

**IMPACT OF THE OLYMPIC GAMES ON THE
HOST CITY'S LODGING MARKET**

by

Yingshun Li

A thesis submitted to the Faculty of the University of Delaware in partial
fulfillment of the requirements for the degree of Master of Science in Hospitality
Information Management

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Yingshun Li

Approved: _____

Brian Miller, Ed.D.

Professor in Charge of thesis on behalf of the Advisory Committee

Approved: _____

Sheryl Kline, Ph.D.

Chairperson of the Department of Hotel, Restaurant and Institutional
Management

Approved: _____

Bruce W. Weber, Ph.D.

Dean of the Lerner College of Business and Economics

Approved: _____

James G. Richards, Ph.D.

Vice Provost for Graduate and Professional Education

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ABSTRACT

The Olympic Games, a sports mega-event, receives tremendous worldwide attention. Many industries of host countries have seen distinct benefits from hosting the Olympic Games. The tourism and hospitality industry also has been affected dramatically because of the short-term concentration of visitors. This major change is readily observed in the host city's lodging market.

This study investigates the host city's response to the Olympic Games which is demonstrated by the change in the six metrics of the hotel industry: supply, demand, occupancy rate (Occ), average daily rate (ADR), revenue, and revenue for per available room (RevPAR). All data is sourced from Smith Travel Research Global having been collected from four years prior to the Olympic Games until two years after the Olympic Games. Two Summer Olympic Games and two Winter Olympic Games host cities are discussed in this study: Sydney 2000 Summer Olympic Games, Athens 2004 Summer Olympic Games, Turin 2006 Winter Olympic Games, and Vancouver 2010 Winter Olympic Games. The change of the six important metrics in the hotel industry shows how the host city's lodging market is affected by the Olympic Games.

The results clearly show that the host city's lodging market reacts significantly to the Olympic Games. The six metrics of the lodging market of the four host cities improved tremendously during the Olympic Games but showed different

trends before and after the Olympic Games. Moreover, the change happened more significantly during the Olympic year.

Keywords: Olympic Games, supply, ADR, RevPAR, Sydney, Athens, Turin, Vancouver, hotel industry

Chapter 1

INTRODUCTION

The Olympic Games represents a global icon of competitive sports. Thousands of the best athletes in the world, millions of sports fans and tourists, and billions of television viewers pay attention to the Olympic Games. Approximately, 4.7 billion people watched the Beijing 2008 Summer Olympic Games (“Beijing TV coverage,” 2008). China spent 40 billion dollars preparing and hosting the Beijing 2008 Summer Olympic Games (Rosenblum, 2009). Normally, there are nine to ten years between a country’s National Olympic Committee application to host the Olympic Games and the Olympic Games actually being held in a country (Hu and Singh, 2008). Hosting the Olympic Games is an extremely complicated project. A country which wants to host the Olympic Games must invest tremendous resources and time to complete all the various activities in order to create and achieve a successful Olympic Games.

1.1 Background

The tourism and hotel industry, one of the world's largest and fastest growing industries, greatly depends on the international visitors. More and more countries with a traditional industry base have begun to pay attention to the services economy and the direct and indirect benefits which have been brought from the service industry (Segebarth, 1990). This industry is an integral part of hosting the Olympic Games. As one of the world's largest events, the Olympic Games brings substantial economic, social, political and numerous other benefits to the host country, region and city (Aitken and Ritchie, 1985; Parent, 2008; Ritchie, 1984). Countries from all over the world consider that hosting the Olympic Games remarkably impacts the host city.

The Olympic Games attract people from all over the world to visit the place where the Olympic Games are hosted, and the host city naturally becomes the travel destination. Because of the huge benefits generated from hosting the Olympic Games, the competition of becoming a host city is extremely severe. Politicians and proponents positively predict that an Olympic Games will produce huge economic benefits for the host country (Fletcher and Porter, 2008). The expectations of these benefits are driven by newly constructed event facilities and infrastructure, urban revival, increased tourism, an enhanced international reputation, improved public welfare, extra employment opportunities, local business opportunities, and corporate relocation exposure (Kasimati, 2003). For the tourism and hotel industry, the Olympic Games has an important role

because it could be a turning point for the host city. The reason is that it will have the improvement in awareness, and the image of the host city will be changed to an international tourism destination eventually (Hall, 1989; Blake and Li, 2009). By hosting a successful Olympic Games, a city can show its capability of comprehensive technique and power. Moreover, host countries will receive the transferred income from the investment in goods and services (Segebarth, 1990). All eyes are focused on this grand world event; therefore, it is absolutely the best way for a host city to present itself to the world.

In the three-week Atlanta 1996 Summer Olympic Games, visitors spent 3.5 billion dollars, and over 77 thousand additional jobs were created (Hotchkiss, Moore and Zobay, 2003). Moreover, China has made a huge number of investments to the Beijing 2008 Summer Olympic Games (Bingham and Shibli, 2008). It greatly influenced Beijing's economic development, environment, transportation, infrastructure and urban renewal (Sands, 2008). The Olympic Games was also the main cause of the booming tourism industry of Beijing and China (Bai et al., 2012). A worldwide survey found that approximately 51 percent of 26,000 people from 26 countries and regions showed that they planned to travel China at some point after the closing ceremony of the Games (Xin, 2008).

Global events, such as the Olympic Games, attract visitors from all over the world for only a few weeks, but it extends the power for a long time. Because of its intense exposure of the host city and country, most industries of the host country prepare

and do their best to take advantages of the Olympic Games. All market players do not hesitate to put all of their efforts in preparing and hosting the Olympic Games before the Games begins. This is why all countries desire the chance to hold the Olympic Games at all costs each time. Also, the hotel industry, as one of the main players during the Olympic years, cannot miss this chance and always prepares to welcome the global event. Hotel investors and operators readily extend their supply by constructing new buildings. Moreover, to give an unforgettable impression and obtain future loyal customers, hotels also invest extensively on remodeling current rooms and upgrade the furniture of the rooms. A large amount of capital is required, but hotel investors never cease to contribute their money.

As an example, we can look at the Beijing 2008 Summer Olympic Games. Many big-name hotel brands began to extend their properties, such as Westin, Marriot, Park Hyatt, Mandarin Oriental, Intercontinental and Crown Plaza (Wheatley, 2008). Three more hotel brands, the Four Seasons, the Conrad, and Shangri-La, opened two years later (Wheatley, 2008). Also, according to a report from hotel consultancy Horwath HTL, the five-star rooms were increased from 8,195 in 2007 to 16,805 in 2010 (Wheatley, 2008). It is obvious that the number of rooms doubled from 2007 to 2010. Specifically, Hilton hotels planned to construct 19 more Hilton brand hotels across the country by 2011 (Wheatley, 2008). In addition, Hyatt, Starwood, and some other hotel brands had sufficient plans to continue the trend (Wheatley, 2008).

The facts detailed above demonstrate that the number of new hotel constructions before the Olympic Games rapidly increased. The extraordinary power of the Olympic Games and the solid confidence in the magic of the Olympic Games push hotel investors and operators to increase the number of new hotel rooms so that they can avoid losing even one customer due to the lack of the rooms.

1.2 Purpose of the Research

The Olympic Games is a significant and impactful event for the host country. The dramatic impacts are closely related to the different industries and markets. The hotel industry is affected tremendously by the Olympic Games. This study seeks to describe the host city's reaction to the Olympic Games. The study used six metrics of the hotel industry to observe the impact of the Olympic Games on the host city's lodging market. Four host cities of two Summer Olympic Games and two winter Olympic Games are discussed in this study. Data sets for each host city were obtained from Smith Travel Global Research. These data sets include the markets' hotel performances for a total of six years. The objective of the current study is to determine how the six metrics of the host city's lodging market respond to the Olympic Games. Moreover, this paper presents the different performances of the six metrics during the Summer Olympic Games and the Winter Olympic Games.

1.3 Significance of the Research

Previous research has used various methods to observe and discuss the impact of the Olympic Games on the host cities. Specifically, there are many studies regarding the economic impact, such as employment opportunities, business opportunities, and urban renewal. Furthermore, it is easy to find some studies which focus on other relationships between the host city and the Olympic Games, such as the development of facilities and infrastructure of the host city and the Olympic Games, the international reputation of the host city and the Olympic Games, and the environment of the host city and the Olympic Games.

However, the response of the host city's lodging market to the Olympic Games has received little attention, although it is possible to find studies which look at the relationship between the tourism industry and the Olympic Games. The Olympic Games as a global event has significant impact not only to the host city's tourism market, but also to the host city's lodging market. Therefore, it is vital to analyze how the host city's lodging market responds to the Olympic Games and if the response is significant. As of now, this study would be the first empirical research focusing on the relationship between the host city's lodging market and the Olympic Games.

The findings of this study provide some evidence of the impact of the Olympic Games on the host city's lodging market. A clear understanding of the impact would help both hotel operators and hotel investors to make more accurate and effective decisions

before they prepare for the Olympic Games. Moreover, hotel operators and investors would be able to predict more meticulous results based on the findings in this study.

This research also presents the findings from two Summer Olympic Games and two Winter Olympic Games. The results are very different by seasons; hence, we can easily find the different changes which may be generated by the season. Moreover, the findings are described by the change in the six metrics of the hotel industry. These metrics fit together to effectively express the change of the hotel performances. The usage of the six metrics is clearly allows hotel operators and hotel investors to ascertain the magnitude of the impact of the Olympic Games on the host city's lodging market.

Chapter 2

LITERATURE REVIEW

Over the past several decades many studies have been published on the relationship between the Olympic Games and the economic impact on the host city. Moreover, it is easy to find various articles that are related to the impact of the Olympic Games on the hotel industry. However, it is critical to examine relevant concepts and theories in regard to the Olympic Games and the host city's lodging market. This literature review will accomplish that examination.

The literature review is divided into six parts: sports mega-events of which the Olympic Games is one, the objectives of counties seeking to host the Olympic Games, the corresponding economic impact of the Olympic Games on the host city, measuring and evaluating the economic impact of sports mega-events, an introduction of the four Olympic Games which are analyzed in this study, and a brief summary of the literature review. This analysis of the literature will provide readers with a foundation on which to build their understanding of the study as a whole.

2.1 Sports Mega-Events

Over the last few decades, the tourism industry has developed and grown exponentially. It has shifted from a mass market to niche tourism (Kirkup and Major, 2006). Tourists' expectations and requirements have changed substantially. Tourists have higher expectations and are looking to add more depth to their tourism (Boniface, 2001). To satisfy tourists' high expectations, new sectors of tourism are emerging, and one of the new sectors rapidly gaining is sport tourism (Kirkup and Major, 2006).

Sports mega-events have been discussed and analyzed for many years. Roche (2000) stated that mega-events could be defined as large-scale cultural (including commercial and sporting) events, which have a dramatic character, mass popular appeal and international significance. By definition, it is assumed that sports mega-events significantly impact the host city and country, in addition to gaining media attention (Fourie and Santana, 2011). Sports mega-events have the capability of attracting billions of people from all over the world; the magnitude is extraordinary (Robert, 2004). For example, over 3.9 billion people worldwide watched the Athens 2004 Olympic Games through television, and there were 35,000 hours of media coverage (Lewis, 2010).

Sports mega-events give the host city an opportunity to show itself to the world quickly and intensely, allowing the host city to provide a significant impression to direct and indirect audiences. Indirect audiences, such as television viewers, have significant roles

because their interest in the host city may translate to economic benefits in the host region. Hosting a sports mega-event may be more worthy than the name of the city itself because the fans of the sport could become fans of the host city (Breitbarth, Conejo and Florek, 2008).

Interest in sports mega-events is growing rapidly, and in the past 20 years, more countries have fiercely competed with each other to obtain the chance to host one of these events, especially the Olympic Games, the World Football Championships, and cultural events like expositions, capitals of culture, and trade fairs (Dansero and Puttilli, 2010). The magnitude of the Olympic Games and people's interest in it are multiplying and spreading. For instance, comparing the Los Angeles 1984 Summer Olympic Games with the Athens 2004 Summer Olympic Games, the growth is significant. There were 6797 athletes participating in the Los Angeles 1984 Summer Olympics in 221 events of 23 sports, and all the athletes were from 140 countries (Deknop and Standeven, 1999). However, during the Athens 2004 Summer Olympic Games, the number of competing athletes grew to 10,625, and the number of events rose to 301 in 28 Olympic sports ("Factsheet: the Games of the Olympiad," 2013; "Opening and closing ceremonies," 2004). Clearly, the number of participating athletes increased tremendously in the Athens 2004 Summer Olympic Games. These remarkable statistics alone demonstrate how quickly the Olympic Games has developed and grown.

Mega-events, especially sports mega-events, interact dramatically with the economy of a city. The Olympic Games, as a world sport, has an unparalleled scale and potential impact on the economics of host cities (O'Brien, 2006). Also, the host city and nation can

receive increased publicity and enhanced awareness because of mega-events (Faulkner and Jeong, 1996). Naturally, the high volume of visitors during mega-events can attract investors who are interested in constructing new infrastructure and facilities, utilized by the local people and tourists (Mihalik and Simonetta, 1998). According to the research, 50 percent of the residents noted that they saw noticeable benefits from the Calgary 1988 Winter Olympics; 36.3 percent of them pointed out that there was an increase in tourism, and 34 percent said that the Calgary 1988 Winter Olympics brought economic benefits (Lyons and Ritchie, 1990). Moreover, it is possible that a city which hosts mega-events may become an international, metropolitan city, such as Manchester during the 2002 Commonwealth Games and Barcelona with the 1992 Olympic Games (Cleeve, Ritchie and Shipway, 2009). Before hosting mega-events, both Manchester and Barcelona were not publicly very well-known and did not have an acute awareness internationally (Cleeve, Ritchie and Shipway, 2009). However, they successfully gained the opportunity to host mega-events and met the challenge of major regeneration which included the development of the local infrastructure, tourist attractions, shopping and dining facilities, and improved transportation infrastructure (Cleeve, Ritchie and Shipway, 2009).

2.2 Objectives of Hosting Olympic Games

Roche (1994) said that if the mega-events can help the host city to achieve economic and cultural success, it is possible for the host city to gain the long-term benefits in tourism, industry relocation, and investment. Winning medals, especially gold medals, is not the only objective of the host city; they want to win economically, environmentally, psychologically, and politically (Aitken and Ritchie, 1985). Specifically, the financial objective is the most important aspect of hosting the event. More host countries are highly interested in achieving this long-term objective because the results could bring great benefits to the host city. The host country invests multiple resources including assets and labor into the Olympic Games in order to generate a successful and impressive world event; however, most of the facilities and related sources are mainly utilized only during the Olympic Games and do not play a major role after the event. Therefore, the host city pays more attention to gaining long-term benefits rather than solely focusing on a short-term benefit. A short-term objective can bring unprecedented benefits to the host city, returning the initial costs instantly, but some host cities have found that there can be a substantial return in the form of long-term benefits if they prepare sufficiently.

The objectives for hosting mega-events vary from city to city. Athens 2004 Olympic Games, Turin 2006 Olympic Games, Beijing 2008 Olympic Games, and Vancouver 2010 Olympic Games committee indicated that they were very satisfied with the results of the Olympic Games, and the event was beneficial to the host city (Parent, 2008). Some countries

focus on bringing the spotlight to the host area and advertising it to the world, and other countries may be more interested in attracting investment and creating jobs (Frey and Nixon, 1996; Preuss, 2000). Determining the success of hosting the Olympic Games depends on the stand point of the city and its objective. Thus, it is critical for the host city to decide the objectives of hosting the Olympic Games because they have important roles in the main plan and path of the Olympic Games.

Recently, sustainable development has been emphasized by the host city (Hall, 2012). Furrer (2002) mentions that “a path of socio-economic development that is financially balanced, socially equitable, ethically responsible, and adequately integrated in the long-term ecological balance is referred to sustainable development” (p.2). In recent decades, it has become simple to find “green,” “sustainable,” and “ecological” development. Concerns about environmental protection and sustainable development have become a major worldwide issue, and businesses are have become more environmentally friendly (Shen and Zheng, 2010). The tourism and hotel industry, as one of the world’s largest and fastest growing industries, is also paying more attention to the sustainable development. Because of enormity of the Olympic Games, it is closely related to ecological and sustainable problems (Lim and Noriega, 2011). Measuring the success of the Olympic Games takes into account the ecological and sustainable development in recent years because visitors and audiences are paying greater attention to the environmental problems (Konstantaki and Wickens, 2010).

To prepare for a large volume of visitors from the world including athletes and sports fans, nearly all industries become involved. Different objectives have been set by

different industries, and all efforts are made to achieve the goals. The hotel industry also needs to prepare sufficiently so that it can have active roles and take sufficient advantage of the Olympic Games. Each hotel decided its own objective at different stages, such as the minimum objective. From the stand point of a hotel, the results are more pointed if they are described as the supply, demand, occupancy rate, ADR, revenue, and RevPAR. Many hotels begin to construct new buildings or increase hotel rooms in order to attain their own objective. For example, a certain number of hotels in Sydney increased the rooms in both in famous chain hotels and local hotels, such as The Great Northern Hotel Newcastle, Radisson Hotel & Suites Sydney, Cambridge Hotel Sydney, Holiday Inn Darling Harbour, Marriott Sydney Harbour Hotel, Four Points Sheraton Sydney Darling Harbour (Smith Travel Research Global, 2013).

To summarize, the objectives of hosting the Olympic Games are extremely important to the whole path of the host city. Each market player makes a different plan according to the specific objectives. This is why an industry should have an objective which can be applied practically. The objective of hosting the Olympic Games should be appropriate to bring sufficient returns (Aitken and Richie, 1985). When hotel operators and investors plan to build new hotels or increase hotel rooms, they should have an appropriate and profitable objective so that the benefits will be maximized long after the tremendous investment.

2.3 The Economic Impact of Olympic Games

The economic impact of hosting the Olympic Games has been largely witnessed in the 21st century (Kitkup and Major, 2006). It has been shown that the first host city which successfully generated significant income from the Olympic Games was Los Angeles (Kitkup and Major, 2006). Los Angeles gained a surplus of 215 million Euros from the Los Angeles 1984 Olympic Games (Blake, 2005). Los Angeles benefitted dramatically by hosting the 1984 Olympic Games, and it helped to change the entire image of the city (Dobson, Grantton and Shibli, 2000). Several studies have examined the potential economic benefits that a host city may achieve from hosting the Olympic Games (Kitkup and Major, 2006). It is possible to find a number of reasons why many countries wish to host the Olympic Games. One significant reason is that the Olympic Games can be a great intermediary which will announce a rarely recognized region or culture to the world (DeKnop and Standeven, 1999).

Sports tourism has multiple advantages because it is in the introduction phase of the tourism product life cycle, and it allows the host city to have a unique competitive advantage which pushes the product to become popular in a short time (Kitkup and Major, 2006). There are a number of different tourisms included in the tourism product life cycle, such as organized trips, non-organized trips, business trips, incentive trips, senior citizens tourism, sun and beach tourism, and active and adventure tourism (Kitkup and Major, 2006). Sports tourism has another benefit of being durable in the midst of rising growth (Kitkup and Major,

2006). In the world of sports, because of the magnitude and the potential impact of the Olympic Games, it can bring long term positive consequences for the host city in a relatively short time (Roche, 1994). Hosting the Olympic Games has been critical to the host region and played important roles in creating economic impact. Moreover, the International Olympic Committee (IOC) expressed that the promotion of a positive legacy from the Games to the host city and host country should also be one of the core missions (Kirkup and Major, 2006). Furthermore, the host city may find economic impact not only during the period of holding the Olympic Games, but also before and after the event (Kirkup and Major, 2006). The impact exists from the time when a country wins the bid and heavily occurs during the period of the Olympic Games (Preuss, 2002).

The Olympic Games, as one of the representative mega-events, significantly impacts the overall impression of the host region (Law, 1993). The host region also receives a huge number of benefits, such as increased visitation to the host region, additional employment, and improvements to a destination's image or brand (Kirkup and Major, 2006). Moreover, it influences a country or city which may not have been popular before the event can suddenly be explored and lauded after mega-events (Chalip, Green and Hill, 2003). The increased profile through advertising and news coverage propels immediate and future tourism development (Chalip, Green and Hill, 2003).

Mega-events have a close relationship with various parts of the host city, such as its economy, tourism, society, culture, and politics. Researchers indicate that the Olympic Games have extraordinary influence on the host city, and the event has received noticeable

increased attention from countries around the world. Countries consider the opportunity of hosting the Olympic Games as the best time to promote their international reputation. The pursuit of hosting an Olympic Games has become more competitive, and countries are willing to dedicate multifarious resources and effort to achieve a successful bid. The Barcelona 1992 Olympic Games, for instance, spent 10 billion dollars on their bid and 10.7 billion dollars in hosting the event (Burton, 2003). The dollar amount spent from the bid to the end of the 1992 Barcelona Olympic Games was more than the annual gross domestic product (GDP) of some countries, such as The Bahamas (Burton, 2003). It shows that most countries consider the opportunity of hosting the Olympic Games to be extremely beneficial and worthy. However, the question of whether hosting the Olympic Games truly benefits the host region has been controversial for many years. Researchers express that the answer should depend on the specific objectives of the host city (Foy, 2002). The objectives of hosting the Olympic Games are different in each country. Likewise, each host country has different expectations of hosting the Olympic Games.

2.4 Measuring and Evaluating Economic Impacts of Sports Mega-Events

Since multiple countries pay attention to the Olympic Games, there are a number of existing models which measure and calculate the economic impact of hosting the event. Undoubtedly, these existing studies and models are valuable in assisting the countries which are planning to host the Olympic Games.

One method for measuring and calculating the economic impact of hosting the Olympic Games is the Input-Output (I-O) model. Leontief originally created this method in the 1940s (Wagner, 1997). The Input-Output model is critical because it can measure all of the positive impacts of an event (Blake, 2005). However, one significant issue with the Input-Output model is that it is not capable of displaying most of the negative impacts (Madden, 2002). The Computable General Equilibrium (CGE) model is another important measurement method. The CGE framework is essential because it automatically captures the displacement effects which are generated from the overly-optimistic estimates of spin-offs from the Olympic Games (Madden, 2002). The CGE framework had not been applied to the Olympic Games until 1997, but it was first used to analyze the Sydney 2000 Olympic Games (Kirkup and Major, 2006). Australian studies utilized the Monash multi-regional forecasting (MMRF) model to evaluate the economic impact of the Sydney 2000 Olympic Games, and this model is a typical example of a dynamic CGE model (Kasimati, 2003).

Moreover, there is another model used to project the economic impact of sports events on a community (Kirkup and Major, 2006). It is the Sports Tourism Economic Assessment Model (STEAM) which was initially developed by the Canadian Sport Tourism Alliance (Kirkup and Major, 2006). This model is based on the Input-Output model; therefore, the same problem of the Input-Output model also exists in the STEAM (Kirkup and Major, 2006). However, this model is a useful tool because of its theoretical basis in economic analysis (King, 2003).

Another model named the Local Area Tourism Impact (LATI) Model was created by the London Development Agency (LDA) to moderate the problems occurring in the previous models (Kirkup and Major, 2006). The benefit of this model is that it can measure more precise tourism impacts, especially at the local level (King, 2006). Because of the relatively accurate measurement of tourism impacts, it is tremendously helpful for the host country to make more appropriate policies in the future (Kirkup and Major, 2006). However, this model has not been used to any sport tourism events yet (Kirkup and Major, 2006). There are many other models used to measure and calculate the economic impacts of hosting the Olympic Games, and all of these models are combined to defeat some of the problems found in other models.

2.5 History of the Olympic Games

The early Olympic Games began in 776 B.C. in ancient Greece (“Ancient Olympic Games,” 2013). The Olympic Games is considered the oldest and most prestigious of the four great ancient Greek athletic festivals; the other three are the Pythian Games at Delphi, the Isthmian at Corinth, and the Nemean at Argos (“The Olympics of Ancient Greece,” 2012). In the beginning, the Games belonged to one part of a religious festival (“Ancient Olympic Games,” 2013). The early Olympic Games were also very important to the Grecians. It was organized by Zeus, king of the gods, and Olympia was selected to be the place where the early Games were held (“Ancient Olympic Games,” 2013). The early Olympic Games were only held one day until 684 B.C., but it soon ran for three days and was held later every fourth summer (“Ancient Olympic Games,” 2013). A winner was rewarded immediately after the competition, placing a palm branch in the winner’s hands (“Ancient Olympic Games,” 2013). Competitors had a strong passion and a gracious spirit for the games, not for the prize, but for the pure competition. The early Olympic Games received ample attention from all Greeks, and the winners were adored. In other words, the winners became heroes after the Games. These heroes of the early Olympic Games came from various countries, bearing the long journey to participate in the early Olympic Games (“Ancient Olympic Games,” 2013).

In 1896, the first modern Olympiad was held in Athens (Kasimati, 2003). The Games were not well organized, and only athletes from a few counties attended (“The

modern Olympic Games,” 2012). Although a few more Olympic Games were held after the Athens 1896 Olympic Games, the results were not positive. In 1908, the first successful Olympic Games were hosted in London (“The modern Olympic Games,” 2012). At the London 1908 Olympic Games, there were more than 2,000 athletes from 22 countries (“London 1908,” 2013).

Since the first successful modern Olympic Games, people have experienced 24 Summer Olympic Games and 22 Winter Olympic Games (“Factsheet: the Games of the Olympiad,” 2013; “Factsheet: the Olympic Winter Games,” 2013). Because summer sports and winter sports have different requirements for weather and environment, there are Summer Olympic Games and Winter Olympic Games. Historically, the Olympic Games had to stop a few times due to the turbulent period of World War I and World War II (“Factsheet: the Games of the Olympiad,” 2013). The Olympic Games in 1916, 1940 and 1944 were not held because of these World Wars (“Factsheet: the Games of the Olympiad,” 2013).

2.5.1 Sydney 2000 Summer Olympic Games

Sydney, Australia, began to acquire comprehensive strength in the management and co-ordination of the international system of finance and production during the 1990s (Waitt, 2001). Hundreds of worldwide brands of banks, hotels and other service industries began to show interest in opening their headquarters in Sydney (Waitt, 2001). As the result, Sydney attracted worldwide attention and developed into a global city. With its noteworthy growth of global strength, Australia became interested in hosting an influential worldwide event, such as the Olympic Games. In 1956, Australia successfully held the Melbourne Summer Olympic Games (“Melbourne/Stockholm,” 2013). In 1993, Sydney was selected to host the 2000 Summer Olympic Games (Wells, 2013). In the Sydney 2000 Summer Olympic Games, 10,651 athletes from 199 competing countries participated in 300 events (Wells, 2013). The Sydney 2000 Summer Olympic Games received numerous favorable reviews from the international media (Wells, 2013). Olympic Committee announced that Sydney 2000 Summer Olympic Games was exceptionally organized, and it truly reflected the Olympic values and sporting excellence (Wells, 2013). Bill Bryson from The Times said that the Sydney 2000 Summer Olympic Games was so successful that any other cities which planned to bid to host for future Olympics should seriously consider about how to reach the standards that Sydney had presented (Morse, 2001). The International Olympic Committee (IOC) announced that Australia had held the best Olympic Games (Morse, 2001).

Sydney 2000 Olympic Games achieved unprecedented success, and it automatically transferred benefits to many industries, especially the tourism industry. People all over the world began to pay attention to Australia, greatly increasing the number of international visitors (Morse, 2001). The Australian Tourist Commission (ATC) declared that a large number of foreigners pointed to Australia as their next holiday destination (Morse, 2001). For example, according to a survey, approximately 75 percent of Americans expressed that they would visit to some other travel places besides the Olympic Games after they had seen pictures and stories of Australia; moreover, 50 percent of Americans answered that they would definitely come back to visit Australia again in the future (Morse, 2001).

Sydney 2000 Olympic Games had an unparalleled effect on the city. The Games were documented as the first in which a host country set an objective to attract more visitors and received a positive tourism legacy from hosting the Games (Chalip, 2002). Sydney 2000 Olympic Games brought 110,000 international visitors to Sydney as well as 18,000 media representatives (Oakley, 2000). The Australian Bureau of Tourism Research predicted that there would be at least 1.6 million more visitors between 1997 and 2004 because of the Sydney 2000 Olympic Games (Oakley, 2000). Also, according to the bureau, around 3.4 billion dollars in revenue would be brought to Australia from the visitors (Oakley, 2000). The tremendous increase in visitors raised expectations in the tourism and hotel industry as to its future market performance. According to an independent economic impact study by KPMG, Australia would achieve 7.3 billion dollars injection from business and create 156,000 new jobs (Waite, 2001).

2.5.2 Athens 2004 Summer Olympic Games

Athens, Greece was publicly announced that it would be the city to host the 2004 Summer Olympic Games. Greece is the birthplace of both the ancient and modern Olympic Games, and the Games returned to the birthplace in 2004 (“28th Olympic Summer Games,” 2004). Other countries had competed with Greece to host the Games, such as South Africa, Sweden and Argentina (“Factsheet: the Games of the Olympiad,” 2013). The number of athletes who participated in the Athens 2004 Summer Olympic Games was approximately 10,625 from 201 countries, and 301 medal events were generated in 28 different sports (“28th Olympic Summer Games,” 2004). The number of events held was more than in the Sydney 2000 Olympic Games, and also the number of television viewers reached new highs (“28th Olympic Summer Games,” 2004).

In fact, Athens missed the chance to hold the 1996 Olympic Games because the city did not prepare well to welcome the worldwide event (Hunt, 1997). One vital weakness was its infrastructure (Hunt, 1997). Greece failed to host the 1996 Olympic Games due to its overall disorganization and arrogance (Hunt, 1997). After that failure, Greece spent almost seven years preparing for the 2004 Olympic Games, and it focused on the central problems which were pointed out by the International Olympic Committee (IOC), the supreme authority of the Olympic Movements (Hu and Singh, 2008). The various concerns noted by the IOC were Athens’s infrastructure, television rights, accommodations, media services, accreditation, cleanliness, security, technology, ticketing, food and beverage services, and

transportation (Hu and Singh, 2008). Athens is famous for its tremendous cultural heritage (Hu and Singh, 2008). However, travelers were not satisfied with the neglect and insufficient tourism services in Athens, and scholars mentioned that Athens lacked focus on tourism services (Hu and Singh, 2008). These negative views were also held by the OIC; therefore, Greece had to solve the problems primarily (Hu and Singh, 2008). The Greek National Tourism Organization (GNTO) and the Ministry of Tourism were the main players in tourism planning (Hu and Singh, 2008). One task of GNTO was to prepare Athens to offer upgraded hotels and other tourist facilities and to develop a strong strategy for tourism marketing for the Olympic Games (Hu and Singh, 2008).

Greece invested unprecedented capital in the Athens 2004 Olympic Games, and the effects of the Athens 2004 Olympic Games were significant. The effects can be observed from the improved tourism infrastructure and hotel accommodations (“Factsheet: legacies of the Games,” 2013). To achieve the success, Athens renovated thousands of building and removed numerous illegal billboard (“Factsheet: legacies of the Games,” 2013).

2.5.3 Turin 2006 Winter Olympic Games

In 1999, Turin was officially selected as the host city of the 2006 Winter Olympic Games (“Winter Olympics Torino 2006,” 2012). Turin 2006 Winter Olympic Games was a multi-sport event which was the XX Olympic Winter Games, and it was the second occasion for Italy to host the Olympic Games (“Winter Olympics Torino 2006,” 2012).

Turin welcomed a record number of athletes and countries. In the Turin 2006 Winter Olympic Games, it had a population of more than 900,000, and this number showed that Turin was the largest city to host the Winter Olympic Games (“Turin 2006,” 2013). Moreover, 2,508 athletes from 80 National Olympic Committees (NOCs) took part in the Turin 2006 winter Olympic Games and competed in 84 events (“Turin 2006,” 2013). There were 9,408 international media focusing on the Games which included 2,688 written press and 6,720 broadcasters, in addition to 18,000 volunteers (“Turin 2006,” 2013). The featured medal events were held in over 15 winter sports (“Winter Olympics Torino 2006,” 2012).

Italy spent 4.1 billion dollars on the Turin 2006 Winter Olympic Games, and there were 1.5 million spectators who attended the Games (Kiesnoski, 2007). The city tourism board Turismo Torino said that the population visiting and traveling to Turin after the Olympic Games would continue through 2008 (Kiesnoski, 2007). The number of leisure traveler increased tremendously. There was an extra 3 percent growth in 2005, and the city tourism board predicted that there would be another 4 percent growth in 2006, 2 percent in

2007, and 1 percent in 2008 (Kiesnoski, 2007). Furthermore, there are more impressive differences if the long-term Olympic Games impact is considered. It was expected that the number of visitors would have grown by 50 percent from 2001 to 2010, specifically the number was from 800,000 to 1.2 million in each year, and it increased 11 percent compared to the time from 1990 to 2001 (Kiesnoski, 2007). Therefore, the Turin 2006 Winter Olympic Games significantly impacted the tourism growth.

Turin made huge efforts to improve the entire status of the city before it held the worldwide event. Turin focused on the infrastructure improvements, such as improving road and rail links, Turin's airport, telecommunications systems ("Factsheet: legacies of the Games," 2013). The Olympic Games greatly impacted to the city of Turin and push the city to change significantly. Before the Olympic Games, people knew Turin as a city that concentrated on manufacturing; therefore, it was not easy for Turin to portray completely different image to visitors in a short time, especially making the city a tourism destination (Boucher, 2007). Because of the Olympic Games, Turin paid much attention to regenerate the urban areas (Boucher, 2007). For example, Turin government recovered 500 acres of abandoned industrial land, enlarged the underground of Turin, and focused on developing the extensive Porta Palazzo market; moreover, new railway stations were constructed (Boucher, 2007).

2.5.4 Vancouver 2010 Winter Olympic Games

In 2003, the International Olympic Committee (IOC) Executive Board announced that the city of Vancouver, Canada had been selected to be the city that would host the XXI Olympic Winter Games in 2010 (“Vancouver 2010,” 2013). Other cities had competed to host the Games, such as Andorra La Vella (Andorra), Bern (Switzerland), Harbin (China), Jaca (Spain), PyeongChang (Republic of Korea), Salzburg (Austria), Sarajevo (Bosnia-Herzegovina) (“Vancouver 2010,” 2013). The number of athletes who took part in the Vancouver 2010 Winter Olympic Games was approximately 2,600 from 82 countries; moreover, there were 10,000 media representatives and 3 billion television viewers worldwide (“Vancouver 2010,” 2013). The Vancouver 2010 Winter Olympic Games was the third Olympic Games that Canada had held (“Vancouver 2010,” 2013).

Vancouver has more than 2.3 million people, and the area is approximately 2,900 square kilometers (“Economic profile,” 2012). Vancouver, the cultural centre of British Columbia, has a strong economic foundation, and Vancouver and 21 other municipalities are consist of almost half of British Columbia’s population and economic output (“Economic profile,” 2012). The resort town of Whistler was the place officially prepared for the Host Mountain Resort for the Vancouver 2010 Winter Olympic Games (“Tourism sector monitor”, 2010). Whistler hosted more than 28,000 people during the Olympic Games which was much more than its permanent population of 10,228 (“Tourism sector monitor”, 2010). According to the Conference Board of Canada, the Games contributed to the Vancouver economy

tremendously (“Factsheet: legacies of the Games,” 2013). It generated CAD 600 million and created 0.8 percent economy growth (“Factsheet: legacies of the Games,” 2013).

Vancouver 2010 Winter Olympic Games attracted numerous international travelers and became the main travel destination after the Games. In 2009, however, Canadian inbound tourism was affected negatively by the global economic downturn (“Tourism sector monitor”, 2010). There were expanded short-term outcome of accommodations even though the economic downtown had negative impact on the Games (“Tourism sector monitor”, 2010). Moreover, Vancouver invested a large amount of capital in upgrading the public transit, the Vancouver International Airport, and the twinning of the ‘Sea to Sky’ highway between Vancouver and Whistler (Meletis, Silver and Vadi, 2012).

Vancouver 2010 Winter Olympic Games was highly praised by the International Olympic Committee (IOC), and the president of IOC described the Vancouver 2010 Winter Olympic Games was extremely successful because the city was unique and provided a great environment for the Olympic Games (“Vancouver 2010,” 2013). Even though the Olympic Games had finished, many travelers continued to visit Vancouver.

2.6 Summary

Studies related to the Olympic Games have received tremendous attention by researchers. The analyzed and discussed points depend on the researchers' interests and readers' demands. The attention to the Olympic Games has increased continuously even though the areas of concentration are different. However, researchers have shown continuous interest in the economic impact of the Olympic Games on the host city. The economic impact can be observed in various sectors of the host area, such as increased job positions, local business opportunities, and international investment. The host city's tourism market also has the opportunity to be improved. Increased tourism naturally generates a quick development of the host city's lodging market. Numerous researchers have begun to focus on the relationship between the tourism industry and the Olympic Games. Moreover, many studies regarding the hotel industry and the Olympic Games have been published recently. They use different methodologies to present their points and demonstrate the importance of their studies. All the studies have a significant role in supporting and enlightening further research. This study is also inspired by previous studies and concentrates on one specific sector: the host city's lodging market and the Olympic Games.

Based on the previous studies, this research begins to present the methodology that is necessary to obtain the findings. The findings and results may be varied if different methodologies are utilized. Moreover, researchers' different concentrations may need to use

different methodologies. The methodology of this study is sufficiently utilized to observe the impact of the Olympic Games on the host city's lodging market.

Chapter 3

METHODOLOGY

The methodology of this paper is used to identify the impact of the Olympic Games on the host city's hotel performance. To determine the change of the hotel performance, the data sets of six important metrics defining the hotel performance are analyzed in this study. Data sets of the selected host city's lodging market were obtained from Smith Travel Research Global. Data sets of six metrics defining the hotel performances used for the current analysis include the supply, demand, occupancy rate (Occ), average daily rate (ADR), revenue and revenue for per available room (RevPAR). Additionally, to evaluate how the Olympic Games, such a mega event, impacts the host city's hotel performance, it is necessary to analyze the change of the supply, demand, Occ, ADR, revenue and RevPAR before, during and after the Olympic Games. The degree of change can sufficiently depict the impact that each city's lodging market experienced as a result of the Olympic Games. Therefore, explaining the six metrics that determine the hotel performance during a time period is significant.

3.1 Supply

The definition of supply is frequently used by different industries. In general, the supply means the total amount that a specific product or service is available in a certain time period. Similarly, the supply in the hotel industry describes the total number of hotel rooms that are provided in an area during a period of time. The supply of hotel rooms varies by different period. Hotels increase the total supply when a significant event is hosted in the area, such as the Olympic Games. These events easily generate a high volume of visitors coming to the place.

3.2 Demand

Demand means the total amount of product or service that is required from the market during a certain period of time. Demand is often discussed in relation to the supply. In the hotel industry, the demand means the total number of hotel rooms which the market in an area actually needs during a period of time. When a massive event is hosted in an area, the demand of hotel rooms is increased because of the rapid increase of the visitors.

3.3 Occupancy Rate

The occupancy rate, referred to Occ, is an important concept to evaluate the hotel performance. This crucial metric is determined by the supply and demand of hotel rooms. The occupancy rate can be interpreted as the total number of hotel rooms sold in a period divided by the total number of hotel rooms available in the same period, and the result is shown as a percent. Occ is used widely because hotel operators and investors can easily observe what percent of total hotel rooms is sold in a period time.

3.4 ADR

The ADR, which stands for average daily rate is another important concept in the hotel industry that measures the average amount paid by per occupied room (Mandelbaum, 2011). The ADR is related to the total room revenue that has been generated in a period and the total number of rooms that has been occupied in the same period of time. Therefore, the ADR can be calculated as the total room revenue in a period divided by the total number of rooms occupied in the same period.

The room rate in a hotel varies depending on several factors, such as the room quality, the time booking the rooms, and hotel promotions. The ADR represents the average room rate for all occupied rooms during a period. According to the number of

ADR, hotel operators and investors can obtain an average room cost in a specified period. However, the result of ADR is not adequate to evaluate the comprehensive hotel performance.

3.5 RevPAR

The RevPAR refers to the revenue for per available room. It is a unique concept for the hotel industry that determines the hotel performance in a comprehensive way. To calculate the RevPAR, both ADR and Occ are required. The RevPAR can be generated by multiplying the number of Occ by the number of ADR. Also, it can be explained by dividing the total room revenue in a period by the total number of available rooms in a period.

The RevPAR measures how hotels fill up their rooms while keeping the average daily rates at a profitable level, a practice thought to be the most efficient way to gauge the health of a hotel's financial situation (Ismail, Dalbor, and Mills, 2002). To achieve a higher RevPAR, hotels make efforts to reach the highest percent of occupied rooms and the highest ADR by keeping the rates acceptable to maximize the revenue. Moreover, RevPAR is a scientific resource that can represent whether a hotel has successfully filled its rooms. Hence, the RevPAR, Occ and ADR can be analyzed together to evaluate the health of a hotel in the market.

3.6 Revenue

The revenue in the hotel industry represents the total income generated from the hotel rooms that have been sold in a period. It can be calculated by adding all room rates that have been sold in a given period of time. Several factors affect the change of the revenue. Maximizing revenue has long been a problem and goal for hotels in the lodging market.

3.7 Percent of Change

The percent of change plays a significant role in this study. To identify the change in the six metrics, presenting the result as percent is the most effective method. In this study, it is used to describe the difference between metrics from year to year. The percent of change is calculated by dividing the difference between two years by the number of the previous year. The difference is gathered by year; therefore, the percent of change is interpreted as what percent a metric of the current year has increased or decreased compared to the previous year.

Moreover, the percent of change is an important value that shows the relationship between the hotel performance of the Olympic year as well as those leading

up to and following the event. In addition, the percent of change is critical number that can describe the impact of the Olympic Games on the host city's lodging market.

Chapter 4

RESULTS

This chapter will display the results from the analyzed metrics. Sydney 2000 Summer Olympic Games, Athens 2004 Summer Olympic Games, Turin 2006 Olympic Games, and Vancouver 2010 Olympic Games are selected and discussed in this chapter. The Games are analyzed chronologically, beginning with the earliest and ending with the most recent. For each city, the data sets of six metrics were collected for four years before and two years after the Olympic Games. The order of analyzing the six metrics is the supply, demand, Occ, ADR, revenue and RevPAR. Both the exact number and the percent of change will be presented for each metric in a host city.

Moreover, the data sets of two Summer Olympic Games host cities and two Winter Olympic Games host cities will be compared. Finally, the data sets of four Olympic Games host cities will be analyzed collectively.

4.1 Sydney 2000 Summer Olympic Games

4.1.1 Sydney, Australia Summer Olympic Games Supply (1996-2002)

Table 1 shows the supply performance in Sydney for the six years. The number of supply in Sydney increases at a slight rate each year from 1996 to 2002. The movement shows an upturn trend until 2001, one year after the Games. The supply in 2001 peaks over 14 million rooms, but it decreases in 2002. To welcome the Olympic Games, Sydney adds total 1,531,496 hotel rooms during the six years. Moreover, the total percent of change in supply from 1996 to 2002 is 11.7 percent. In other words, the lodging market of Sydney gains 11.7 percent more hotel rooms from 1996 to 2002. However, the supply begins to decrease in 2002, two years after the Olympic Games.

Table 1 Supply of Hotel Rooms in Sydney, Australia (1996-2002)

Sydney	Supply	Percent of Change (%)
Year – 4 (1996)	12,447,258	--
Year – 3 (1997)	12,562,360	0.9
Year – 2 (1998)	12,851,511	2.3
Year – 1 (1999)	13,280,788	3.3
Olympic Year (2000)	13,774,858	3.7
Year + 1 (2001)	14,006,004	1.7
Year + 2 (2002)	13,978,754	-0.2
Total Change in Supply	1,531,496	11.7

4.1.2 Sydney, Australia Summer Olympic Games Demand (1996-2002)

Table 2 collects the data sets of the demand for the years from 1996 to 2002.

During the six years, the total demand of hotel rooms changed by 128,847. This means that 128,847 more hotel rooms are required from the lodging market in Sydney primarily because of the Games. The movement of the demand during the six years does not show a continuous increase. Comparing the supply with the demand, it is easy to find that the supply increases each year, but the demand decreases until one year before the Olympic Games. The demand suddenly increases in 1999, one year before the Olympic Games. Also, the rapid increase appears in 2002, two years after the Olympic Games. The total percent of change in the demand during the six years is 1.8 percent which is much lower than the total percent of change in the supply.

Table 2 Demand of Hotel Rooms in Sydney, Australia (1996-2002)

Sydney	Demand	Percent of Change (%)
Year – 4 (1996)	9,750,738	--
Year – 3 (1997)	9,685,537	-0.7
Year – 2 (1998)	9,469,528	-2.2
Year – 1 (1999)	9,991,275	5.5
Olympic Year (2000)	9,864,820	-1.3
Year + 1 (2001)	9,266,380	-6.1
Year + 2 (2002)	9,879,585	6.6
Total Change in Demand	128,847	1.8

4.1.3 Sydney, Australia Summer Olympic Games Occupancy (1996-2002)

Table 3 presents the occupancy performance from 1996 to 2002 in the Sydney Olympic Games. The occupancy rate decreases each year during the six years except in 1999 and 2002, one year before and two years after the Olympic Games. The average occupancy rate is 73.3 percent. The occupancy rate in the Olympic year is even 4.8 percent lower than the previous year. However, compared to the other three host cities, the occupancy rate of Sydney during the six years is relatively higher than that of the other three host cities. The performances of the occupancy and demand are consistent.

Table 3 Occupancy Rate of Hotel Rooms in Sydney, Australia (1996-2002)

Sydney	Occ (%)	Percent of Change (%)
Year – 4 (1996)	78.3	--
Year – 3 (1997)	77.1	-1.6
Year – 2 (1998)	73.7	-4.4
Year – 1 (1999)	75.2	2.1
Olympic Year (2000)	71.6	-4.8
Year + 1 (2001)	66.2	-7.6
Year + 2 (2002)	70.7	6.8
Avg	73.3	-1.6

4.1.4 Sydney, Australia Summer Olympic Games ADR (1996-2002)

Table 4 collects the data sets of ADR in Sydney from 1996 to 2002. According to the performance of the percent of change, the ADR decreases each year from 1996 to 2001. It becomes extremely low in 1998 and 2001, and the lowest ADR is 77.61 dollars in 2001, one year after the Olympic Games. In the Olympic year, the ADR even decreases 0.6 percent than the previous year. The average ADR during the six years is 104.24 dollars, and the average percent of change is negative 6.7 percent. To summarize, the ADR of Sydney decreases in the first five years and increases significantly in 2002, two years after the Games.

Table 4 ADR of Hotel Rooms in Sydney, Australia (1996-2002)

Sydney	ADR (\$)	Percent of Change (%)
Year – 4 (1996)	132.01	--
Year – 3 (1997)	131.60	-0.3
Year – 2 (1998)	103.88	-21.1
Year – 1 (1999)	103.16	-0.7
Olympic Year (2000)	102.54	-0.6
Year + 1 (2001)	77.61	-24.3
Year + 2 (2002)	78.88	1.6
Avg	104.24	-6.7

4.1.5 Sydney, Australia Summer Olympic Games RevPAR (1996-2002)

Table 5 presents the RevPAR performance from 1996 to 2002. The RevPAR decreases in 1997 and 1998, and the decrease in 1998 reaches to almost 25 percent. The RevPAR of the Olympic year is 73.44 dollars which decreases 5.4 percent than the previous year. The RevPAR drops significantly in 2001, one year after the Games. During the six year time period, the RevPAR begins to increase in 1999, one year before the Olympic Games, but it decreases in the Olympic year and one year after the Games. Because of the several large decreases during the six year period, the average RevPAR is negative 8.7 percent.

Table 5 RevPAR of Hotel Rooms in Sydney, Australia (1996-2002)

Sydney	RevPAR (\$)	Percent of Change (%)
Year – 4 (1996)	103.41	--
Year – 3 (1997)	101.46	-1.9
Year – 2 (1998)	76.54	-24.6
Year – 1 (1999)	77.61	1.4
Olympic Year (2000)	73.44	-5.4
Year + 1 (2001)	51.34	-30.1
Year + 2 (2002)	55.75	8.6
Avg	77.08	-8.7

4.1.6 Sydney, Australia Summer Olympic Games Revenue (1996-2002)

Table 6 shows the revenue performance in the six years. It is easy to observe that there are apparent ups and downs in revenue during the six year period. Specifically, the revenue decreases tremendously in 1998 and 2001. The decrease is 22.8 percent in 1998 and 28.9 percent in 2001. The revenue of Sydney during the six years only increases in 1999 and 2002, one year before and two years after the Games. Especially, the increase in 2002 is significant, and the revenue in this year raises 8.4 percent. The average percent of change in revenue during the six years is negative 7.1 percent. Therefore, it fails to display a clear increase of revenue in Sydney within the six years.

Table 6 Revenue of Hotel Rooms in Sydney, Australia (1996-2002)

Sydney	Revenue (\$)	Percent of Change (%)
Year – 4 (1996)	1,287,176,216	--
Year – 3 (1997)	1,274,590,253	-1.0
Year – 2 (1998)	983,663,971	-22.8
Year – 1 (1999)	1,030,720,032	4.8
Olympic Year (2000)	1,011,567,307	-1.9
Year + 1 (2001)	719,136,710	-28.9
Year + 2 (2002)	779,304,107	8.4
Avg	1,012,308,371	-7.1

4.2 Athens 2004 Summer Olympic Games

4.2.1 Athens, Greece Summer Olympic Games Supply (2000-2006)

Table 7 presents the data sets of the supply in Athens from 2000 to 2006. Athens shows a clear increase of 114,975 hotel rooms within the six years, and the total percent of change is 2.0 percent. The supply decreases in 2001 and 2002. However, the lodging market in Athens continues to increase the supply of rooms from 2003, one year before the Olympic Games, and the increase continues until 2006, two years after the Olympic Games. Among the six year period, Athens does not increase the supply significantly. In the Olympic year, Athens only has increase of 2.9 percent.

Table 7 Supply of Hotel Rooms in Athens, Greece (2000-2006)

Athens	Supply	Percent of Change (%)
Year – 4 (2000)	6,155,360	--
Year – 3 (2001)	6,116,443	-0.6
Year – 2 (2002)	5,859,534	-4.2
Year – 1 (2003)	6,048,954	3.2
Olympic Year (2004)	6,226,423	2.9
Year + 1 (2005)	6,270,335	0.7
Year + 2 (2006)	6,270,335	0.0
Total Change in Supply	114,975	2.0

4.2.2 Athens, Greece Summer Olympic Games Demand (2000-2006)

Table 8 shows the demand of the lodging market in Athens during the six years. The demand decreases continuously during four years before the Olympic Games, but it increases significantly in the Olympic year. The percent of change increases from negative 9.6 to positive 9.6 in the Olympic year. Moreover, the demand grows continuously after the Olympic year even though the increase is not significant. It is clear that the demand in 2004 is the highest number among the six years. Although the supply increases during the six year period in Athens, the demand decreases because the total percent of change in demand is negative 0.8 percent during the same period.

Table 8 Demand of Hotel Rooms in Athens, Greece (2000-2006)

Athens	Demand	Percent of Change (%)
Year – 4 (2000)	4,306,015	--
Year – 3 (2001)	3,890,732	-9.6
Year – 2 (2002)	3,817,154	-1.9
Year – 1 (2003)	3,450,114	-9.6
Olympic Year (2004)	3,781,320	9.6
Year + 1 (2005)	3,883,541	2.7
Year + 2 (2006)	4,196,070	8.0
Total Change in Demand	-109,945	-0.8

4.2.3 Athens, Greece Summer Olympic Games Occupancy (2000-2006)

Table 9 presents the occupancy rate of Athens from 2000 to 2006. The occupancy rate drops continuously before the Olympic Games. Specifically, there is rapid drop in 2003, one year before the Olympic Games. It falls from positive 2.4 percent to negative 12.4 percent. However, the performance begins to improve during the Olympic year. The occupancy rate increases 6.5 percent in the Olympic year. Although the increase after the Olympic Games is not as significant as the Olympic year, it still remains a positive percent of change. The average occupancy rate in Athens is 63.7 percent, and the average percent of change for the six years is negative 1.5 percent.

Table 9 Occupancy Rate of Hotel Rooms in Athens, Greece (2000-2006)

Athens	Occ (%)	Percent of Change (%)
Year – 4 (2000)	70.0	--
Year – 3 (2001)	63.6	-9.1
Year – 2 (2002)	66.1	2.4
Year – 1 (2003)	57	-12.4
Olympic Year (2004)	60.7	6.5
Year + 1 (2005)	61.9	2.0
Year + 2 (2006)	66.9	8.0
Avg	63.7	-1.5

4.2.4 Athens, Greece Summer Olympic Games ADR (2000-2006)

Table 10 is the data sets of the ADR in Athens during the six years. The ADR increases in most years during the six year period except in 2005. The percent of change of ADR in the Olympic year is most significant because it increases 42.3 percent than that of the previous year. The ADR in the Olympic year is 205.33 dollars which is much higher than the six year average. Comparing with this enormous increase, the average percent of change is only 8.8 percent during the six years, primarily bordered by the sudden decrease in 2005, one year after the Olympic Games. The city experiences a dramatic 22.1 percent decrease in 2005.

Table 10 ADR of Hotel Rooms in Athens, Greece (2000-2006)

Athens	ADR (\$)	Percent of Change (%)
Year – 4 (2000)	108.15	--
Year – 3 (2001)	108.16	0.0
Year – 2 (2002)	120.11	11.0
Year – 1 (2003)	144.29	20.1
Olympic Year (2004)	205.33	42.3
Year + 1 (2005)	159.88	-22.1
Year + 2 (2006)	162.00	1.3
Avg	144.00	8.8

4.2.5 Athens, Greece Summer Olympic Games RevPAR (2000-2006)

Table 11 displays the RevPAR performance in Athens from 2000 to 2006. The RevPAR rises each year from 2002 to 2004, and the greatest RevPAR is in the Olympic year at 124.70 dollars. The RevPAR in the Olympic year is 51.5 percent more than the number of previous year. Moreover, both the RevPAR and the percent of change in the Olympic year exceed the average RevPAR and the average percent of change. However, the RevPAR has sharp decrease in 2005, one year after the Olympic Games. For the RevPAR of the six years surrounding the Athens 2004 Summer Olympic Games, the movement shows a similar route with the ADR.

Table 11 RevPAR of Hotel Rooms in Athens, Greece (2000-2006)

Athens	RevPAR (\$)	Percent of Change (%)
Year – 4 (2000)	75.65	--
Year – 3 (2001)	68.80	-9.1
Year – 2 (2002)	78.24	13.7
Year – 1 (2003)	82.30	5.2
Olympic Year (2004)	124.70	51.5
Year + 1 (2005)	99.02	-20.6
Year + 2 (2006)	108.41	9.5
Avg	91.02	5.8

4.2.6 Athens, Greece Summer Olympic Games Revenue (2000-2006)

Table 12 collects the data sets of the revenue in Athens for the six years. . The revenue increases from 2002 to 2004, two years before and two years after the Games. During the six years, the revenue in the Olympic year reaches to the summit. The revenue in the Olympic year in Athens is 776,433,806 dollars. Compared with the revenue in the previous year, the revenue in the Olympic year is 56 percent greater. Nevertheless, there is sharp decrease in 2005, the year following the Games. The revenue drops from the positive 56 percent in the Olympic year to the negative 20 percent in the year following the Games. Even though there is a rapid fluctuation, the average percent of change of the revenue in Athens is positive 6.3 percent, and the revenue of Olympic year and the following two years are all exceed the average revenue of the six year period.

Table 12 Revenue of Hotel Rooms in Athens, Greece (2000-2006)

Athens	Revenue (\$)	Percent of Change (%)
Year – 4 (2000)	465,679,591	--
Year – 3 (2001)	420,837,418	-9.6
Year – 2 (2002)	458,461,738	8.9
Year – 1 (2003)	497,808,043	8.6
Olympic Year (2004)	776,433,806	56.0
Year + 1 (2005)	620,884,432	-20.0
Year + 2 (2006)	679,771,144	9.5
Avg	559,982,310	6.3

4.3 Turin 2006 Winter Olympic Games

4.3.1 Turin, Italy Winter Olympic Games Supply (2002-2008)

Table 13 shows data sets of the supply from 2002 to 2008 in Turin. Turin increases the supply each year during the six year period, and there is no negative percent of change. The growth of each year is slight, but the supply surges tremendously in the Olympic year which is 7.6 percent more than that of the previous year. In 2007, one year after the Games, this increase of the supply is not as significant as the Olympic year. Turin increases the total of 295,714 more hotel rooms during the six years, and the total percent of change of the supply is 15 percent.

Table 13 Supply of Hotel Rooms in Turin, Italy (2002-2008)

Turin	Supply	Percent of Change (%)
Year – 4 (2002)	1,866,911	--
Year – 3 (2003)	1,895,075	1.5
Year – 2 (2004)	1,933,841	2.0
Year – 1 (2005)	1,946,576	0.7
Olympic Year (2006)	2,095,319	7.6
Year + 1 (2007)	2,154,341	2.8
Year + 2 (2008)	2,162,625	0.4
Total Change in Supply	295,714	15.0

4.3.2 Turin, Italy Winter Olympic Games Demand (2002-2008)

Table 14 depicts the data sets of the demand in Turin from 2002 to 2008.

Corresponding to the increase of the supply, the demand in Turin during the same time period follows a similar path. The demand increases each year except in 2003 and 2007, three years before and one year after the Olympic Games. There is incredible increase of the demand in the Olympic year. In terms of percent of change, more than 13 percent increase is created in the Olympic year compared with the previous year. However, the demand decreases to negative 3.3 percent in 2007, one year after the Olympic Games. The total changed number in demand during the six years is 209,761, and the total percent of change is 19.4 percent. Therefore, the data shows that the overall demand in Turin during the six year period increases significantly.

Table 14 Demand of Hotel Rooms in Turin, Italy (2002-2008)

Turin	Demand	Percent of Change (%)
Year – 4 (2002)	1,044,195	--
Year – 3 (2003)	1,041,679	-0.2
Year – 2 (2004)	1,077,139	3.4
Year – 1 (2005)	1,088,870	1.1
Olympic Year (2006)	1,230,977	13.1
Year + 1 (2007)	1,190,822	-3.3
Year + 2 (2008)	1,253,956	5.3
Total Change in Demand	209,761	19.4

4.3.3 Turin, Italy Winter Olympic Games Occupancy (2002-2008)

Table 15 shows the occupancy performance in Turin from 2002 to 2009. The average occupancy rate is 56.4 percent, and the average percent of change is positive 0.6 percent. Although the occupancy rate in 2003 and 2007 decreases than the previous year, the occupancy rate in all the other years during the six year period grows each year. In the Olympic year, because of the stimulus of the Olympic Games, the occupancy rate of Turin in 2006 is surprisingly high. To summarize, the occupancy rate of the six years in Turin has a slight increase each year except the decrease in 2003 and 2007.

Table 15 Occupancy Rate of Hotel Rooms in Turin, Italy (2002-2008)

Turin	Occ (%)	Percent of Change (%)
Year – 4 (2002)	55.9	--
Year – 3 (2003)	55.0	-1.7
Year – 2 (2004)	55.7	1.3
Year – 1 (2005)	55.9	0.4
Olympic Year (2006)	58.7	5.0
Year + 1 (2007)	55.3	-5.9
Year + 2 (2008)	58.0	4.9
Avg	56.4	0.6

4.3.4 Turin, Italy Winter Olympic Games ADR (2002-2008)

Table 16 displays the data sets of the ADR from 2002 to 2008 in Turin. The ADR increases in 2003 and 2004, but it decreases in 2005, one year before the Games. In the Olympic year, the ADR is 131.06 dollars and increases 10.2 percent than the previous year. The ADR of the Olympic year is approximately 20 dollars more than the average ADR of the six years. However, there is a tremendous drop in 2007, one year after the Olympic Games. The ADR in this year decreases approximately 10 percent than the Olympic year, but it increases dramatically once again in 2008, two years after the Olympic Games.

Table 16 ADR of Hotel Rooms in Turin, Italy (2002-2008)

Turin	ADR (\$)	Percent of Change (%)
Year – 4 (2002)	94.77	--
Year – 3 (2003)	109.49	15.5
Year – 2 (2004)	120.37	9.9
Year – 1 (2005)	118.89	-1.2
Olympic Year (2006)	131.06	10.2
Year + 1 (2007)	117.65	-10.2
Year + 2 (2008)	134.56	14.4
Avg	118.11	5.5

4.3.5 Turin, Italy Winter Olympic Games RevPAR (2002-2008)

Table 17 presents the data sets of the RevPAR from 2002 to 2008 in Turin. The RevPAR increases in 2003 and 2004, but it decreases slightly in 2005, one year before the Olympic Games. The RevPAR in the Olympic year, however, reaches to 76.99 dollars which is 15.8 percent more than one year before. Nevertheless, it falls in 2007 to 65.03 dollars which is 15.5 percent less than the Olympic year. Because the RevPAR of the Olympic year is much greater than the RevPAR of any other years, the average RevPAR in the six years of Turin is 66.68 dollars, and the average percent of change is positive 6.3 percent.

Table 17 RevePAR of Hotel Rooms in Turin, Italy (2002-2008)

Turin	RevPAR (\$)	Percent of Change (%)
Year – 4 (2002)	53.01	--
Year – 3 (2003)	60.18	13.5
Year – 2 (2004)	67.04	11.4
Year – 1 (2005)	66.50	-0.8
Olympic Year (2006)	76.99	15.8
Year + 1 (2007)	65.03	-15.5
Year + 2 (2008)	78.02	20.0
Avg	66.68	6.3

4.3.6 Turin, Italy Winter Olympic Games Revenue (2002-2008)

Table 18 collects the data sets of the revenue for the six years in Turin. The revenue increases every year from 2003, but there is minor decrease in 2005, one year before the Olympic year. When the city hosts the Olympic Games, the revenue is 161,328,035 dollars, approximately 25 percent more than that of the previous year. After this dramatic increase, the revenue decreases tremendously in the year following the Olympic Games. The average percent of change in Athens is positive 8.6 percent; therefore, the revenue during the six year period in Turin stays in a positive number even though there is an observable decrease in 2005 and 2007.

Table 18 Revenue of Hotel Rooms in Turin, Italy (2002-2008)

Turin	Revenue (\$)	Percent of Change (%)
Year – 4 (2002)	98,963,094	--
Year – 3 (2003)	114,048,387	15.2
Year – 2 (2004)	129,651,239	13.7
Year – 1 (2005)	129,451,693	-0.2
Olympic Year (2006)	161,328,035	24.6
Year + 1 (2007)	140,101,865	-13.2
Year + 2 (2008)	168,735,623	20.4
Avg	134,611,419	8.6

4.4 Vancouver 2010 Winter Olympic Games

4.4.1 Vancouver, Canada Winter Olympic Games Supply (2006-2012)

Table 19 shows the data sets of the supply in Vancouver from 2006 to 2012. The supply of Vancouver does not fluctuate dramatically. The change of the supply each year during the six year period is slight. Vancouver increases the supply slowly each year during the time period except in 2007, one year after the Games, but the decrease is not significant. The increase of supply in the Olympic year is highest. The total changed number in supply is 687,252, and the total percent of change is 7.5 percent. Therefore, Vancouver increases the number of hotel rooms by 7.5 percent during the six years.

Table 19 Supply of Hotel Rooms in Vancouver, Canada (2006-2012)

Vancouver	Supply	Percent of Change (%)
Year – 4 (2006)	8,932,083	--
Year – 3 (2007)	8,941,292	0.1
Year – 2 (2008)	9,147,015	2.3
Year – 1 (2009)	9,222,791	0.8
Olympic Year (2010)	9,582,676	3.9
Year + 1 (2011)	9,553,593	-0.3
Year + 2 (2012)	9,619,335	0.7
Total Change in Supply	687,252	7.5

4.4.2 Vancouver, Canada Winter Olympic Games Demand (2006-2012)

Table 20 collects the data sets of the demand in Vancouver from 2006 to 2012.

The demand decreases in two consecutive years before the Olympic Games. Especially, the decrease in the one year before the Olympic Games is significant. However, the Olympic year brings a dramatic increase of almost 10 percent more than the previous year. Unfortunately, there is another 2.7 percent decrease after the Olympic year. The demand rises again in 2012, two years after the Olympic Games. Compared with the supply, the demand is fluctuant. The overall demand increases by 13,790 which is a total of 1.1 percent increase during the six years.

Table 20 Demand of Hotel Rooms in Vancouver, Canada (2006-2012)

Vancouver	Demand	Percent of Change (%)
Year – 4 (2006)	6,388,770	--
Year – 3 (2007)	6,528,394	2.2
Year – 2 (2008)	6,409,332	-1.8
Year – 1 (2009)	5,922,070	-7.6
Olympic Year (2010)	6,502,212	9.8
Year + 1 (2011)	6,324,551	-2.7
Year + 2 (2012)	6,402,560	1.2
Total Change in Demand	13,790	1.1

4.4.3 Vancouver, Canada Winter Olympic Games Occupancy (2006-2012)

Table 21 displays the occupancy rate from 2006 to 2012 in Vancouver. It shows a slight increase in 2007, three years before the Olympic Games, but there is an apparent decrease in 2009, one year before the Olympic Games. In 2009, the occupancy rate drops 8.4 percent in comparison with the previous year. The occupancy rate increases in the Olympic year, but the increase is not as significant as the decrease of the previous year. Additionally, the occupancy rate falls again in 2011, following the Olympic year. The average occupancy rate is 68.5 percent, and the average percent of change is 1 percent during the six year period. The highest occupancy rate does not appear in the Olympic year, but it is even lower than that of 2006, 2007, and 2008.

Table 21 Occupancy Rate of Hotel Rooms in Vancouver, Canada (2006-2012)

Vancouver	Occ (%)	Percent of Change (%)
Year – 4 (2006)	71.5	--
Year – 3 (2007)	73.0	2.1
Year – 2 (2008)	70.1	-4.0
Year – 1 (2009)	64.2	-8.4
Olympic Year (2010)	67.9	6.7
Year + 1 (2011)	66.2	-2.4
Year + 2 (2012)	66.6	0.5
Avg	68.5	1.0

4.4.4 Vancouver, Canada Winter Olympic Games ADR (2006-2012)

Table 22 displays the data sets of the ADR from 2006 to 2012 in Vancouver.

The ADR increases in 2007 and 2008, but it decreases tremendously in 2009, one year before the Olympic Games. As expected, the ADR increases largely in the Olympic year. The ADR in the Olympic year is 145.10 dollars, and it is 21.2 percent higher than the previous year. However, there is immediate decrease in 2011, one year after the Olympic Games. The drop is not substantial, but it continues into 2012. Even though the performance of the ADR during the six year period is fluctuant, the average percent of change of the ADR in Vancouver is positive

Table 22 ADR of Hotel Rooms in Vancouver, Canada (2006-2012)

Vancouver	ADR (\$)	Percent of Change (%)
Year – 4 (2006)	116.91	--
Year – 3 (2007)	131.09	12.1
Year – 2 (2008)	137.28	4.7
Year – 1 (2009)	119.76	-12.8
Olympic Year (2010)	145.10	21.2
Year + 1 (2011)	142.77	-1.6
Year + 2 (2012)	138.09	-3.3
Avg	133.00	3.4

4.4.5 Vancouver, Canada Winter Olympic Games RevPAR (2006-2012)

Table 23 shows the data sets of the RevPAR in Vancouver from 2006 to 2012. In the three years leading up to the Olympic Games, Vancouver experiences a massive growth in RevPAR. The RevPAR increases 14.5 percent in 2007 than the previous year. However, it suddenly drops in 2009, one year before the Olympic Games, by approximately 20 percent. Accordingly, the RevPAR reaches to 98.45 dollars in the Olympic year, the highest number during the six years. This number is 28 percent more than the previous year. Unfortunately, the RevPAR begins to decrease from 2011, the year following the Olympic Games, and the number decreases continuously. The RevPAR in Vancouver during the six year period does not have a stable trend, but instead experiences radical changes.

Table 23 RevPAR of Hotel Rooms in Vancouver, Canada (2006-2012)

Turin	RevPAR (\$)	Percent of Change (%)
Year – 4 (2006)	83.62	--
Year – 3 (2007)	95.71	14.5
Year – 2 (2008)	96.19	0.5
Year – 1 (2009)	76.90	-20.1
Olympic Year (2010)	98.45	28.0
Year + 1 (2011)	94.52	-4.0
Year + 2 (2012)	91.91	-2.8
Avg	91.04	2.7

4.4.6 Vancouver, Canada Winter Olympic Games Revenue (2006-2012)

Table 24 presents the data sets of the revenue from 2006 to 2012 in Vancouver.

There is a consecutive increase in 2007 and 2008. However, the revenue in 2009, one year before the Olympic Games, has decrease of 19.4 percent than the previous year. The revenue reaches to 934,459,883 dollars in the Olympic year, the highest number during the six years in Vancouver. The percent of change is almost 33 percent compared with the previous year. Nevertheless, the trend becomes to be negative again both in 2011 and 2012. Because of the tremendous increase and decrease during the six year period, the average percent of change in Vancouver is 4.1 percent.

Table 24 Revenue of Hotel Rooms in Vancouver, Canada (2006-2012)

Vancouver	Revenue (\$)	Percent of Change (%)
Year – 4 (2006)	746,910,439	--
Year – 3 (2007)	855,798,780	14.6
Year – 2 (2008)	879,851,664	2.8
Year – 1 (2009)	709,223,065	-19.4
Olympic Year (2010)	934,459,883	33.0
Year + 1 (2011)	902,967,683	-4.3
Year + 2 (2012)	884,156,098	-2.1
Avg	844,766,802	4.1

4.5 Comparison of the Olympic Games Host Cities' Lodging Market

The data sets of the supply, demand, occupancy rate, ADR, RevPAR, and revenue for the Olympic Game host cities, Sydney, Athens, Turin, and Vancouver, are sufficiently analyzed. Each set includes data from four years before the Olympic Games and two years after the Olympic Games. All of the host cities are discussed according to the same time restraints. Not only the specific data of the supply, demand, occupancy, ADR, RevPAR, and revenue of each year has been mentioned, but also the percent of change with each year has been discussed. Moreover, the average of the six metrics and the average percent of change in the six years are analyzed.

After discussing the data sets of each host city, it is necessary to organize these sets into their respective seasons. The two Summer Olympic Games are analyzed in junction with one another, and the two Winter Olympic Games are analyzed together. Finally, all the data sets of the four host cities will be discussed simultaneously and compared with each other.

4.5.1 Comparison of the Summer Olympic Games Host Cities' Lodging Market (Sydney, Australia & Athens, Greece)

Table 25 shows the data sets of the supply, demand, occupancy rate, ADR, RevPAR, and revenue and the percent of change from the two Summer Olympic Games host cities: Sydney and Athens. Compared the data sets of Sydney with those of Athens, both cities increases the total supply within their six year periods. Sydney totals at 11.7 percent increased supply, while Athens only totals at 2.0 percent increased supply. Even though Sydney provides significantly more supply than Athens, the increased demand of Sydney does not correspond with the increased supply. Sydney adds 11.7 percent more hotel rooms during the six years, but the total increased percent of the demand during the same period is only 1.8 percent. Surprisingly, Athens increases 2.0 percent in supply, but the demand even decreases 0.8 percent which is 109,945 decrease of the demand during the six years. The average occupancy rate of Sydney is 73.3 percent, and that of Athens is 63.7 percent; therefore, it represents minor difference in occupancy rate. Moreover, the average percent of change of the occupancy rate during the six years is negative for both cities. The average ADR of Sydney is 104.24 dollars, and it is 144.00 dollars in Athens. The ADR in Sydney is approximately 40 dollars less than the ADR in Athens. The difference is more significant in the revenue. Although the average of percent of change of the revenue in Sydney is negative, the average revenue is still more than the average revenue of Athens. The average RevPAR of Sydney is 77.08 dollars during the six years, and Athens is 91.02 dollars, showing that the average RevPAR of Athens during the six year period is higher than Sydney.

In summation, comparing the two Summer Olympic Games host cities, Sydney has more supply and demand, and higher occupancy rate and revenue, but the ADR and RevPAR of Sydney are lower than those of Athens. The phenomena explains that the number of hotel rooms sold in Sydney was more than the number of hotel rooms sold in Athens; however, one hotel room in Athens has generated more income than one hotel room in Sydney on average.

Table 25 Summer Olympic Games Host Cities – Sydney, Australia & Athens, Greece

	Sydney		Athens	
	Total Changed Rooms	Total Percent of Change (%)	Total Changed Rooms	Total Percent of Change (%)
Supply	1,531,496	11.7	114,975	2.0
Demand	128,847	1.8	-109,945	-0.8
	Average	Average of Percent of Change (%)	Average	Average of Percent of Change (%)
Occ (%)	73.3	-1.6	63.7	-1.5
ADR (\$)	104.24	-6.7	144.00	7.3
RevPAR (\$)	77.08	-8.7	91.02	5.8
Revenue (\$)	1,012,308,371	-7.1	559,982,310	6.3

4.5.2 Comparison of the Winter Olympic Games Host Cities' Lodging Market (Turin, Italy & Vancouver, Canada)

Table 26 presents the data sets of the supply, demand, occupancy rate, ADR, RevPAR, and revenue from the two Winter Olympic Games host cities: Turin and Vancouver. It is apparent that both the total supply and demand in Turin and Vancouver during the six years increase. Specifically, the increase of the supply in Vancouver is much higher than in Turin. The total increased supply in Vancouver is 687,252 which is 391,538 more than the total increased supply in Turin. However, the total increased demand in Vancouver is much lower than that of in Turin. Turin has 209,761 of increased demand during the six years which is 195,971 more demand than Vancouver. The average occupancy rate in Vancouver is 68.51 percent, and the average occupancy rate of Turin is 56.4 percent. Vancouver has higher occupancy rate in the six years. The average ADR in Turin is lower than the average ADR in Vancouver. Moreover, Vancouver has tremendously higher average revenue during the six years. Additionally, the average RevPAR of Vancouver is higher than the average RevPAR of Turin.

In conclusion, Vancouver has the higher numbers in metrics of the supply, occupancy rate, ADR, RevPAR, and revenue than Turin, but Turin has much higher demand than Vancouver. Vancouver has a considerable average occupancy rate that is higher than Turin. This means that Vancouver has a greater number of hotel rooms sold during the six years than Turin. Moreover, Vancouver has generated more revenue, and it also has higher ADR and RevPAR in average. Therefore, Vancouver not only has sold

more hotel rooms during the six years, but also a hotel room in Vancouver has generated more income than Turin.

Table 26 Winter Olympic Games Host Cities – Turin, Italy & Vancouver, Canada

	Turin		Vancouver	
	Total Changed Rooms	Total Percent of Change (%)	Total Changed Rooms	Total Percent of Change (%)
Supply	295,714	15.0	687,252	7.5
Demand	209,761	19.4	13,790	1.1
	Average	Average of Percent of Change (%)	Average	Average of Percent of Change (%)
Occ (%)	56.4	0.6	68.51	1.0
ADR (\$)	118.11	5.5	133.00	3.4
RevPAR (\$)	66.68	6.3	91.04	2.7
Revenue (\$)	134,611,419	8.6	844,766,802	4.1

4.5.3 Comparison of the Olympic Games Host Cities' Lodging Market (Sydney, Australia, Athens, Greece, Turin, Italy & Vancouver, Canada)

Table 27 consolidates all data sets of the Olympic Games host cities: Sydney, Athens, Turin and Vancouver. Comparing the data sets of the four host cities, Sydney has the highest number of the supply, occupancy rate, and revenue. Turin keeps the highest demand; Athens has the highest ADR, and Vancouver shows the highest RevPAR. The supply in Sydney is much higher than that of in the other three host cities, and the differences are considerable between each city. Vancouver has the second highest number of the supply following Sydney, but the difference in the supply and the demand in Sydney and that of Vancouver is massive. Athens displays the lowest number of both the supply and the demand among the four host cities, and the demand even decreases during the six year period. The difference of both the supply and the demand between Sydney and Athens is vast. Additionally, the occupancy rate of Sydney is not as significant as the supply. Vancouver has the second highest number of the occupancy rate, but the difference between Vancouver and Sydney is not significant. Turin has the lowest occupancy rate at 56.4 percent, approximately 20 percent lower than that of in Sydney. Moreover, there is a large disparity in the number of revenue. Comparing the four host cities, Sydney has the highest average revenue, and Turin has the lowest average revenue. The difference of the average revenue between Sydney and Turin is monumentally large. Vancouver has the highest RevPAR, and Sydney has the lowest RevPAR. The RevPAR in Sydney is almost 15 dollars lower than that of in Vancouver.

Table 27 Olympic Games Host Cities – Sydney, Australia, Athens, Greece, Turin, Italy & Vancouver, Canada

	Sydney		Athens		Turin		Vancouver	
	Total Changed Rooms	Total Percent of Change (%)	Total Changed Rooms	Total Percent of Change (%)	Total Changed Rooms	Total Percent of Change (%)	Total Changed Rooms	Total Percent of Change (%)
Supply	1,531,496	11.7	114,975	2.0	295,714	15.0	687,252	7.5
Demand	128,847	1.8	-109,945	-0.8	209,761	19.4	13,790	1.1
	Average	Average Percent of Change (%)	Average	Average Percent of Change (%)	Average	Average Percent of Change (%)	Average	Average Percent of Change (%)
Occ (%)	73.3	-1.6	63.7	-1.5	56.4	0.6	68.51	1.0
ADR (\$)	104.24	-6.7	144.00	7.3	118.11	5.5	133.00	3.4
RevPAR (\$)	77.08	-8.7	91.02	5.8	66.68	6.3	91.04	2.7
Revenue (\$)	1,012,308,371	-7.1	559,982,310	6.3	134,611,419	8.6	844,766,802	4.1

Chapter 5

CONCLUSION AND LIMITATIONS

5.1 Conclusion

The Olympic Games has close relationship with various industries and markets, especially the hotel industry. The Olympic Games is directly related to the large increase in demand observed in the cities which host it. Moreover, the Games draw a sizeable crowd; therefore, it accounts for the influx of visitors. The change of the demand requires hotels to prepare plenty of the supply before the Olympic Games, and the combined change of the supply and demand definitely generates all change of the occupancy rate, ADR, RevPAR, and revenue which are the most important metrics for the hotel industry to evaluate the hotel performance in a period of time.

This study sought to describe the reaction of the host city's lodging market to the Olympic Games in different areas. This reaction is presented by the change of the supply, demand, occupancy, ADR, RevPAR and revenue. The analysis of these changes is used to present the impact of the Olympic Games on the host city's lodging market.

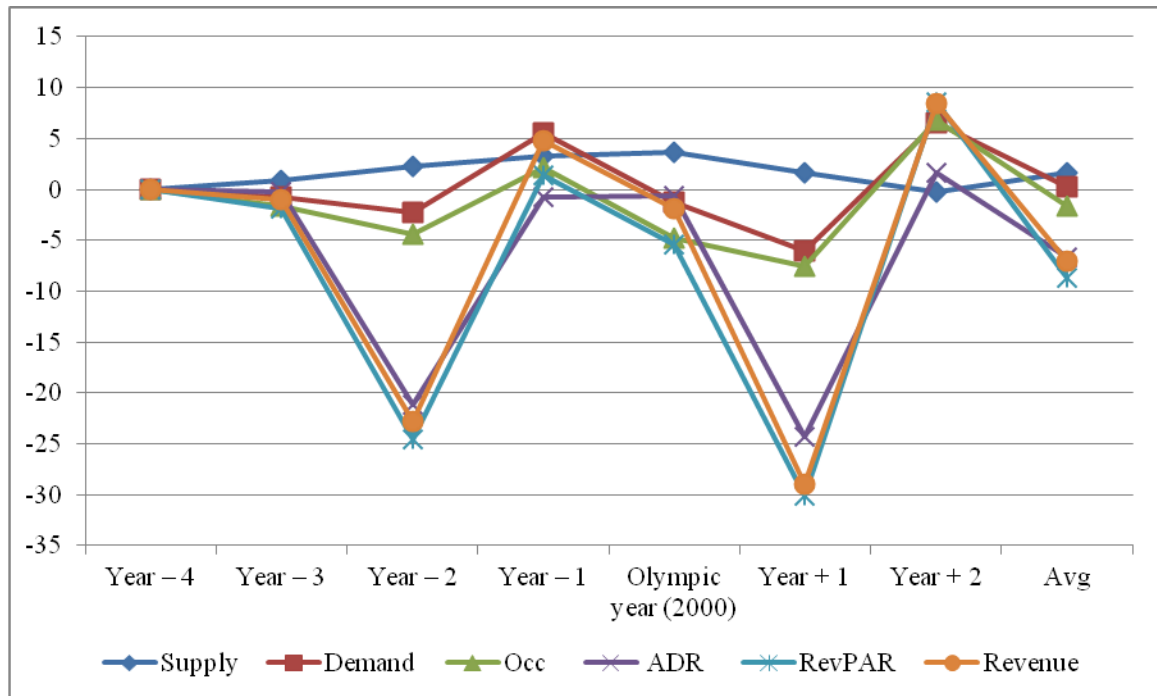
5.1.1 Findings

The data sets from Smith Travel Research Global vividly portray that each host city's lodging market experienced variant and significant impacts as a result of the Olympic Games. **Figure 1** shows the reaction of the lodging market in Sydney to the Olympic Games during the six year period. Sydney provides a tremendous supply by continuously increasing the number of hotel rooms during the time period. However, the increase of demand is not as significant as the supply. The combination of the positive supply and negative demand in two years before and two years after the Games yields the negative occupancy rate, and the unexpected negative occupancy rate results in an unprecedented decrease of the ADR and the RevPAR. In the Olympic year, Sydney provides the highest supply during the time period; however, the demand decreases, and this causes the negative occupancy rate, ADR, and RevPAR. Moreover, the large increase of the demand generates dramatic growth of the occupancy rate, ADR, and RevPAR in the year before the Games. Additionally, the lowest supply but the highest demand yields tremendous increase of the occupancy rate, ADR, and RevPAR in two years after the Games.

According to these segments, Sydney overestimated the demand; therefore, Sydney overbuilt hotel rooms for the Olympic Games. Moreover, Sydney experienced the misfortune of September, 11 in 2001, one year after the Games. Compared with the other three host cities, this misfortune significantly impacted the unexpected drop of the demand. However, Sydney did not adjust the supply appropriately. The continuous

positive supply, coupled with the negative demand, eventually causes the tremendous decrease of occupancy rate, ADR, RevPAR and Revenue.

Figure 1. Average Percent of Change of Supply, Demand, Occ, ADR, RevPAR and Revenue in Sydney, Australia



The performance of six metrics in Athens during the six years is presented in **Figure 2**. Compared with Sydney, Athens provides relatively lower supply, and Athens does not have continuous positive supply each year. To welcome the Olympic Games, Athens raises the supply one year before the Games; however, the demand does not meet the increased supply. The negative demand yields the decrease of the occupancy rate while the ADR and the RevPAR have a positive movement. It can be explained that Athens charged extraordinary room rates in that year because a large volume of visitors came to Athens for the Olympic Games; however, Athens failed to prepare sufficient accommodations for those visitors. Even in the year of the Olympic Games, Athens does not increase the supply dramatically; therefore, the demand surges the supply, and the ADR and the RevPAR reaches the highest point in the time period, as people expected. However, both the supply and demand decrease in the year following the Olympic Games, and there is also tremendous decrease in the ADR and the RevPAR. In this year, Athens did not benefit sufficiently from pushing the room rates because visitors for the Olympic Games rapidly left the city after the end of the Games.

Athens did not provide excessive new supply during the six year period. As the hotel investors and operators in Athens expected, there is a great performance of the six metrics in the Olympic year. Although the negative movement of the six metrics in the following year of the Olympic Games is disappointing, a positive trend once again appears two years after the Olympic Games.

Figure 2. Average Percent of Change of Supply, Demand, Occ, ADR, RevPAR and Revenue in Athens, Greece

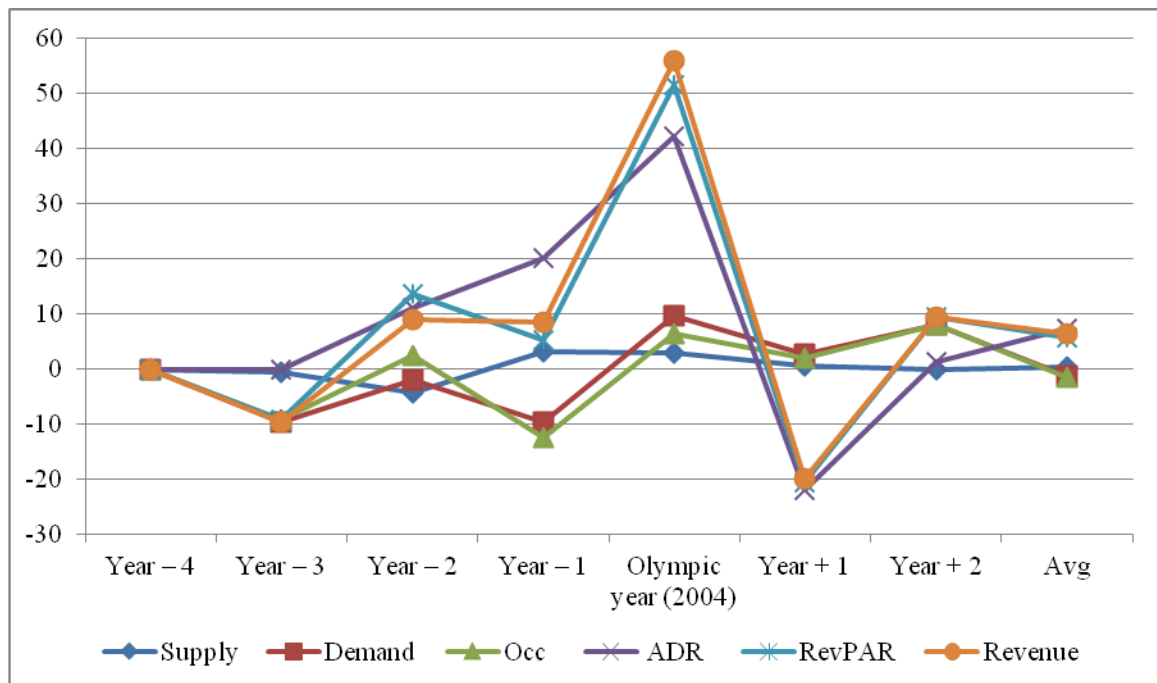


Figure 3 represents the lodging market's response to the Olympic Games in Turin during the six year period. Turin provides a continuous but slow increase of the supply each year. The growth of the ADR and the RevPAR is tremendous in both three and two years before the Games. Even in the case of the positive supply, the ADR and the RevPAR continue to perform well. In the Olympic year, Turin does not increase the supply dramatically; therefore, the demand surpasses the supply. This combination results in tremendous increase of the ADR and the RevPAR. However, the continuous positive new supply causes the large drop of the ADR and the RevPAR in the year following the Games because the demand experiences a negative movement. Nevertheless, appropriate

decreased supply successfully yields the increased occupancy rate, also resulting in the large increase of the ADR and the RevPAR in the next year.

The lodging market of Turin benefits tremendously in the Olympic year. The appropriate increased supply generates the strong performance of the lodging market in Turin. Compared with the other three host cities, the six metrics of the lodging market in Turin before the Olympic Games have better performance; however, Turin still experiences the dramatic drop of the six metrics one year after the Olympic Games.

Figure 3. Average Percent of Change of Supply, Demand, Occ, ADR, RevPAR and Revenue in Turin, Italy

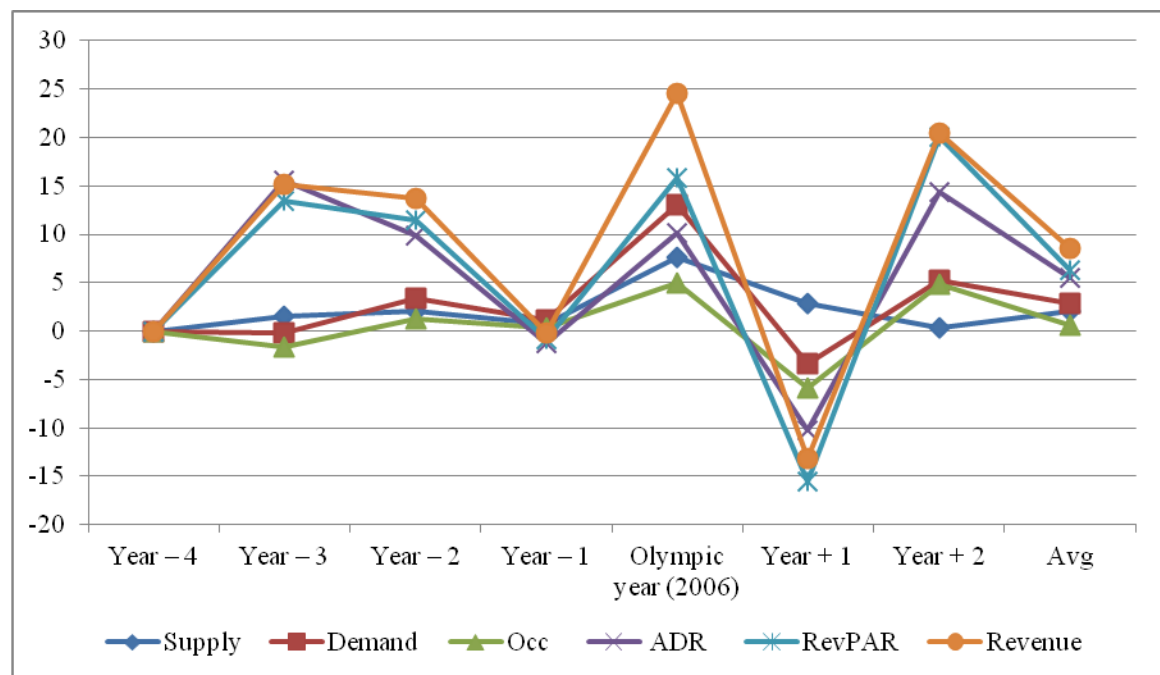


Figure 4 shows the performance of the lodging market in Vancouver during the six years. Vancouver overall has a slight increase of the supply during the time period. The increased supply in the three years before the Games generates the large spike in the ADR and the RevPAR, initiated by the increased demand and the occupancy rate. The continuous positive supply in the year before the Games causes the dramatic drop of the ADR and the RevPAR because there is an unexpected negative demand. As the hotel investors and operators expected, the demand surges the supply in the Olympic year, and this yields the tremendous positive movement of the ADR and the RevPAR. Vancouver decreases the supply appropriately after the Olympic Games, but the rapid decrease of the demand still causes the negative performance of the ADR and the RevPAR. However, Vancouver has the best performance in the year following the Olympic Games, compared with Sydney, Athens, and Turin. Additionally, the performance of the lodging market in Vancouver rises again two years after the Olympic Games.

The hotel investors and operators of Vancouver had a relatively astute expectation and evaluation of the Olympic Games' impact on their city's lodging market. Compared with the other host cities, Vancouver adjusted the supply in the appropriate amount and at the opportune time, therefore causing the dramatic positive performance of the six metrics. However, as with the performances of the other three host cities, Vancouver also faces a negative trend in the year following the Olympic Games.

Figure 4. Average Percent of Change of Supply, Demand, Occ, ADR, RevPAR and Revenue in Vancouver, Canada

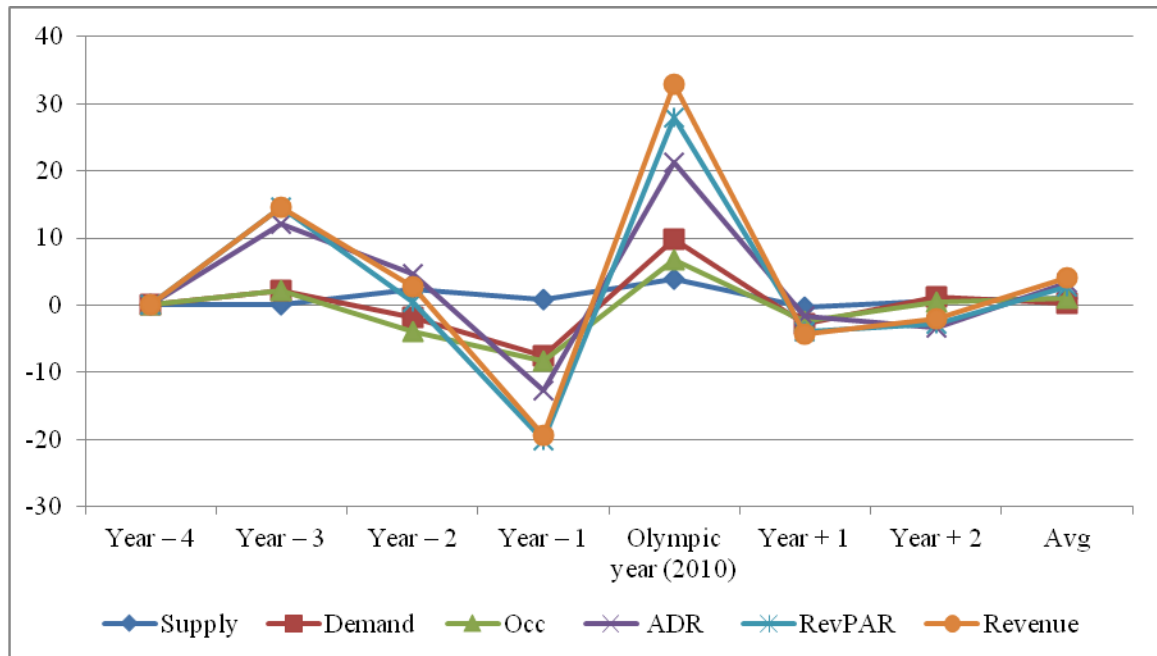
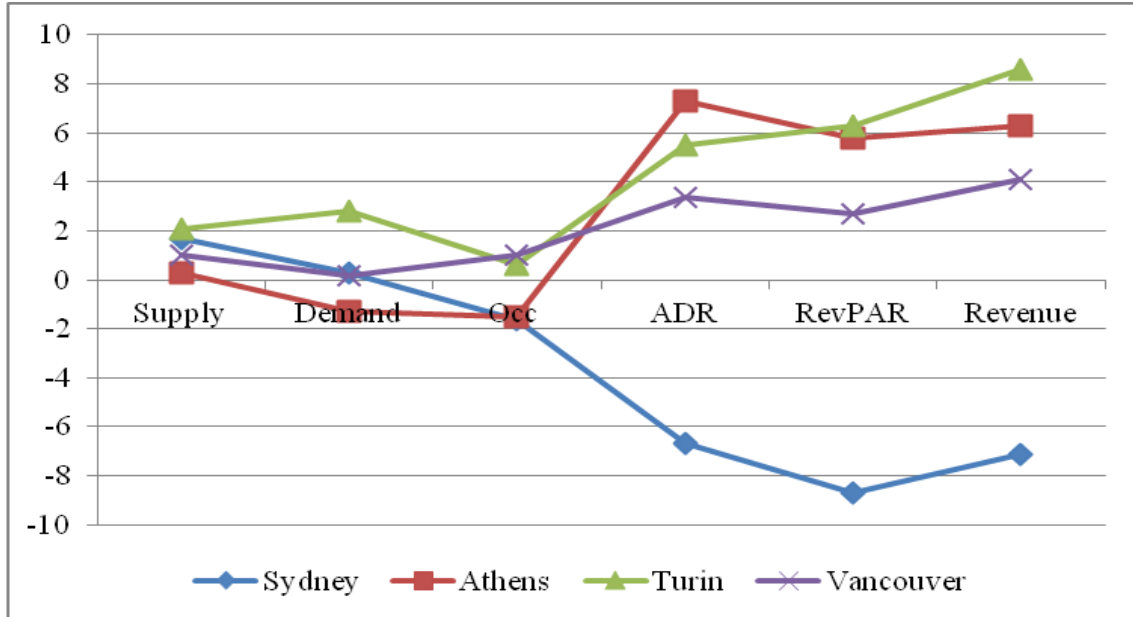


Figure 5 shows the comprehensive performance of the supply, demand, Occ, ADR, RevPAR and revenue in Sydney, Athens, Turin and Vancouver. The lines representing Athens, Turin and Vancouver follow similar patterns although the ascending and descending range are different. However, Sydney has a completely different pattern after the point of occupancy rate. This figure demonstrates that the Olympic Games has a positive impact on the host city's lodging market in Athens, Turin and Vancouver during the time period, but the level of this impact varies in each host city. Additionally, Sydney is a unique situation compared with the other three host cities because Sydney is the location most largely affected by the the misfortune of September, 11 in 2001. However, Sydney is still impacted tremendously by the Olympic Games even though the pattern of

performances of the six metrics does not show similar patterns to that of Athens, Turin and Vancouver.

Figure 5. Comparison of Average Percent of Change of Supply, Demand, Occ, ADR, RevPAR and Revenue in Sydney, Athens, Turin and Vancouver



5.2 Limitations

A few caveats are found in this analysis. First, the data is from a limited number of years. The period of time used in the analysis is six years, four years before the Olympic until two years after the Olympic Games. All of this data can only represent the change in this period of time, but the average of the six metrics and the percent of change are directly affected by the number of collected data. The limited period of time results in the limited number of data; therefore, these averages are restricted to the six year periods surrounding each Olympic Game.

Second, there are other factors which may lead to changes in the six metrics. It is true that the Olympic Games are the primary factor generating the change in the six metrics, but we cannot deny that there are other important factors also affecting the result. In this paper, we exclude the consideration of all other factors.

Finally, the results cannot be applied to all other phenomena. There are only two Summer Olympic Games and two Winter Olympic Games selected and discussed in this paper. The number of the host cities which have been selected in the paper is not sufficient to generalize to all Olympic host cities. Therefore, the result may be varied when different host cities are chosen.

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Appendix A

PERMISSION LETTER FOR USE OF DATA

The data sets in this dissertation are from the Smith Travel Research Global. The Department of Hotel, Restaurant and Institutional Management in University of Delaware paid to have access to these data sets from the Smith Travel Research Global and with this payment have the permission to use data for research purposes.

The requested permission extends to any future revisions and editions of this dissertation, including non-exclusive world rights in all languages and prospective publication of the dissertation. These rights are approved by the Smith Travel Research Global and the Department of Hotel, Restaurant and Institutional Management in University of Delaware. The professor in charge of thesis on behalf of the advisory committee, Dr. Brian Miller, permits the author of this thesis to access these data for the purpose of analysis in the current thesis.

PERMISSION GRANTED FOR THE USE OF DATA.

Brian Miller, Ed.D.
Associate Professor of the Department of Hotel, Restaurant and Institutional
Management