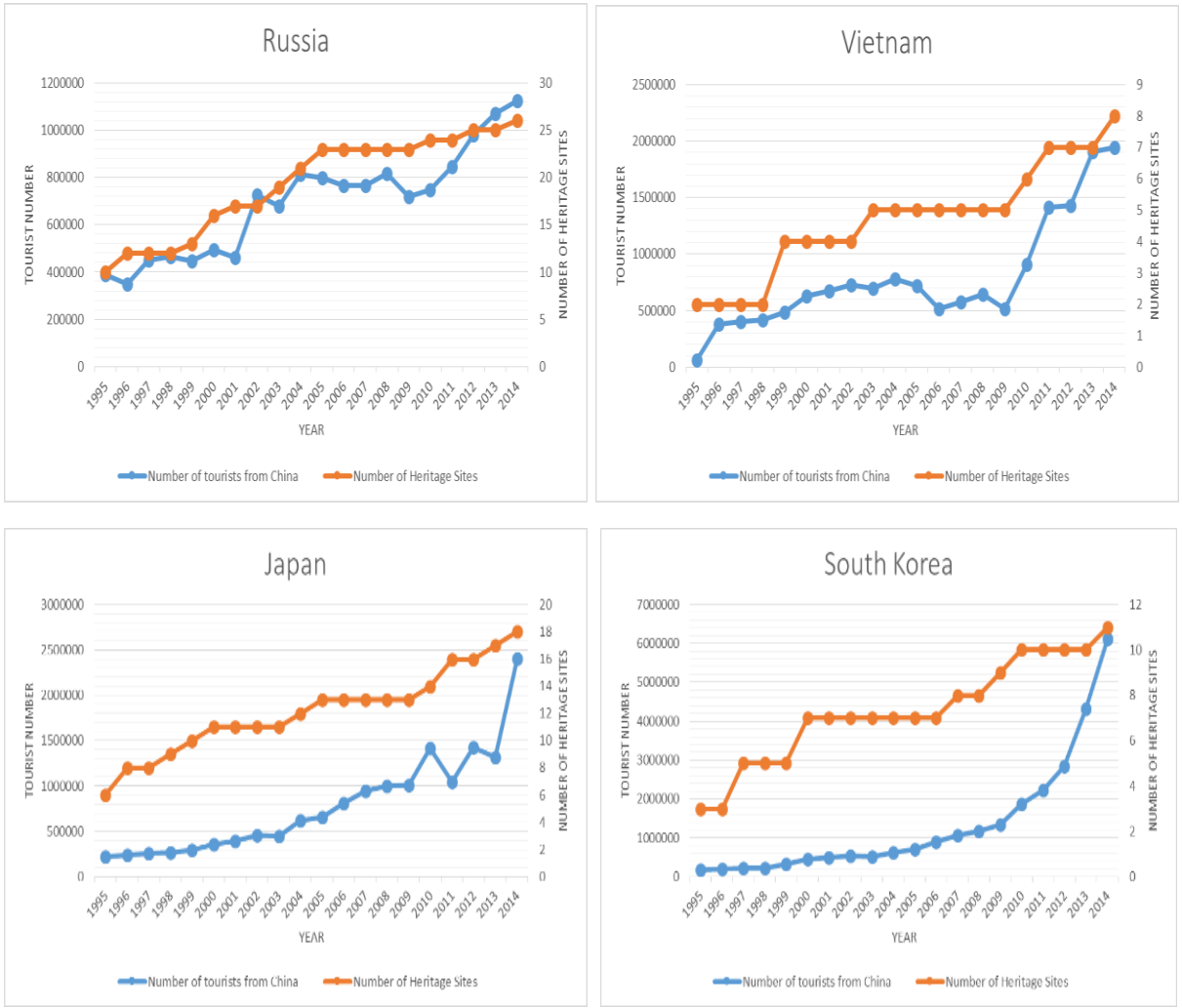


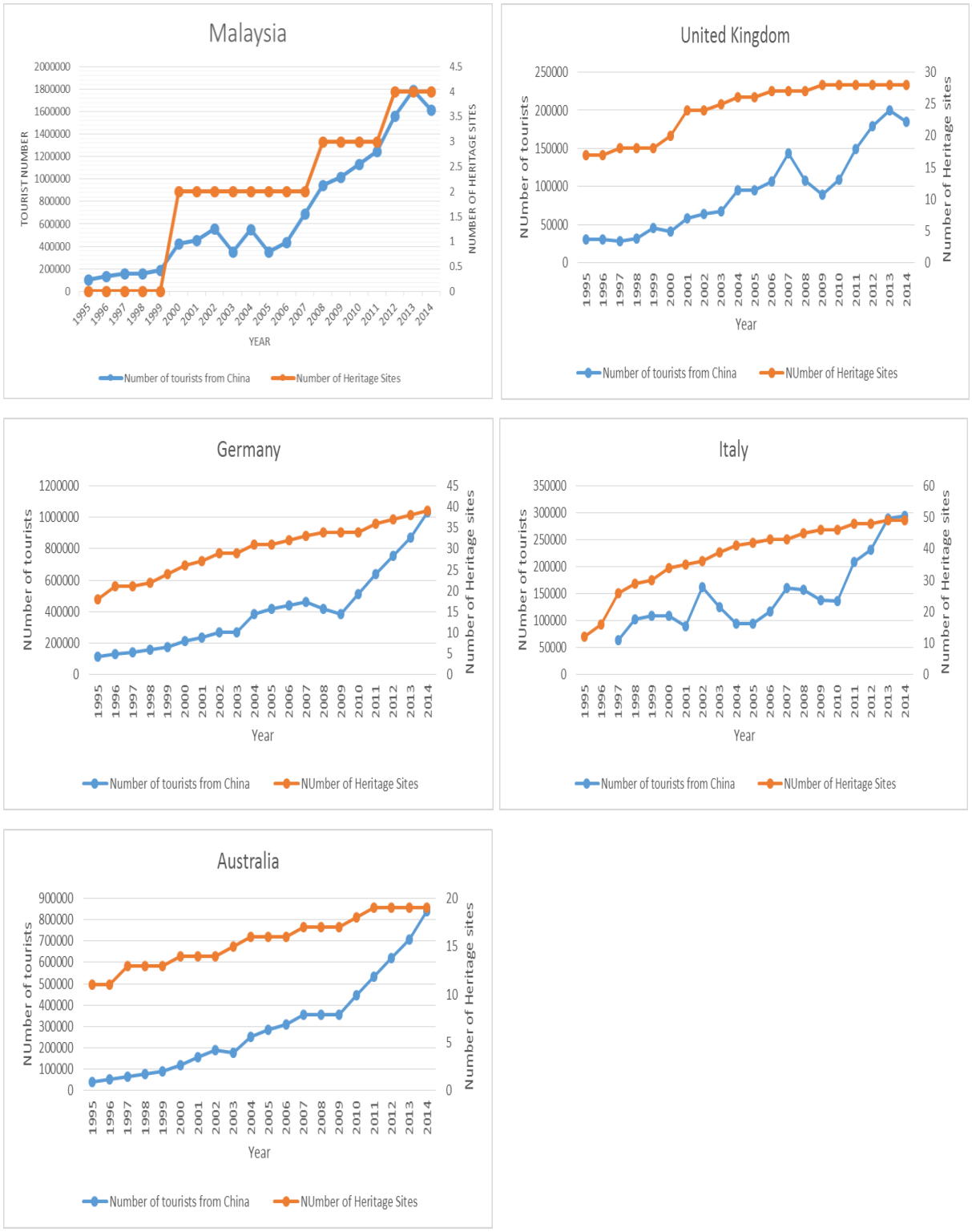
Source: UNESCO World Heritage Centre (2016).

The distance and price factor may have an influence on tourists' decision making process. When examining Chinese tourists' travelling patterns, more and more tourists choose those countries with higher prices and longer distance. There is no doubt that most of the outbound tourists are still choosing short distance countries as travel destination, but the trend line in Figure 3.6 indicates that the slope of the number of Chinese tourist arrivals in those countries with limited natural and cultural capital resources tends to be flatter or starts to drop at some point. In the meantime, more and more Chinese tourists are selecting countries with abundant natural and cultural capital as travel destinations. It is reasonable to assume that as people's income increases gradually, the focus of tourists starts to shift from cheap and short

distance travel to higher end travel, where quality and quantity of the natural and cultural capital are considered.

Figure 3.6: Comparison between the number of Chinese tourists and the number of sites on the World Heritage List for selected countries, 1995 to 2014





Source: UNWTO (2016); UNESCO World Heritage Centre (2016).

China itself has 35 cultural heritage sites, 4 mixed heritage sites and 11 natural heritage sites on the UNESCO World Heritage List (UNESCO 2016). As tourism can be seen as a "complex trade" to some extent (Lickorish et al. 1991; Teo & Huang 1995), it is possible that

domestic tourism consumption habits could affect Chinese consumers' decisions in international travel. Gray (1970) also noted that there are two central motivations for tourism activities: the first one is a desire to exchange the known for the unknown, to leave things familiar and to go and see different places, people and cultures. China itself is a country with a long history and diverse cultures. Chinese tourists may select a destination country with distinct features from their hometown and workplace. Hence, one important motivation in tourism activities is to do something different (Burkart & Medlik 1981). In China, culture in different regions is unique. For this reason, it is very likely that when Chinese tourists have many different travel destinations to choose from, they might follow domestic tourism consumption habits. Yang, Lin and Han (2010) found that cultural heritage sites in China express a stronger influence on the choices of international tourists to China than natural heritage sites.

However, taking Australia as a single case, the result might be different. Tourism Australia (2014) conducted a survey among 939 Chinese tourists who travelled to Australia to understand what really matters for Chinese consumers. The survey asked respondents to rate the top five most important factors among 22 factors when choosing a travel destination. This survey found world class natural environments received 57% of votes for the top five "Most Important Factor When Selecting a Holiday Destination". In addition, good food, wine and local cuisine and product received 46%, rich history and heritage received 34% and spectacular coastal scenery received 27% of votes. Good food, wine and the coastal scenery are all related to the high quality of natural capital. One possible way to interpret the survey result is that when natural capital is not a standout, Chinese tourists may be more likely to be attracted by diverse cultures. But if a country has an outstanding quantity of quality natural capital such as Australia, Chinese consumers may also be happy to choose this country as a travel destination. On the other hand, natural capital within China is already diversified to some extent. China is a spatially large nation with complex geography. Furthermore, natural capital is constrained by the natural environment, it is not like culture which is a product of human creativity. Hence, while natural heritage appears less attractive to Chinese tourists at an aggregate level, it may have a different effect on tourism to a specific country such as Australia. Some natural sites with unique features can represent a country's identity, such as the Great Barrier Reef or Uluru (Ayers Rock) in Australia.

3.5 Limitations

The data and analysis have limitations which affect interpretation of the results. Firstly, the data collected is based on availability and reliability, which unfortunately, is only from 2007 to 2014. The time period in this study is not long enough to do a sufficient analysis on time variation. For this reason, micro panel data is used rather than a macro panel dataset. Nonetheless, a short time period is less likely to exhibit a serial correlation problem than macro panel data that is usually over 20 to 30 years. To test time variation more robustly, a longer time period should be used.

Secondly, the process of selecting independent variables is constrained by the availability and reliability of the data. Other possible factors that influence tourists' decision-making process deserve further investigation. For instance, visa and passport controls are likely to influence travellers (Neumayer 2010). As noted earlier, Australia is the first country to be granted Approved Destination Status scheme by the Chinese Government in 1999 (Austrade 2016). Table 3.4 summarises the visa application fees for Chinese tourists to the 13 countries. The visa application fees are higher in the US, European countries, Australia and New Zealand than in short distance countries in Asia. Also, the medium and long-distance countries may have more restricted visa application processes than short-distance countries. However, with increasing international trade, countries have become more open and this difference is narrowing over time. Chinese tourists have greater freedom to travel outside China, allowing them to visit more countries worldwide. To some extent, visa fee is correlated with travel distance. However, due to difficulties in obtaining reliable consistent data, this visa component is not examined in this study. Moreover, other local characteristics such as accommodation and transport infrastructure might also have an impact on tourism demand (Khadaroo & Seetaah 2008). Special events and festivals may have some influence on tourists' decision-making process (Getz 1991). The Olympic Games can be a positive example. In tourism modelling, these possible factors may all need some attention to see whether they have any effect on tourism demand.

Table 3.4: Visa application fee for Chinese tourists in 13 countries, 2014

Country	Visa application Fee (2014)
Australia	RMB1020
Germany	60 Euro + service fee (RMB210)
Italy	60 Euro + Service fee (RMB180)
Japan	RMB200
New Zealand	RMB1080
Philippines	RMB170-350
Russia	RMB900 (Group Traveling Visa-free)
Singapore	RMB153
South Korea	RMB260-585
Thailand	Visa-free
United Kingdom	RMB900-2000
United States	RMB1008
Vietnam	RMB360-660

Sourced from: China Consular Affairs (2014).

Technically, a fixed effects model examines the causes of changes within a certain object, and this object can be a person or other entities. If a variable is time-invariant, it will not cause any change as it is constant for each object (Torres-Reyna 2010). For this reason, distance is automatically dropped from the model in this study. In addition, the number of cultural and natural sites in the World Heritage List may not vary significantly over time. Based on Arezki, Cherif & Piotrowski (2009), 65% of sites were built more than five centuries ago and only about 3% of the total heritages sites were built in the twentieth century. Therefore, most of the heritage sites have been on the list for long time. The growth rate of these heritage sites appearing on the World Heritage List was more significant in the past than in recent decades. In another words, the number of World Heritage sites added each year is steady in the twentieth century. Consequently, 2007 may not be the ideal starting point for analysis as the

marginal influence of cultural and natural capital diminished after 2007. Tisdell and Wilson (2002) argued that there may be a time lag in the tourism-enhancing effect of the World Heritage List as it takes time for tourists to receive information on changes to this list.

In addition, as the result indicates that an increase in one unit of cultural heritage possessed by a country may increase the Chinese outbound tourism demand by approximately 18%. However, this result may be constricted by many factors, such as where the newly added sites are located. For this reason, further research needs to be conducted. Lastly, the statistical model can only explain a small portion of tourists' choice when selecting a travel destination as the within R-square is 41% under the fixed effects model (Table 3.3). However, the intention for this model is to examine preliminary signs of each determinant and its corresponding significance level. Thus, for the modelling itself, further investigation is needed to eliminate these drawbacks.

Chapter 4
Major issues and policy implications

4.1 Introduction

Based on the empirical results from the last chapter, we conclude that natural and cultural capital do have some positive influence on Chinese tourists' decision making process when choosing a destination country. In the first part of this chapter, we draw attention to three major issues that affect the development of tourism policy in a country such as Australia. After identifying these major issues, recommendations are given in the later part of this chapter.

4.2 Major issues

There are some issues which could impact the development of tourism policy in a country that deserve some attention. Firstly, we need to clarify the scope of government involvement in the tourism industry from an economic point of view. Second, there is the possible adverse effect of too-rapid tourism development. The third issue is the need for sustainable development as a paradigm for policy towards the tourist industry.

Turning first to the question of the scope and limitations of government policy towards the tourist industry, it can be noted that relying solely on market instruments in the tourism industry may cause some spillover effects. The positive effect is the potential benefit that could be brought to a country by the tourism industry. At a broader level, the negative effect is that if the tourism industry is left to manage and market itself without any government interventions, it could be problematic for environmental and cultural heritage conservation. In addition, the problem could also appear in the tourism supply chain which is likely to have negative influence on both Australia tourism industry and Chinese outbound tourists' travel experiences. In the current Australian tourism market, there are existing unethical practices in regard to Chinese inbound tourism (King, Dwyer & Prideaux 2006; Keating 2009). For this reason, governments may need to guide the tourism market with coordinated strategic plans (Collins

1999) or enhance management policy to help reduce these negative effects, at both a national and local government level.

As noted earlier, in order to maintain sustainable tourism development, a country should ensure a high quality tourism experience for consumers while minimising the negative impact on local communities. In the increasingly competitive environment for all industries, efficient development plans for tourism should take the wider economy into account. Tourists exchange their income and time for tourism experiences. The destination country trades products and services that are derived from its natural or cultural capital for direct and indirect economic benefits. Thus, at a broader level, it is reasonable for government policy to focus on both the demand and supply side to achieve stronger sustainability goals.

Fast development in tourism may cause a variety of issues in cultural and natural heritage sites. Arezki, Cherif and Piotrowski (2009) noted that the tourism industry depends on a limited set of services and goods that are derived from resources with little capacity for expansion and labour reallocation. Natural or cultural capital have their own capacity, usually with very little flexibility. At a broader level, natural capital such as mountains, beaches and rivers have little room for expansion since they are normally constrained by their physical or spatial capacity.

The Australia Government Department of the Environment and Energy (2016) released a report noting that national parks, such as Kakadu and Uluru-Kata Tjuta, are important for tourism activities. However, their continuing contribution to tourism depends on their capacity and it is important to find a balance between park visitations and culture preservation, lifestyle and privacy. Furthermore, an excessive visitation or usage of cultural and natural capital is one of the most common problems. For example, beach-dependent tourism activities are suspected to interrupt the natural beach feeding cycle due to the artificiality of the area, based on research conducted in Eastern Costa Spain (Jurado et al. 2012). Other than coastal areas, tourism and recreation may have a negative influence on plant biodiversity and the local flora. With the increasing number of both domestic and international visitor flows in and out of some natural heritage areas in Australia, a range of direct and indirect impacts have been identified by many

researchers (Worboys, DeLacy & Lockwood 2002; Pickering & Hill 2007). Construction of tracks, roads, lookouts, campsites and accommodation impacts the natural vegetation in one way or another (Pickering & Hill 2007). Pickering and Hill's study on the impact of tourism on plant biodiversity in Australia pointed out that these facilities changed local soil conditions, spread weeds and caused direct damage to some native flora. The impact may be long term and the polluted areas may not recover for many years, if ever. Moreover, damage not only affects the natural biodiversity, but also reduces the quality of the tourism experience. Interestingly, there is growing recognition and research of these areas, encouraged by increasing visitations. Thus, tourism actually results in spillover effects on natural capital to some extent, requiring a solid policy as a guideline to achieve sustainable development.

Cultural capital is different from natural capital, as it contains both tangible and intangible features. For tangible features, cultural heritage sites such as the Opera House in Sydney, Australia and the Great Wall in China have a maximum daily, monthly or annual capacity. It is difficult to expand the capacity of cultural heritage sites and maintain a quality visiting experience. Visitors exceeding capacity will burden these cultural sites. On the other hand, intangible cultural capital also has some restrictions. One of the main motivations for tourism activities is to exchange the known for the unknown (Gray 1970). As international trade becomes more open, tourists with different cultural backgrounds are more common in the international tourism industry (Reisinger & Turner 1998a). Experiencing local culture, such as history, custom, arts and even lifestyles, is an important aspect of tourism activities. While the difference can be an attractive point, it can also obstruct the development of tourism. For instance, language differences could lead to misleading issues in cultural exchange between tourists and the destination country. Further, people with different cultural backgrounds may have a different appreciation of arts and culture (Reisinger & Turner 1998a). For example, in Australia, it may be difficult for international tourists to understand the special significance of Aboriginal indigenous art and culture if they have not been exposed to Aboriginal culture before.

The third major issue to be discussed is sustainability. Since 1980s, sustainable tourism development has drawn substantial attention from many scholars which is a fast growing area in tourism research (Hashemkhani Zolfani et al. 2015). An aggressive tourism-based strategy

may not be enough to create strong economic development. Sustainable development is not a new topic in the tourism industry, and it has always been linked with complex political concepts. The concept of sustainable development arose in tourism in the 1990s (Hardy, Beeton & Pearson 2002) and is closely related to carrying capacity and limits, even though this idea is often neglected (Saarinen 2006; Jurado et al. 2012). Trade liberalisation requires comprehensive policy to guide and maintain a positive relationship with sustainable development. Efficient governance will help guide the tourism industry to manage the natural environment, cultural development and economic benefits in a more sustainable way. Australia is a country with abundant natural resources and some cultural capital. An intensive tourism growth plan may only push Australia to reach its limit of sustainable tourism sooner. The limits to growth do not necessarily mean reducing or slowing down the tourism development process. But the tourism industry may have distinct features from other industries due to its limited room for expansion. On the concept of sustainable development, scholars originally focused on ecology and the damage caused by mass tourism activities on natural and physical environments (Farrell & Runyan 1991).

As Australia's tourism industry is capable of providing Australia with solid economic benefit and employment opportunities, it draws attention from both the private sector and government authorities. The Ecologically Sustainable Development Working Groups (1991) proposed a set of principles of ecologically sustainable tourism with reference to four goals. Firstly, tourism should improve current individual and community well-being without compromising the well-being of future generations. Secondly, ecologically sustainable development should obtain equity within or between generations. To some extent, the tourism industry in Australia is largely based on the natural environment; hence, the third goal is to protect biological diversity and preserve the ecosystem. The last goal is recognition of the global dimension. International trade, tourism and other international matters such as climate change are associated with Australia's tourism market. Therefore, ecologically sustainable development in Australia needs to consider global matters. In this government report, natural capital was the main focus point, and pointed out that Australia cultural capital may have little impact on international visitors. However, the report shows that Australia's unique cultural achievement aids Australia in the promotion of the country as a desirable travel destination globally, and in return, tourism helps Australia sustain its cultural heritage in many ways.

There is more recent research focusing on the concept of sustainable tourism development. Clarke (1997) developed a framework of approaches to sustainable tourism with four different positions. However, the framework did not provide a clear delineation of sustainable tourism development and Clarke argued that a correct direction is much more important than an explicit goal definition. In 2005, the United Nations World Tourism Organization stated a general goal of sustainable tourism development (UNWTO 2005). Clarke's (1997) and UNWTO's framework did not focus only on mass tourism and natural environments, but also on a balanced relationship between economic, environmental and social-cultural aspects to guarantee long term sustainable development (UNWTO 2005).

Four conditions need to be fulfilled to achieve sustainable tourism development, and these four conditions should be set as a benchmark in tourism under UNWTO. Firstly, the use of natural resources needs to be optimised in the tourism industry. Economic benefit should be based on the capacity of the natural capital. Ongoing conservation and maintenance processes are essential to achieve ecological equilibrium. Pickering and Hill (2007) suggested that building infrastructure should try to minimise the damage to vegetation and other natural capital and monitoring programs should be established to evaluate the impacts and benefits of different types of infrastructure if necessary. The government's environmental protection efforts could also have great impact on the existence of natural sites on the World Heritage List (Arezki, Cherif & Piotrowski 2009). Thus, governments, either national or local, may need to set up conservation programs to maintain essential ecological processes to help protect natural heritage and biodiversity.

The second condition is that tourism activities should be based on mutual respect and understanding. The impact on local communities caused by commercialisation should be minimised. Local cultures and traditions should be preserved and the socio-cultural authenticity of indigenous peoples respected. Robinson (1999) highlighted that collaboration and partnership between governments and local communities played a core role in achieving sustainable results. In earlier research, Getz and Jamal (1994) pointed out the importance of community-based collaboration to achieve sustainability in the Bow River Corridor, Canada. In Australia, Ecologically Sustainable Development Working Group (1991) recommended that environmental impact assessment (EIA) program in Australia should take social-cultural

impacts into account. It also mentioned that tourism industry development is encouraged to maintain a healthy collaborate relationship with local community, particularly, Indigenous people. Similar to natural capital conservation, government policy should be supportive of conservation of local communities' building and cultural heritage.

The third condition is that long term socio-economic benefits should be distributed fairly to all stakeholders. This condition follows the previous one. A clear collaboration with all stakeholders should be managed and directed by the government to ensure long term operations.

The fourth condition is to maintain a higher level of tourism quality and ensure that tourists are fully satisfied with their tourism experience. To ensure long term development in tourism, Australia can help tourists increase their awareness about the importance of sustainability. Tourism activity needs the participation of both tourists and the destination country, hence, it is necessary to promote the concept of sustainability widely.

4.3 Recommendations

There are several recommendations for the Australian tourism market to keep a sustainable and healthy relationship with Chinese tourists. We have shown that cultural capital appears to have a positive impact on the number of tourists from China, while natural capital currently has a less significant influence at the aggregate level. Australia's natural capital is more obvious than its cultural capital, but that does not imply cultural capital is not important in Australia tourism. Destination countries facing a competitive global environment for tourism need to explore how to maintain, develop and use their unique cultural and natural capital for the longer term. Under this situation, "creative tourism" has a number of potential advantages over traditional cultural tourism. This concept can be understood as tourists having opportunities to develop their creative potential by participating in a destination country's art and culture through courses, workshops or involvement in any learning experience (Richards & Wilson 2006). Firstly, creativity can potentially add value more easily because of its scarcity. Secondly, creativity allows destinations to innovate new products relatively rapidly, giving

them a competitive advantage over other locations. Thirdly, creative resources are generally more sustainable and flexible than cultural heritage sites. It may reduce the need for traditional cultural heritage, and reduce the need for expensive preservation and maintenance of ageing structures. Creativity based tourism is more suitable for sustainable tourism development than traditional cultural tourism (Richards & Wilson 2006).

In the Australia–China relationship, better management in travel agencies may be necessary. Keating (2009) and King, Dwyer and Prideaux (2006) identified there were some unethical problems in Australia's China inbound tourism market, especially for the packaged tour groups. One of the major problems is the collusion between travel agencies and "shops" which sell souvenirs and other products to tourists with higher price than other local supermarket or retails. These "shops" normally purchase tour groups from travel agencies and the tour guide provided by those "shops" will encourage tourists to shop in uncompetitive "shops". This unethical collusion has uneven impacts on tourist flows. Since the "shops" pay for tour groups, travel agencies construct itineraries that favour those "shops" rather than focus on other local attractions. The distribution of group tourism is concentrated in certain areas and is likely to increase the burden on local resources and local communities, while other locations that may not have any "shops" could be ignored. Moreover, the "shops" usually give commissions to those tour guides who encourage tourists to spend in their "shops". As a result, the main job of the tour guides is no longer to introduce the famous natural attractions, cultural heritage or explain Australia's unique multicultural history. As King, Dwyer and Prideaux. (2006) noted that the "unethical practice" will lower the tour quality and further affect Australia's reputation in the tourism market for repeat visitations.

Notably, the problem discussed above usually appears in packaged tour (group visiting under the ADS scheme). Pan and Law (2003) noted Chinese outbound tourists are easily oriented towards shopping. It may be difficult to change the tourism managerial structure in the origin country, but there are some changes that can be made to reduce its negative impact and improve both Australia and Chinese outbound tourists' benefits. For instance, the Australian government may enhance the management of tour operators and impose a tighter regulation on tour guides to maintain sustainable development. In addition, Chinese outbound

tourists may suffer from the lack of knowledge of the destination country. Increasing expenditure on promoting Australian tourism product can increase Australia's visibility to the Chinese tourism market. It seems that increasing effort to promote Australia tourism in the Asian region can be effective to some extent (Kulendran & Dwyer 2009). In particular, official websites could have an impact on a destination country's cultural capital and image (Zhang et al. 2015). Furthermore, there are many unofficial websites, and social media such as Facebook, Instagram and Weibo (a popular social media in mainland China) that are increasingly visible. These unofficial websites and social media provide people with a platform to share their tourism experience and communicate about the holiday destinations. Many countries are starting to set up accounts on these unofficial social network sites to advertise their tourism.

Chapter 5
Conclusion

In recent decades, the number of Chinese tourists arriving in Australia has experienced significant growth, making Australia a popular travel destination for the Chinese tourism market. Previous studies explaining tourism choices have mainly focused on the application of different modelling techniques and very few have investigated the role of cultural and natural capital in tourism. China is a country with abundant cultural and natural heritage sites. so it is interesting to consider whether Chinese tourists want to be exposed to a different cultural environment, or have more interest in natural sightseeing. Cultural and natural heritage sites are sometimes at the centre of debates on the conflict between promoting tourism and sustainable tourism strategies. This study shows how the conflict between tourism development and sustainable conservation may not be a major problem for the China and Australia tourism market. The results showed that Chinese tourists do consider cultural and natural capital when they are selecting an international travel destination. Preservation of a country's valuable cultural and natural environment will help maintain a country's attractiveness for foreign tourists.

The fixed effects model in panel data was adopted in this study as tourism involving human choices is hard to explain using an econometric model. However, investigating the determinants of Chinese tourists outflow to 13 popular destination countries from 2007 to 2014 and taking account of cultural and natural capital gave some insight into Chinese tourists' travel patterns. The empirical results showed that the domestic income level in China, relative exchange rate, geographical distance and cultural capital in the destination country are important factors in Chinese tourism. Natural capital is also positively related to tourism demand in China, but it is less significant than other key variables. Potential market size, measured by population change is positively correlated with the number of Chinese tourists. The Global Peace Index was less relevant to Chinese tourists when considering these 13 particular destination countries. The destination countries have different mixes of features, especially in the distribution of cultural and natural heritage sites. Although the aggregate results show that Chinese tourists are more likely to be attracted by the unique cultural

characteristics in destination countries, when a country has an outstanding number and quality of natural assets such as Australia, Chinese tourists may also show interest in the natural environment.

Based on the empirical results, to achieve a desirable sustainable goal for both Australia and China, an aggressive tourism-based strategy may not be appropriate as it may put these heritage sites in danger. Moreover, as culture does appear to have the ability to induce Chinese tourists, encouraging the development of creativity in tourism experiences derived from local culture may reduce the burden on natural capital in Australia. Meanwhile, from a long term perspective, management of unethical business behaviours in the Australia-China tourism market could aid sustainable tourism development in Australia. Overall, this study suggests that further investigation would be worthwhile to help develop a more comprehensive policy to ensure sustainable tourism development in Australia as well as to maintain a healthy demand–supply relationship with China.

References

Akın, M 2015, 'A novel approach to model selection in tourism demand modelling'. *Tourism Management*, Vol. 48, pp. 64-72.

Anderson, W 2015, 'Cultural tourism and poverty alleviation in rural Kilimanjaro, Tanzania', *Journal of Tourism and Cultural Change*, vol. 13, no. 3, pp. 208-24.

Arezki, R, Cherif, R & Piotrowski, J.M 2009, 'Tourism specialization and economic development: Evidence from the UNESCO World Heritage List,' *International Monetary Fund Working Papers,* (No.09/176*)*.

Austrade 2016, *Approved Destination Status (ADS) scheme*, Available at: https://www.austrade.gov.au/Australian/Tourism/Working-with-China/ADS, accessed on 1 April 2016.

Australia Government Department of the Environment and Energy 2016, *Australia's National Heritage List*, available at: https://www.environment.gov.au/heritage/places/national-heritage-list, accessed on 19 May 2016.

Baltagi, B 2008, *Econometric analysis of panel data*, Chichester: John Wiley & Sons.

Bennett, N., Lemelin, RH, Koster, R & Budke, I 2012, 'A capital assets framework for appraising and building capacity for tourism development in aboriginal protected area gateway communities', *Tourism Management*, vol. 33, no. 4, pp. 752-66.

Bongaarts, J & Greenhalgh, S 1985, 'An alternative to the one-child policy in China', *Population and Development Review*, vol. 11, no. 4, pp. 585-617.

Bourdieu, P 2011, 'The forms of capital (1986)', in Imre, S & Kaposy, T (ed), *Cultural theory: An anthology*, pp.81-93, Chichester: Wiley-Blackwell.

Brau, R., Lanza, A & Pigliaru, F 2003, 'How fast are the tourism countries growing? The cross-country evidence', *FEEM Working Paper* No. 85, sourced from: http://papers.ssrn.com/sol3/Papers.cfm?abstract_id=453340 accessed on 30 March 2016.

Breusch, T.S & Pagan, A.R 1979, 'A simple test for heteroscedasticity and random coefficient variation', *Econometrica: Journal of the Econometric Society*, vol. 47, no. 5, pp. 1287-1294.

Brida, J.G & Risso, W.A 2009, 'A dynamic panel data study of the German demand for tourism in South Tyrol', *Tourism and Hospitality Research*, vol. 9, no. 4, pp. 305-313.

Buckley, R 1994, 'A framework for ecotourism', *Annals of Tourism Research*, vol. 21, no. 3, pp. 661-665.

Buckley, R 2004, 'The effects of World Heritage listing on tourism to Australian national parks', *Journal of Sustainable Tourism*, vol. 12, no. 1, pp. 70-84.

Burger, C.J.S.C., Dohnal, M., Kathrada, M & Law, R 2001, 'A practitioners guide to time-series methods for tourism demand forecasting—a case study of Durban, South Africa', *Tourism management,* vol. 22, no. 4, pp. 403-409.

Burkart, A.F & Medlik, S 1981, *Tourism: past, present and future,* London: Heinemann.

Butler, R & Hinch, T 2007, *Tourism and indigenous peoples: Issues and implications*, London: Routledge.

Cellini, R 2011, 'Is UNESCO recognition effective in fostering tourism? A comment on Yang, Lin and Han', *Tourism Management*, vol. 32, no. 2, pp. 452-454.

CEPII database 2016, 'Geographic Distance', Available at: http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=6, accessed on 17 Aug 2016.

Chatfield, C 2016, *The analysis of time series: an introduction*, Boca Raton: CRC press.

Chin, L 2009, 'Dynamic model for international tourism demand for Malaysia: Panel data evidence', *International Research Journal of Finance and Economics*, Issue. 33, pp. 207-217.

China Consular Affairs 2014, 'Visa condition for Chinese' (in Chinese), Available at: http://cs.mfa.gov.cn/zggmcg/cgqz/sbcgqz/, accessed on 21 June 2016.

Choi, S., Lehto, X.Y & Morrison, A.M 2007, 'Destination image representation on the web: Content analysis of Macau travel related websites', *Tourism Management*, vol. 28, no. 1, pp. 118-129.

Clarke, J 1997, 'A framework of approaches to sustainable tourism', *Journal of Sustainable Tourism*, vol. 5, no. 3, pp. 224-233.

Cloke, P 1993, 'The countryside as commodity: new rural spaces for leisure', *Leisure and the Environment: Essays in Honour of Professor J A Patmore Ed. S Glyptis*, London: Belhaven Press, pp. 53-67.

Collins, A 1999, 'Tourism development and natural capital', *Annals of Tourism Research*, vol. 26, no. 1, pp. 98-109.

Costanza, R 1992, *Ecological economics: the science and management of sustainability*, New York: Columbia University Press.

Costanza, R & Daly, H.E 1992, 'Natural capital and sustainable development', *Conservation Biology*, vol. 6, no. 1, pp. 37-46.

Deaton, A & Muellbauer, J 1980, 'An almost ideal demand system', *American Economic Review*, vol. 70, no. 3, pp. 312-26.

Dhariwal, R 2005, 'Tourist arrivals in India: how important are domestic disorders?', *Tourism Economics*, vol. 11, no. 2, pp. 185-205.

Director of National Parks, Indigenous cultural tourism in Australia 2016, 'Sustainable tourism overview 2011-2016 Parks Australia', Available at: https://www.environment.gov.au/resource/sustainable-tourism-overview-2011-2016-parks-australia, accessed on 21 July 2016.

Divisekera, S 2003, 'A model of demand for international tourism', *Annals of Tourism Research*, vol.30, no. 1, pp. 31-49.

Dougan, J.W 2007, 'Analysis of Japanese tourist demand to Guam', *Asia Pacific Journal of Tourism Research*, vol. 12, no. 2, pp. 79-88.

Drost, A 1996, 'Developing sustainable tourism for world heritage sites', *Annals of Tourism Research*, vol. 23, no. 2, pp. 479-484.

Du Cros, H 2001, 'A new model to assist in planning for sustainable cultural heritage tourism', *International Journal of Tourism Research*, vol. 3, no. 2, pp. 165-170.

Dwyer, L., Forsyth, P., Spurr, R & VanHo, T 2006, 'Economic effects of the world tourism crisis on Australia', *Tourism Economics*, vol. 12, no. 2, pp. 171-186.

Dwyer, L., Edwards, D., Mistilis, N., Roman, C & Scott, N 2009, 'Destination and enterprise management for a tourism future', *Tourism Management*, vol. 30, no. 1, pp. 63-74.

Ecologically Sustainable Development Working Groups 1991, *Tourism Report,* Canberra: Australian Government Publishing Service.

Eilat, Y & Einav, L 2004, 'Determinants of international tourism: a three-dimensional panel data analysis', *Applied Economics*, vol. 36, no. 12, pp. 1315-27.

Farrell, B.H & Runyan, D 1991, 'Ecology and tourism', *Annals of Tourism Research*, vol. 18, no. 1, pp. 26-40.

Forsyth, P., Dwyer, L & Spurr, R 2014, 'Is Australian tourism suffering Dutch disease?', *Annals of Tourism Research*, vol. 46, pp. 1-15.

Garín-Muñoz, T & Amaral, T.P 2000, 'An econometric model for international tourism flows to Spain', *Applied Economics Letters*, vol. 7, no. 8, pp. 525-529.

Garín-Muñoz, T 2006, 'Inbound international tourism to Canary Islands: a dynamic panel data model', *Tourism Management*, vol. *27, no.* 2, pp. 281-291.

Garín-Muñoz, T & Montero-Martín, L.F 2007, 'Tourism in the Balearic Islands: A dynamic model for international demand using panel data', *Tourism Management*, vol. 28, no. 5, pp. 1224-1235.

Getz, D & Jamal, T.B 1994, 'The environment-community symbiosis: A case for collaborative tourism planning', *Journal of Sustainable Tourism*, vol. 2, no. 3, pp. 152-173.

Getz, D 1991, *Festivals, special events, and tourism*, New York: Van Nostrand Reinhold.

Ginsburgh, V.A & Throsby, D 2006, *Handbook of the Economics of Art and Culture*, vol. 1, North-Holland: Elsevier.

Gray, H.P 1970, *International travel–international trade*, Massachusetts: D.C. Heath Lexington Books.

Guo, Y, Seongseop Kim, S & Timothy, DJ 2007, 'Development characteristics and implications of Mainland Chinese outbound tourism', *Asia Pacific Journal of Tourism Research*, vol. 12, no. 4, pp. 313-332.

Han, Z., Durbarry, R & Sinclair, M.T 2006, 'Modelling US tourism demand for European destinations', *Tourism Management*, vol. 27, no. 1, pp. 1-10.

Hardiman, N & Burgin, S 2013, 'World Heritage Area listing of the Greater Blue Mountains—Did it make a difference to visitation?', *Tourism Management Perspectives*, vol. 6, pp. 63-64.

Hardy, A., Beeton, R.J & Pearson, L 2002, 'Sustainable tourism: An overview of the concept and its position in relation to conceptualisations of tourism', *Journal of Sustainable Tourism*, vol. 10, no. 6, pp. 475-496.

Harvey, D 1989, *The postmodern condition: an enquiry into the origins of cultural change,* Cambridge, MA: Basil Blackwell.

Hauser, J.R., Tybout, A.M & Koppelman, F.S 1977, *Consumer Oriented Transportation Service Planning: Consumer Analysis and Strategies*, Transportation Center, Northwestern University.

Hashemkhani Zolfani, S., Sedaghat, M., Maknoon, R & Zavadskas, E.K 2015, 'Sustainable tourism: a comprehensive literature review on frameworks and applications', *Economic Research-Ekonomska Istraživanja*, vol. 28, no. 1, pp. 1-30.

Hausman, J.A 1978, 'Specification tests in econometrics', *Econometrica: Journal of the Econometric Society*, vol. 46, no. 6, pp. 1251-1271.

Hazari, BR & Sgro, PM 1995, 'Tourism and growth in a dynamic model of trade', *Journal of International Trade and Economic Development*, vol. 4, no. 2, pp. 143-252.

Huang, C.H., Tsaur, J.R & Yang, C.H 2012, 'Does world heritage list really induce more tourists? Evidence from Macau', *Tourism Management*, vol. 33, no. 6, pp. 1450-1457.

Institute of Economics and Peace 2016, 'Global Peace Index', Available at: http://economicsandpeace.org/, accessed on 20 May 2016.

International Monetary Fund 2016, 'International Financial Statistics', Available at: http://data.imf.org/?sk=5DABAFF2-C5AD-4D27-A175-1253419C02D1, accessed on 23 July 2016.

Jurado, E.N., Tejada, M.T., García, F.A., González, J.C., Macías, R.C., Peña, J.D., Gutiérrez, F.F., Fernández, G.G., Gallego, M.L., García, G.M & Gutiérrez, O.M 2012, 'Carrying capacity assessment for tourist destinations. Methodology for the creation of synthetic indicators applied in a coastal area', *Tourism Management*, vol. 33, no. 6, pp. 1337-1346.

Kulendran, N & Dwyer, L 2009, 'Measuring the return from Australian tourism marketing expenditure', *Journal of Travel Research*, vol. 47, no. 3, pp. 275-284.

Keum, K 2010, 'Tourism flows and trade theory: a panel data analysis with the gravity model', *The Annals of Regional Science*, vol. 44, no. 3, pp. 541-557.

Khadaroo, J & Seetanah, B 2008, 'The role of transport infrastructure in international tourism development: A gravity model approach', *Tourism Management*, vol. *29*, no. 5, pp. 831-840.

Kim, J.H & Moosa, I.A 2005, 'Forecasting international tourist flows to Australia: a comparison between the direct and indirect methods', *Tourism Management*, vol. 26, no. 1, pp. 69-78.

King, B., Dwyer, L & Prideaux, B 2006, 'An evaluation of unethical business practices in Australia's China inbound tourism market', *International Journal of Tourism Research,* vol. 8, no. 2, pp. 127-142.

Kusni, A., Kadir, N & Nayan, S 2013, 'International tourism demand in Malaysia by tourists from OECD countries: A panel data econometric analysis', *Procedia Economics and Finance*, vol. 7, pp. 28-34.

Lancaster, K.J 1966, 'A new approach to consumer theory', *The Journal of Political Economy*, vol. 74, no. 2, pp. 132-157.

Ledesma-Rodríguez, F.J., Navarro-Ibanez, M & Pérez-Rodríguez, J.V 2001, 'Panel data and tourism: a case study of Tenerife', *Tourism Economics*, vol. 7, no. 1, pp. 75-88.

Li, G., Song, H & Witt, S.F 2004, 'Modeling tourism demand: A dynamic linear AIDS approach', *Journal of Travel Research*, vol. 43, no. 2, pp. 141-150.

Li, M, Wu, B & Cai, L 2008, 'Tourism development of World Heritage Sites in China: A geographic perspective', *Tourism Management*, vol. 29, no. 2, pp. 308-19.

Lickorish, L.J., Jefferson, A., Bodlender, J & Jenkins, C.L 1991, *Developing tourism destinations: policies and perspectives,* London: Longman.

Lim, C & McAleer, M 2002, 'Time series forecasts of international travel demand for Australia', *Tourism Management*, vol. 23, no. 4, pp. 389-396.

Lim, C 1997, 'An econometric classification and review of international tourism demand models', *Tourism Economics*, vol. 3, no. 1, pp. 69-81.

Liu, Z 2003, 'Sustainable tourism development: A critique. Journal of sustainable tourism', *Journal of Sustainable Tourism*, vol. 11, no. 6, pp. 459-475.

Lück, M 2008, *The encyclopedia of tourism and recreation in marine environments*, Wallingford, UK: CABI.

Marrocu, E & Paci, R 2013, 'Different tourists to different destinations. Evidence from spatial interaction models', *Tourism Management*, vol. 39, pp. 71-83.

Massidda, C & Etzo, I 2012, 'The determinants of Italian domestic tourism: A panel data analysis', *Tourism Management,* vol. 33, no. 3, pp. 603-610.

Mello, M.D., Pack, A & Sinclair, M.T 2002, 'A system of equations model of UK tourism demand in neighboring countries', *Applied Economics*, vol. *34, no.* 4, pp. 509-521.

Morley, CL 1992, 'A microeconomic theory of international tourism demand', *Annals of Tourism Research*, vol. 19, no. 2, pp. 250-67.

Morley, CL 1998, 'A dynamic international demand model', *Annals of Tourism Research*, vol. 25, no. 1, pp. 70-84.

Morley, C.L 2009, 'Dynamics in the specification of tourism demand models', *Tourism Economics*, vol. 15, no. 1, pp. 23-39.

Morley, C.L., Rosselló, J & Santana-Gallego, M 2014, 'Gravity models for tourism demand: theory and use', *Annals of Tourism Research*, vol. 48, pp. 1-10.

National Bureau of Statistics of China 2016, 'China Statistic Yearbook (2007-2014)', Available at: http://www.stats.gov.cn/english/statisticaldata/AnnualData/, accessed on 12 July 2016.

Naudé, W.A & Saayman, A 2005, 'Determinants of tourist arrivals in Africa: a panel data regression analysis', *Tourism Economics*, vol. 11, no. 3, pp. 365-91.

Pan, G.W & Laws, E 2003, 'Tourism development of Australia as a sustained preferred destination for Chinese tourists', *Asia Pacific Journal of Tourism Research*, vol. 8, no. 1, pp. 37-47.

Papatheodorou, A 2001, 'Why people travel to different places', *Annals of Tourism Research*, vol. 28, no. 1, pp. 164-179.

Pearce, D.G 1981, *Tourist development*, Harlow, England: Longman.

Pearce, D.W & Turner, R.K 1990, *Economics of natural resources and the environment*, Baltimore: Johns Hopkins University Press.

Piciu, G.C & Trica, C 2011, 'The impact of tourism upon natural capital', *EIRP Proceedings*, vol. 6, pp. 354-359.

Pickering, C.M & Hill, W 2007, 'Impacts of recreation and tourism on plant biodiversity and vegetation in protected areas in Australia', *Journal of Environmental Management*, vol. 85, no. 4, pp. 791-800.

Prideaux, B 2005, 'Factors affecting bilateral tourism flow', *Annals of Tourism Research*, vol. 32, no. 3, pp. 780-801.

Qiu, R, Xu, W & Li, S 2016, 'Agent-based modeling of the spatial diffusion of tourist flow—A case study of Sichuan, China', *Journal of China Tourism Research*, vol. 12, no. 1, pp. 1-23.

Reisinger, Y & Turner, L 1998a, 'Cultural differences between Mandarin-speaking tourists and Australian hosts and their impact on cross-cultural tourist-host interaction', *Journal of Business Research*, vol. 42, no. 2, pp. 175-87.

Richards, G & Wilson, J 2006, 'Developing creativity in tourist experiences: A solution to the serial reproduction of culture?', *Tourism Management*, vol. 27, no. 6, pp. 1209-1223.

Robinson, M 1999, 'Collaboration and cultural consent: Refocusing sustainable tourism', *Journal of Sustainable Tourism*, vol. 7, no. 3-4, pp. 379-97.

Rugg, D 1973, 'The choice of journey destination: a theoretical and empirical analysis', *The Review of Economics and Statistics*, vol. 55, no. 1, pp. 64-72.

Saarinen, J 2006, 'Traditions of sustainability in tourism studies', *Annals of Tourism Research,* vol. 33, no. 4, pp. 1121-1140.

Schumacher, E.F 1973, *Small is beautiful: A study of economics as if people mattered*, London: Random House.

Seddighi, H.R & Theocharous, A.L 2002, 'A model of tourism destination choice: a theoretical and empirical analysis', *Tourism Management*, vol. 23, no. 5, pp. 475-87.

Seetaram, N 2010, 'Use of dynamic panel cointegration approach to model international arrivals to Australia', *Journal of Travel Research*, vol. 49, no. 4, pp. 414-22.

Sequeira, T.N & Maçãs Nunes, P 2008, 'Does tourism influence economic growth? A dynamic panel data approach', *Applied Economics*, vol. 40, no. 18, pp. 2431-41.

Shafer, C.S & Inglis, G.J 2000, 'Influence of social, biophysical, and managerial conditions on tourism experiences within the Great Barrier Reef World Heritage Area', *Environmental Management*, vol. 26, no. 1, pp. 73-87.

Shan, J & Wilson, K 2001, 'Causality between trade and tourism: empirical evidence from China', *Applied Economics Letters*, vol. 8, no. 4, pp. 279-83.

Sheldon, P.J & Var, T 1985, 'Tourism forecasting: a review of empirical research', *Journal of Forecasting*, vol. 4, no. 2, pp. 183-195.

Sinclair, M.T 1998, 'Tourism and economic development: A survey', *The Journal of Development Studies*, vol. 34, no. 5, pp. 1-51.

Song, H & Li, G 2008, 'Tourism demand modelling and forecasting—A review of recent research', *Tourism Management*, vol. 29, no. 2, pp. 203-20.

Song, H., Li, G., Witt, S.F & Fei, B 2010, 'Tourism demand modelling and forecasting: how should demand be measured?', *Tourism Economics*, vol. 16, no. 1, pp. 63-81.

Song, H & Witt, S.F 2000, *Tourism demand modelling and forecasting: Modern econometric approaches*, Amsterdam: Pergamon.

Su, Y.W & Lin, H.L 2014, 'Analysis of international tourist arrivals worldwide: The role of world heritage sites', *Tourism Management*, vol. 40, pp. 46-58.

Teo, P & Huang, S 1995, 'Tourism and heritage conservation in Singapore', *Annals of Tourism Research*, vol. 22, no. 3, pp. 589-615.

Tisdell, C & Wilson, C 2002, 'World heritage listing of Australian natural sites: tourism stimulus and its economic value', *Economic Analysis and Policy*, vol. 32, no. 2, pp. 27-49.

Tinbergen, J 1962, *Shaping the world economy - suggestions for an international economic policy*, New York: Twentieth Century Fund.

Torres-Reyna, O 2010, 'Getting started in fixed/random effects models using R', *Data & Statistical Services Princeton University*, Available at: http://dss.princeton.edu/training/Panel101R.pdf, accessed on 27 May 2016.

Tourism Australia 2015, 'Understanding the Chinese Consumer, Consumer Demand Project', Available at: http://www.tourism.australia.com/documents/Statistics/Consumer-demand-project-China.pdf, accessed on 26 May 2016.

Tourism Australia 2015, *China Market Profile*, Avaible at:

http://www.tourism.australia.com/documents/Markets/Market_Profile_2015_China.pdf, accessed on 23 Sep 2016.

UNESCO 2016, *World Heritage List*, Available at: http://whc.unesco.org/en/list, accessed on 23 May 2016.

UNESCO 2016, *World Heritage*, Available at: http://whc.unesco.org/en/about/, accessed on 22 May 2016.

UNWTO 2005, *Making Tourism More Sustainable - A Guide for Policy Makers*, p.11-12, Available at: http://naturalcapitalforum.com/, accessed on 16 March 2016.

UNWTO 2016, *Tourism Market Trends*, Available at: http://mkt.unwto.org/, accessed on 9 April 2016.

UNWTO 2016, Arrival Data Provided by *Statistics and Tourism Satellite Account*, accessed on 5 July 2016.

Worboys, G., Lockwood, M & De Lacey, T 2002, 'Protected area management—principles and practice', *Australian Geographical Studies*, vol. 40, no. 2, pp. 244-259.

World Bank 2016, *World Development Indicators*, Available at: http://data.worldbank.org/data-catalog/world-development-indicators, accessed on 5 July 2016.

World Forum on Natural Capital 2015, *What is Natural capital Edinburgh*, Available at: http://naturalcapitalforum.com/about/, accessed on 26 May 2016.

Yang, C.H & Lin, H.L 2011, 'Is UNESCO recognition effective in fostering tourism? A comment on Yang, Lin and Han: reply', *Tourism Management*, vol. 32, no. 2, pp. 455-456.

Yang, C.H., Lin, H.L & Han, C.C 2010, 'Analysis of international tourist arrivals in China: The role of World Heritage Sites', *Tourism Management*, vol. 31, no. 6, pp. 827-837.

Zeppel, H 2006, *Indigenous ecotourism: Sustainable development and management*, Wallingford: Cabi.

Zhang, J & Jensen, C 2007, 'Comparative advantage: explaining tourism flows', *Annals of Tourism Research*, vol. 34, no. 1, pp. 223-243.

Shan, J & Wilson, K. 2001, 'Causality between trade and tourism: empirical evidence from China', *Applied Economics Letters*, vol. 8, no. 4, pp. 279-283.

Zhang, H., Xu, F., Lu, L & Lei, Y 2015, 'Cultural Capital and Destination Image of Metropolitans: A Comparative Study of New York and Tokyo Official Tourism Websites in Chinese', *Journal of China Tourism Research*, vol. 11, no. 2, pp. 121-149.