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Kaohsiung World Games as a Catalyst for Sustainable Urban Development

Shang Chun Ma

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ABSTRACT

Over the last thirty years the staging of events such as major sporting events has become increasingly recognised as part of development strategies within cities, regions and even countries. Behind such a phenomenon is a fierce competition between potential hosts because of the belief that these can achieve economic, social, environmental, political, cultural and tourism benefits for the hosting areas. As a consequence of the proliferation of these events, there is an increasing need to assess whether such strategy is effective. In this context, impact studies are vital. Traditionally, sports mega-event studies focused on the various impacts and on specific sports mega-events such as the Olympic Games and the football World Cup. Yet comparatively little is known about the procedures prior to the event, or about other types of events such as the World Games. To address these omissions this study investigates host residents' attitudes towards potential impacts prior to the 2009 World Games. It includes the perspectives of key stakeholders, with particular attention to sustainability issues.

The research is based on a conceptual framework underpinned by a mixed methods approach that integrates consumer behaviour theory and the concept of a 'Triple Bottom Line' within a sustainable development perspective. A questionnaire survey, observations and semi-structured interviews are the primary data collection methods. For the quantitative research method, purposive sampling was selected. A combination of analysis techniques was employed, including factor analysis, T-test, One-way analysis of variance, Logistic regression and Chi-square. For the qualitative research method, snowball and purposive sampling approaches were adopted, with content analysis and thematic analysis.

The findings of this research are significant. Compared with most studies - which indicate that host residents are more negative about host impacts after events - this research found that they view the staging of the Games in a positive light generally prior to the Games. This quantitative research found that: (a) host residents tended to show a certain level of agreement on potential positive impacts but were uncertain about potential negative impacts and long-term economic effects; (b) there is a high level of support for the idea of hosting 2009 World Games (91%); (c) within different groups of marital status, age, occupation and education there were significant differences in

attitudes towards the negative impacts; and (d) the event organisers and government authorities were not entirely successful in communicating to host residents Kaohsiung's objective of investing in the Games as a general strategy to benefit host communities. In contrast, evaluation of the use of a conceptual framework has successfully identified emerging issues in relation to the sustainability of staging the 2009 World Games. The qualitative study indicated that compared with the economic and social issues, the event planners appeared to place more emphasis on a wider range of environmental issues. However, in practice, Kaohsiung's 2009 World Games has not promoted sustainable development more generally from the outset.

The results contribute to the wider knowledge of sustainability issues in the planning process and management of a sports mega-event. They add new theoretical insights by developing and testing a conceptual framework to overcome barriers in the evaluation of a sustainable sports mega-event. Practically, the findings are important to event managers, and help provide authorities (KCG) and event organisers (KOC) base-lines to facilitate effective dialogue with host residents and to grow support for the Games. The regular assessment of the Games can provide more accurate information. Future event research considering a longitudinal survey and the TBL and SD concepts could apply this framework to studies before, during and post-event.

Keywords:
Sports mega-event; the Kaohsiung 2009 World Games; sustainable development; event management; host impacts

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7.6.1 Research recommendations 430

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LIST OF ABBREVIATIONS

AOC	Akita Organising Committee
BOT	Build-Operate-Transfer
CEPD	Council for Economic Planning and Development
CPC	Chinese Petroleum Corporation
DOC	Duisburg Organising Committee
EIA	Environmental Impact Assessments
HVAC	Ventilation and Air Conditioning System
ICDP	Integrated Community Development Project
IFs	International Federations
IWGA	International World Games Association
IWMS	Integrated Waste Management Solution
KCG	Kaohsiung City Government.
KCSDN	Kaohsiung City Sustainable Development Network
KCTDA	Kaohsiung Commerce & Trade Development Association
KMRT	Kaohsiung Mass Rapid Transit
KOC	Kaohsiung Organising Committee
LOCOG	The London 2012 Organising Committee of the Olympic and Paralympic Games
OCA	Olympic Co-Ordination Authority
ODA	Olympic Delivery Authority
OGGI	Olympic Games Global Impact
OPEN	Official Publications Echo Network
OT	Operation-Transfer
SOCOG	Sydney Organising Committee for the Olympic Games
TBL	Triple Bottom Line
THSR	Taiwan High Speed Railway
TRA	Taiwan Railway
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme
VTIAS	Verified Tourism Impact Attitude Scale
WCED	World Commission on Environment and Development
WSSD	World Summit on Sustainable Development

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Chapter One: Introduction

1.1. Introduction

The inspiration for this study derives in principle from the dearth of research on the question of how organising a sustainable sports mega-event can contribute to sustainable development in an urban setting. Traditionally, event studies focused on the various impacts that arose from different scales of events. In turn, long-term strategies for sustainable development in sport mega-event projects are relatively few during the pre-event period (e.g. Bramwell, 1997, 1998). In terms of empirical cases to be studied, for example, in the Asian context, a few sports mega-events such as the 1988 Olympic Games, the Asian Games, the 2001 Akita World Games and the 2002 World Cup Games have been held (Korea and Japan in particular). The 2008 Beijing Olympic Games are to follow. Yet there has only been very limited empirical research undertaken pertinent to the sustainability issues. Most of it is limited to impact investigations (e.g. Kim *et al.*, 2006; Kim and Petrick, 2005; Lee and Taylor, 2005; Lee *et al.*, 2005). Even if the major lasting effects on hosting cities have been confirmed by event studies, they have not systematically reflected on event-organising strategies. To a certain extent this might be attributable to the paucity of pre-event research on the uniqueness of each case where the organisers are likely to be short of appropriate information. In comparison, for Asian countries to compete successfully against western countries to host mega-events is inherently unfavourable. This is due to the higher expenditure required for newly-constructed facilities in developing countries in particular (Matheson and Baade, 2004). South Korea was given as an example. Matheson and Baade stated that to provide existing facilities that met FIFA standards for the World Cup in 2002 South Korea spent $2 billion on ten new stadiums. A further concern was the lack of plans for after the games and thus unavoidably reduced benefits.

Clearly this raises a doubt whether a mega-event strategy is then a catalytic factor for a host city and sustainable planning. Within the debate, a viewpoint raised by Bramwell (1997) critically mentioned that sustainable development might offer an integrative framework to evaluate varied impacts of mega sport events. As only recently noted (Fredline, 2006), research on events and their 'sustainable management' in a

region or area is now drawn to a growing concept of "triple bottom line", originally coined by Elkington (1981). Thus, using such a lens requires an analysis of broad issues within economic, social, and environmental dimensions that refer to the importance of this trilogy.

Event researchers inclined not only to specific issues but also to preferred method. Interest in investigating sustainability issues within event studies is quite recent but it is frequently restricted to the economic dimension (Jones, 2001; Masterman, 2004; UK Sport, 1999) with little attention to the social and environmental dimensions. In terms of research philosophy or methodology adopted in reviewed literature, on the other hand, most prefer either purely quantitative (i.e. positivism) or purely qualitative (i.e. interpretivism) approaches. Consequently, hardly has this discipline been fully explored with the use of a methodological alternative - the mixed methods approach. This gap, as recognised in the examination of the planning of sports mega-events by Leonardsen (2007: 26), may be bridged "only by combining 'soft' (qualitative) and 'hard' (quantitative) approaches, and by combining a bottom-up (e.g. host community) and a top-down perspective (e.g. event organisers)".

1.2. Study context

It has become commonplace for urban authorities to pursue sport events for the purpose of revitalizing some part of or whole their cities. Events like the Olympics are recognised as catalysts for regeneration. They play roles in creating jobs, promoting image, bringing in investment, and, importantly, contributing to the lives of host communities (Gratton *et al.*, 2005; Kasimati, 2003). Nonetheless, an earlier caution from Law *et al.* (1991) claimed that tourism (or event tourism) may not be a catalyst for urban renewal and a panacea for inner city problems. Later, Hughes (1993) questioned the true value of bidding for one-off major events, arguing whether the efforts of urban authorities might not be better spent on developing initiatives that are sustainable in the long-term. Similarly van den Berg *et al.* (1995) concluded that 'large-scale, once-only events do not make a fundamental contribution to the local tourist industry unless they fit into a long-term strategy that also provides for a follow-up'. After reviewing selected literature they also suggested that the concept of sustainable (event) tourism within urban environments has largely been ignored by academics over the years. The need for

scholarly attention to this topic was initiated by van der Borg (1992). He produced guidelines for sustainable (event) tourism development in the city, whilst Barke and Newton (1995) analysed Malaga City's approach to sustainable tourism.

Since the 1980s, governments around the world have adopted sports-related policies to stage major sporting events for urban regeneration (Gratton *et al.*, 2005). In the British context, cities like Sheffield, Glasgow, Birmingham and Manchester (Gratton and Henry, 2001; Standeven and De Knop, 1999) are examples of industrial cities following this development thread. Due to the decline of traditional industries, many cities and government agencies have sought to use tourism (or events) as a tool to spearhead their regeneration (Swarbrooke, 1999). According to an analysis by Gratton and Henry (2001), a number of studies addressing the role of single large-scale events in urban regeneration have largely focused on the economic impact (e.g. Crompton, 1995; Law, 1994; Roche, 1992). Only a few (Hall, 1992; York, 1991) considered the social impact in comparison to the economic aspect. Carlsen and Taylor (2003) also argued that understanding the links between urban renewal requires a longer-term scope, but research into mega-events such as Commonwealth Games is often concerned with tourism and short-term economic impacts (Hall, 1992; Kang & Perdue, 1994; Pyo *et al.*, 1998). They concluded that economic, social and cultural benefits from mega-events cannot be realized except through an integrated approach with long-term urban renewal policy and planning. Therefore, it is likely that successful sporting events cannot be achieved without holistic consideration and long-term planning.

1.3. Research rationale

Essentially, events such as a sports mega-event can have huge positive and negative impacts on host areas. As a consequence of the proliferation of these events there is an increasing need to justify whether such a strategy is necessary. Compiled on such logic, the need for research is set within the context of key issues identified in major sporting event studies. These encompass a complex array of concerns, from biased studying context (economy-oriented studies), the shortage of a set of effective criteria to assess and monitor its process and outcome, to preferred methodologies (either purely quantitative or purely quantitative). As such, the research is clearly identified by its position and considers a holistic approach to a sports mega-event,

featuring a rapidly-developing county in an Asian context.

In a wider academic context, the discussion is limited to the costs and benefits of staging sports mega-events and the examination of their process. Within the scope of sports events, increasing attention is paid to long-term effects rather than the realisation of what actually constitutes a sustainable sports mega-event. Furthermore, the earlier argument suggested that the gap does exist in many impacts studies of events, in the way that most event researchers incline not only to the evaluation of the single dimension but also to the certain research philosophy or methodology. Sometimes, this specific gap might oversimplify matters being studied. On the one hand, for example, by only applying qualitative research, the scoping study results might draw a conclusion covering perspectives representative of limited participants. As a result, macro views sought in a top-down approach may tell the story merely about the level of policy-makers. On the other hand, the use of a purely quantitative approach may probably result in a more comprehensive perception of hosting impacts amongst residents and within areas over a certain period. This might assist in raising common issues concerned in time but may not ensure that decision-makers or event organisers will adjust their strategies in response to the outcome.

As argued previously, on the other hand, the concern of much research preferable to single dimension (i.e. economic impact) has been addressed by many in impact studies of events. It seems comprehensible that extravagant costs are often attracted to the scrutiny of some key stakeholders, city council or taxpayers in order to justify the effects of organising initiatives. However, the multi-faced phenomena of sports mega-events have long been acknowledged and some of the effects are tangible in the short term and some others are less tangible, which can sometimes only be observed in the longer term (Liao, 2006). In this respect, for impact studies of events without seriously considering huge impacts of different dimensions on host areas, it is assumed that the objective of such research targeting at sustainability issues might be compromised in its own right.

Research on impact studies of events, especially the sports mega-events, is recently focused on sustainability issues which should cover three dimensions. For example, IOC has made its endeavour to launch the Olympic Movement's Agenda 21

(IOC, 1999), and simultaneously called for more attention on carrying out the concept of sustainable development worldwide in host cities. However, operational criteria available to evaluate the real performances seem to be left behind in this discipline. In this regard, IOC has urged for the need to establish "an analysis instrument capable of identifying and measuring the global impact of the Olympic Games" (Van Griethuysen & Hug, 2001, in Leonardsen, 2007: 13). As such, the Olympic Games Global Impact project (OGGI, hereafter) was commenced to establish specific indicators for responsible planning. Nonetheless, although the OGGI project has as many as up to 150 operational criteria included so far and should also be encouraged anyhow, admittedly it can be argued that to create a comparable benchmark amongst different host cities is relatively difficult due to the complex nature of each case. Importantly, furthermore, it is still questionable whether these indicators are raised specifically for the evaluation of Olympic impact only or beyond (e.g. Super Bowl, World Cup events, Commonwealth Games, World Games *etc.*). In fact, from the 1987 Brundtland Report to the 1992 Rio Earth Summit (see also Chapter Two), their contribution has become a solid basis whenever sustainability issues are addressed. Nowadays Local Agenda 21 is pursued so as to aim at challenges more precise in accordance with local characteristics in different countries and regions. With such argument notified, therefore, the creation of a set of suitable and operational sustainability criteria for the specific use of host areas associated with sports mega-events should be prioritised.

Concurrent with host areas' sustainability issues in connection with sports mega-events is the development of community involvement in the planning process. To this point, a repeated concern is that issue of this kind is likely overshadowed by events' tight schedule (Getz, 1991), although it is widely recognised as a relatively new but important phenomenon (Gursoy and Kendall, 2006; Haxton, 1999). It is also suggested that event planners and stakeholders seek the views of the community in determining the success and sustainability of their investment (Williams and Lawson, 2001), and thus an investigation into local people's perception of hosting impacts is of importance for the justification of a sustainable sports mega-event. However, such studies are regarded as debatable. As Bull and Lovell (2007) mentioned, studies relating to investigation into people's perceptions can be criticised for reporting subjective views that may not necessarily turn into real outcomes. In response to this, Ohmann *et al.* (2006:137) maintain that perceptions can play a significant role in terms of community

opinions on the success or otherwise of the event. An understanding of the level and nature of support or otherwise could well place important influence on policymakers in their planning and promotion of future events (Bull and Lovell, 2007: 237).

It is emphasised that effective Games-related urban development strategies and mastering plans can be better recognised if decision-makers are sufficiently informed about local challenges of sustainable development issues: however, at present, a fitting operational framework that underpins such a process is not yet available (Liao, 2006). Specifically, for an event to be sustainable it should be evaluated "from the outset in relation to the concept of sustainable development, with key indicators of sustainability being identified and then monitored over a long period" (Bramwell, 1997: 18).

Thus, the research question addressing the above specific problems studied is:

"How can a sports mega-event at the planning stage in a rapidly-developing Asian context contribute to sustainable urban development?"

At the same time there is also a need for this research to:

- fill the gap of evaluation methods in the discipline of event studies associated with sustainability issues by applying a mixed-methods approach so that the problems of oversimplifying consequences yielded can be mitigated to a less extent;
- provide a practical tool for event organisers and urban planners to evaluate present challenges in a wider dimensions of economic growth , social equity and environmental conservation so that sustainable principles can be applied in practical strategies at the earliest possible stage;
- develop an operational or at least a theoretical framework to underpin the research process so that the exploration of 'sustainable management' of event can be more integrated and systematic and can be used to lead the event's planning from the outset as well as to provide an alternative for future studies.

With an improved understanding of the gaps between studies of events and sustainability issues and its need for research, the following subsection introduces the

incentives for selection of the 2009 Kaohsiung World Games as the case to be studied.

1.4. Motives for the case study on Kaohsiung

Kaohsiung, the second large city in southern Taiwan, used to be symbolic of the Taiwan economic boom in the 1980s and 1990s. It has now been facing a de-industrialisation similar to that in many Western European economics during the 1970s and 1980s. Of course, this decline cannot be attributed to just reasons as changes in central government policies to reduce aid, and increased global economic competition (Andranovich *et al.*, 2001). However, the high unemployment rate largely relates to the shift in industrial structure away from its previous reliance upon production-based environment towards high-tech and service-dominated industries. In reality, the factor behind this enormous and swift change is mainly China's attractiveness as a 'huge potential market' and source of 'cheap labour'. With current economic trends sweeping across the world, Asian countries (especially Taiwan) have to face new challenges. Their domestic entrepreneurs and labour-based industries are forced to seek bigger consumer populations and cheaper assembly lines, and in this context Kaohsiung has no choice but to adapt or suffer.

In the middle of this process, while the community are suffering, the municipal government tackles all criticism by focusing on the alternatives. There is a wide range of strategies such as the adoption of leisure and consumption-oriented development (rejuvenating derelict districts, waterfront development, building MRT (Mass Rapid Transit), re-imaging the city, building sewage, reviving Love River and hosting mega-events *etc.*), as part of the measures in response to key aspects of the economy. These apply to the tourism industry in particular. Furthermore, the strategies include the basic provision of cleaner drinking water and fresher air. Both of these have been crucial obstacles hindering investors. Among these strategies the staging of a sports mega-event (the 2009 World Games) is worth special mention.

A mega-event (i.e. a multi-sport event) has never been held in Taiwan. The Kaohsiung World Games 2009 is widely regarded as a pioneer and a test of whether it is capable of hosting mega-events. But the underlying question is why Kaohsiung struggles for the Games, and the answers may relate to a number of key factors. Firstly,

globalization and the economic restructuring of cities are powerful elements and the city government has been aware of them. Secondly, the local industrial environment has changed and high unemployment primarily relates to the increasingly-open markets in China. Thirdly, the image of Kaohsiung has long been notorious for its air pollution and the lack of clean drinking water. In this sense, mega-events are seen as stimulants to urban economic redevelopment (Roche, 1992; Mules, 1993); the internationalization of capital can boost the mega-event as a form of place marketing for inward investment (Kearns and Philo, 1993; Hiller, 2000); and they are sought as a vehicle for some forms of "fast track" and massive urban transformation. This event has deep implications for the city and for Taiwan. First, significantly, the Games are the first international multi-sport event to take place in Taiwan. Secondly, in terms of its diplomatic difficulties, Taiwan is effectively put on the international stage by hosting the sport event. Thirdly, via this chance, Kaohsiung will be recognised as being capable of hosting sports mega-events.

In the latest news to be released (Taiwan News Online, 2006), some perspectives given by former Council Chairman Chen Chuan-show demonstrate how the primary purpose of bidding for the World Games is regarded. As originally thought, "the World Games, with such offbeat events as korfball, tug of war, fin swimming and ultimate Frisbee, is unlikely to capture much of the world's attention." However, Chen believes "To the U.S., the event would be too small to have an impact, but because we've never run a large-scale competition, it will be a great challenge for us." Actually, Taiwan has never hosted an international, sporting, multi-event competition and is woefully lacking in sports facilities. In general, according to former Council Chairman Chen, it is recognised that the Games serve a broader purpose as:

1. A stepping-stone to hosting the 2011 World University Games (the bid failed) and lead to greater social integration;
2. A multi-event, it is one involving more than 4,000 athletes from over 100 countries that, if handled well, will boost Taiwan's credentials for more prominent competitions;
3. Providing a reason to build an NT$ 5.3 billion 40,000-seat stadium in Kaohsiung (for the Games' opening and closing ceremonies) that could be expanded to a capacity of 70,000 if the need arose.

However when mega-events are considered by a city government they appear to have significant impacts to the hosting city. For example, a legacy of high costs might be left behind (furthermore without meeting the needs of local residents). Some projects omit any environmental assessment or consultation with local people, but nevertheless, staging a mega-event in a city may temporarily solve some economic problems. On the other hand, concerns about the living environment and the provision of cleaner drinkable water seem to outweigh all others. It is then evident that the drive to host a mega-event to seek solutions to these problems will indirectly lead to a need for decision-makers to consider other important issues. These include 1) How a mega-event contributes to the issues raised; and 2) How to stage a successful mega-event. Aside from these concerns it is important to deal with how to manage the impacts of an event on the host community. According to Fredline (2006), two reasons why governments have to tackle these issues are: Firstly, they have a moral obligation to encourage sustainability in any activity they promote and support: they should seek to protect the quality of life of local residents from negative impacts. Secondly, local residents are often influential groups, and the success of the event is largely dependent on a supportive and involved local community.

The use of Kaohsiung as a case study will provide helpful insights into the practice of sports mega-events. It will improve the understanding of the causes of gaps between studies of events and sustainable development concepts. The case study will address issues of the adaptation of approaches to mega-event management to encourage sustainable development in Asian urban areas. Last but not least, if the Kaohsiung 2009 World Games are to deliver sustainable legacies, they need to be embedded in the city's developing programmes and policies. This approach should start as early as possible and be continued afterwards.

1.5. Study aims, objectives and overview of the research methodology

With a view to the paucity of studies of sustainable sports mega-events, this study is intended to examine the potential gaps between the implementation of a mega-event and sustainable development. This will be in the context of Kaohsiung in Taiwan. Several issues raised in the Introduction shed light on the major concerns in this study. **The primary aim of this research is then to establish how the 2009 World Games**

hosted by Kaohsiung could contribute to the sustainable development in the host city.

To accomplish the aim, the study developed six more specific objectives:

1. To critically review the literature based on sports mega-events and sustainable development
2. To identify and survey the potential impacts (economic, social and environmental) on the host community before the World Games
3. To undertake a comparative analysis of a selection of major sporting events and their documented impacts on host cities. This will be used to identify common issues and principles and to provide context and transferable models for the main case study
4. To build good practice criteria to assess how the event can help Kaohsiung City create sustainability in a wider dimensions of economic development, social equity and environmental conservation. To allow an evaluation of practical strategies in meeting sustainability
5. To develop and apply a theoretical framework to analyse the gaps between a sports mega-event and sustainable development. This makes possible the systematic exploration of a sustainable sports mega-event as well as providing an alternative methodology for future studies.
6. To highlight where improvements can be made in Kaohsiung, in either the pre-vision or in the process, in order to develop sustainability of the event and in the city itself.

The PhD contribution to the study applies to objectives 4, 5 and 6, which enhance the understanding of the gaps in the knowledge of sports mega-events and sustainable development.

In achieving objective 2, research questions were specifically directed as follows:

(1) Are there significant differences in host impacts between the different backgrounds of the host residents?
(2) Why do some host residents support the staging of the Games?

(3) Why do some host residents not support the staging of the Games?
(4) Why do some host residents take positive attitudes toward host impacts within the selected case study communities?
(5) Why do some host residents take negative attitudes towards host impacts within the selected case study communities?

The methodology employed provides the combination of details of the specific approach and methods and the richness of investigations by applying a variety of data collection techniques. In terms of research philosophy, the adoption of pragmatism as research philosophical approach is considered most appropriate since the current study seeks the views with multiple techniques by collecting data from different roles in a real world context.

The development of research design and the selection of methods were elaborated in accordance with research aims and objectives as well as available resources in reality. The study was based on a case study approach, which can be utilised to explore issues in depth and in context (de Vaus, 2001; Finn *et al.*, 2000), implying an iterative approach to inductive and deductive enquiry. Thereby, through the lens of deductive approach, quantitative methods were adopted to investigate event impacts within host communities. This allows a model of hypothesized correlated relationships raised in the current study to be tested. Simultaneously, with the development of inductive ideas, qualitative methods were thus inspired and used to probe a wide range of sustainability issues within the scope of a case being studied, such as semi-structured interviews with governmental officials and stakeholders as well as field observation.

Data collected through quantitative methods were analysed with appropriate statistical techniques. In turn, qualitative data were gathered under consideration of a series of ethical issues and then carefully analysed predominately by manual approach and through the use of content analysis method. The consequences of analysis were interpreted and further compared with quantitative data.

Overall, this study will improve the understanding of this gap in knowledge. Additionally, history has shown that most mega-events have been restricted to cities of the developed countries (The United States, Australia, and Europe) and more recently

Korea, Japan and then China. The focus in this study will be on those cases that have adopted the concept of sustainable development into the decision-making processes. Afterwards, the identified sustainable development criteria and the implications learned will be applied to a specific case study of Kaohsiung city. A practical framework has been developed from relevant theoretical literature and case studies, and this will be applied to Kaohsiung. The limitation of exploring this case study is that the investigation can be undertaken only during the pre-event period because of the timeline in this study. Nevertheless, the case study research method will provide important insights into the process of hosting a mega-event and its relationship to sustainable development in Kaohsiung, Taiwan.

1.6. Terminology

Specific important terms occurring frequently in the research are as follows:

- **Sports mega-event**: The term is used to signify an event that includes the following criteria: being held once or recurring, serving the functions of enhancing awareness, appeal, redevelopment and profitability of a host city, being international in scale and concept, and yielding extraordinarily legacy with its long-term impacts on a staging city. In this research, it refers to the 2009 World Games.
- **Sustainable development**: The term sustainable development denotes "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations, 1987:54).
- **Sustainable sports mega-event**: For this research, a sustainable sports mega-event can reflect the spirit of Brundtland Report, the Olympic Movement Agenda 21 and strategic sustainable development of Taiwan Agenda 21. It also deals with sustainability issues of economic development, social needs and environmental conservation.
- **World Games**: The term refers to the 2009 World Games in Kaohsiung, Taiwan.
- **Host impacts**: For this study, the term refers to various positive and negative impact statements on revised tourism impact attitude scale (Getz, 1977 and

1991; Hall, 1992; Lankford and Howard, 1994; Ritchie, 1984; Shultis *et al.*, 1996, Twynam and Johnston, 2004), including economic, social, and environmental dimensions.

1.7. Structure of the thesis

The research is organised into seven chapters. In addition to Chapter One, firstly, Chapter Two highlights theories and empirical studies in relation to issues of sports mega-events and the concept of sustainable development. It reviews the definition of a sports mega-event and the nature of a mega-event, and outlines a sports mega-event and its impacts. Following on from this, a discussion of the concept of sustainable development, definition of a sustainable sports mega-event, the concept of "Triple Bottom Line" (TBL), consumer behaviour theory, and the impacts of "Green Games" are provided. Chapter Two further reviews an event planning model and discusses an impact model and the conceptual model proposed for this research that is then applied and assessed subsequently. Chapter Three reviews the research methodology and details the methods used for the research. This continues by detailing the logic behind the research design and illustrates the research process. In addition, a brief introduction to the case to be studied and description of the Host City and the nearest three World Games in terms of time are provided. With research methods identified, it details the data collection process and issues involved, both qualitative and quantitative. The last section concludes with the applicability of the data analysis strategies adopted. Chapter Four focuses on the sustainability issues and details the results of data collected mainly from interviews. These include issues of a sustainable economy in organising the 2009 World Games (Section One), a sustainable society (Section Two) and a sustainable environment (Section Three). Chapter Five details the results and analysis of data gathered from host residents. Section one presents descriptions of demographic profiles. Section two includes the results of the analysis from comparing host impact scores for six demographic variables. Section three presents the results of analysis from testing the impact model proposed. Chapter Six presents the discussion of the research findings within the context of relevant literature. Section One discusses the findings with respect to sustainability issues within case study context, along with the critical argument to be made with previous literature. This allows the strengths and gaps of the case to be studied to emerge. Section Two discusses the findings associated with host residents'

attitudes towards the impact factors within demographic profiles. Section Three discusses the findings with a wider range of relevant literature based on the results obtained from testing the impact model. This further considers hypotheses proposed. Chapter Six concludes with a discussion on the achievements and challenges reacting to host impacts within the conceptual framework proposed (Figure 2.4, Chapter Two). Chapter Seven presents a synopsis of the research findings within the hypothesized model, the specific criteria of sustainable development and the practical use of the conceptual framework. The thesis concludes with research recommendations, limitations and future directions for research.

Figure 1.1 provides an overview of structure of the thesis and of the link between each chapter.

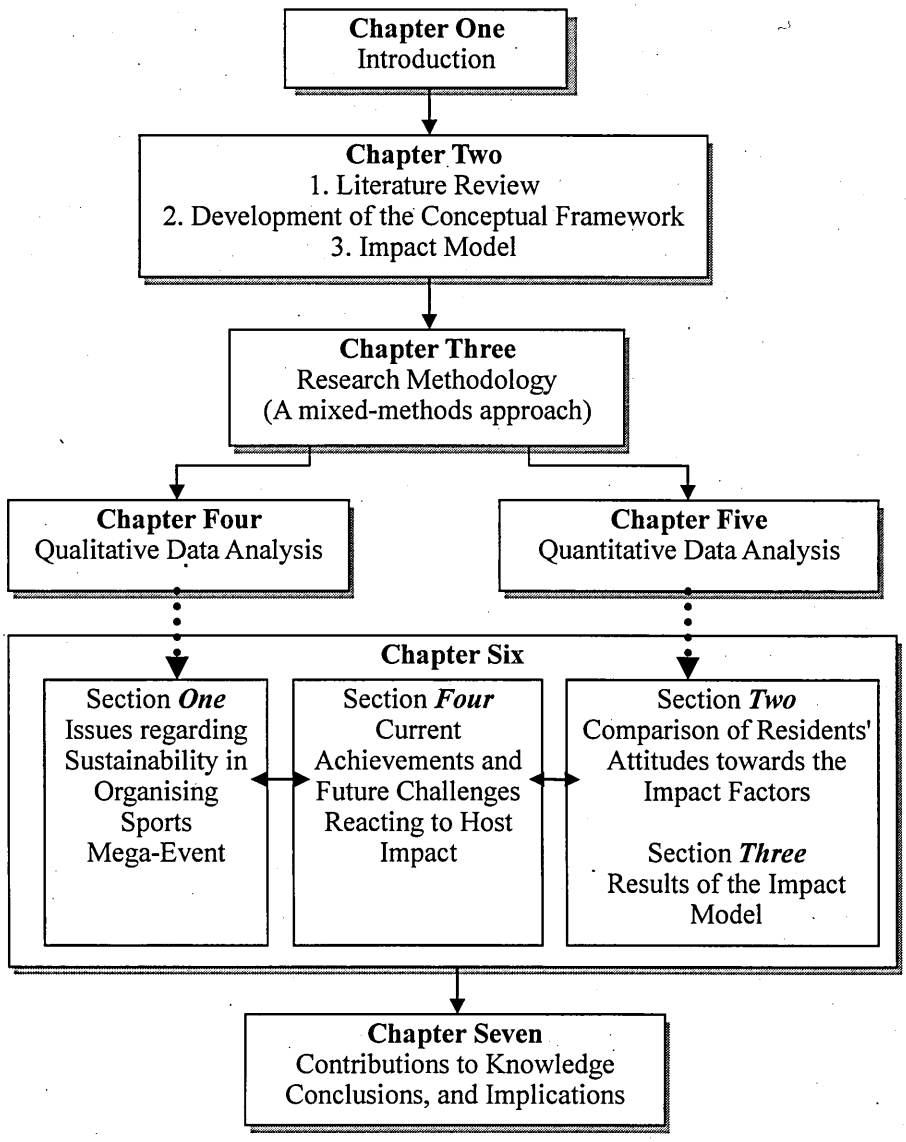


Figure 1.1 Structure of the Thesis

Chapter Two: Literature Review, and development of the Conceptual Framework and Impact Model

This chapter introduces what the mega-event is, the concept of sustainable development and the impacts of mega-events. Based on reviewed literature, an impact model and the conceptual framework are developed in order to achieve research objectives 1, 2, 3, 4 and 5.

2.0. Introduction

Assessing literature for this research provides an overview of gaps and strengths within the academic literature, and offers a fundamental basis for this research. It examines theories and empirical studies associated with the relationships between sports mega-events and the concept of sustainable development. Within this, the review finds that while much is known about the perceived economic and social impacts of certain types of sports mega-events such as the Olympic Games, there has been comparatively little evaluation of other types of events. The latter include the World Games and the potential social, economic and environmental impacts prior to the Games. Furthermore, only a few conducted longitudinal studies, most of which are based on the experiences of western countries. As such, this review has centred on developing an understanding of the nature of sports mega-events related to the concept of sustainable development. The results of this review can provide a base-line to compare with data collected in this study.

This chapter is composed of three sections. Section One reviews the definition of a mega-event and the nature of a mega-event, and outlines sports mega-events and their impacts. This is followed by a discussion of the concept of sustainable development, the definition of a sustainable sports mega-event, the relationships between event phenomena and sustainable development, the concept of the "Triple Bottom Line" (TBL), impacts of sports mega-events within three dimensions and the impacts of "Green Games". Section Three relates to an introduction of an event planning process, an impact model and the conceptual framework proposed by this research.

This review helps to shape the main framework that underpins the whole research. More importantly, it identifies the existing theories, key issues and rationales behind studying a sports mega-event. These are presented in the following sections.

2.1.0. Section One: Mega event

2.1.1. Defining a mega-event

The concept of a mega-event was introduced by Ritchie and Yangzhou in 1987, but was identical to a definition of a hallmark event introduced some years earlier (Ritchie, 1984:2). According to this definition:

> "Mega-events are major one-time or recurring events of limited duration developed primarily to enhance the awareness, appeal and profitability of a tourism destination in the short and/or long term. Such events rely for their success on uniqueness, status, or timely significance to create interest and attract attention."

Within the definition, Ritchie has further distinguished different typologies, which are world fairs/expositions, major sports events, unique carnivals and festivals, significant cultural and religious events, historical milestones, classical commercial and agricultural events and major political personage events. Whilst it is sometimes given other terms like 'major events' or 'special events' (Burns and Mules, 1986; Getz, 1997), the differences between these concepts are not clearly made. Following this, Getz (1997) defined the concept of a mega-event in contrast to the hallmark event as follows: "mega-events, by way of their size or significance, are those that yield extraordinarily high levels of tourism, media coverage, prestige or economic impact for the host community or destination" (Getz, 1997: 6).

However, since Ritchie's definition emerged, there have been diverse attempts to fix different terms to a specific one. Arguments made by Hall (1997) on how to define a hallmark event, special event or mega event are crucial. In his opinion, for example, the 1987 Congress of the Association Internationale d'Experts Scientifiques du Tourisme resolved that mega-events could be defined in three dimensions: by volume (1 million visits), by a money measure (Can. $500 million, DM 750 million, FFr 2,500 million),

and in psychological terms (by reputation) (Marris, 1987: 3). Though substantial debate over the definition of mega-events seems to carry on, several key and related factors occur in the study of large-scale events. These have been identified by him as redevelopment, imaging and place promotion and their impacts. An earlier thought from Getz (1991) indicated those factors required for a mega-event might include the economic effects that result from the event, the numbers of visitors attending the event, the expenditure on organizing the events, and the prestige and reputation derived from getting the event. Dimanche (1997) argued that these factors appear limited in short-time impacts. Nevertheless, from the initiative of Ritchie, discussion either on short- or long-term consequences in terms of hosting mega-event is necessary. To quote Roche (1994:1), "Mega -events are short-term events with long-term consequences for the cities that stage them." Because, in a mega-event. the short-term economic return is likely to be negative owing to unavoidable and massive investments, it is also necessary to examine its long-term legacy in terms of the impact of its performance and significance.

It is important to narrow down what constitutes a mega-event in this research. A review of related issues in conjunction with more recent events studies suggests "mega-events" as the preferred terminology. Hence, according to Ritchie (1984), its attributes are either one-off or a recurring event of limited duration. Being international in scale and concept is adopted as a criterion in one by Jago & Shaw (1998). With its diversity *per se*, what we are attempting to do here is to have this general picture of a mega-event concept zoom in a little bit. Criteria for mega-events in this research are recognised as:

1. Being held once or recurring;
2. Serving the functions as enhancing the awareness, appeal, redevelopment and profitability of a host city;
3. Being international in scale and concept; and
4. Yielding an extraordinary legacy with its long-term impacts on the staging city.

2.1.2. Nature of mega-events

The significance of mega-events is increasingly drawn to international, national, regional and local attention. Interestingly, they somehow become an essential element in

the decision process when promoting tourism (Frisby and Getz, 1989; Hall, 1992). Several kinds of functions (e.g. economical development, social participation, enhancing local pride, construction of facilities, re-imaged city, etc.) which they serve have been identified by researchers (Ashworth and Goodall, 1988; Hall, 1992 and 1997) and hence make the nature of them more prominent. Among these, the primary one is acknowledged to provide the city or region that stages them with an opportunity to be put on the tourist map.

In turn, despite the amount of benefits that mega-events may accrue, it is still crucial to inspect the potential costs that may accrue when exploring this issue. In other words, the assessment of impact becomes central to the mega-event research. Indeed, the types of impact are also proposed by Ritchie (1984) and the nature of each variable to be evaluated is also explained. Apart from the above outstanding contribution mentioned, a further eminent point indicated in this literature might be problems relevant to data collection and interpretation in terms of impact investigation. Apparently, work needs to be done to clarify the possible impacts of the mega-event, and we will discuss these in a later part of this research.

The original effort to classify mega-events is made by Ritchie in 1984. This is mainly identified with seven different categories (see Table 2.1). but the mega-events can be categorised from the different perspectives of the researchers themselves. For example, they may classify mega-events according to such diverse criteria which they emphasize as religion, cultural, commerce, sport, history, or politics. By examining this, we can have more insights into the nature of mega-events. Table 2.1 succinctly presents the classification given by Ritchie (1984) and Hall (1992).

Table 2.1 Classification of mega-events

Ritchie (1984)		Hall(1992)	
Classification	**Examples**	**Classification**	**Examples**
World fairs/expositions	Expo '67 Knoxville '82 New Orleans '84 Vancouver '86	**Religious and sacred events**	The Haj (Mecca) Blessing of the Fleet Christmas in the Holy Land (Bethlehem and Jerusalem) Papal tours Ramlila
Unique carnivals and festivals	Mardi Gras Quebec Winter Carnival Oktoberfest Stampede	**Cultural events** Carnivals and festivals	Mardi Gras (Rio de Janiero) Spoletto Festival (Spoletto and Melbourne) Gay and Lesbian Mardi Gras (Sydney) Festival of the Pacific Oktoberfest (Munich, Waterloo) British Royal Weddings (London) United States Bicentenary (1997) Australian Bicentenary (1988)
		Historical milestones	500th Anniversary of the Sailing of Columbus (1992)
Major sports events	Summer Olympics Los Angeles 1984 Winter Olympics Calgary 1988 World Cup Soccer Boston Marathons Grand Prix Racing	**Commercial events**	World and International Expositions Royal Agricultural Show (Sydney)
Significant cultural and religious events	Germany Oberammergau Rome Papal Coronation London Royal Wedding	**Sports events**	Olympic Games (Summer and Winter) Commonwealth Games Pan-American Games World Cup Athletics World Cup Rugby (United Kingdom and France, 1991) World Cup Cricket (Australia and New Zealand, 1991) Australia Football League Grand Final (Melbourne) National Football League (NFL) Superbowl Baseball world Series Football Association (FA) Cup Final (Wembley) The Americas Cup (Fremantle, 1987; San Diego, 1991) Formula 1 Grand Prix racing Melbourne Cup (Melbourne)
Historical milestones	Los Angeles Bicentennial 500th Anniversary of the Discovery of America (1492-1992)	**Political events**	Party conventions International Monetary Fund/ World Bank conferences Visits by the British Monarchy
Classical commercial and agricultural events	France Wine Purchasing Toronto Royal winter Fair Amsterdam Floriade '82		
Major political personage events	Presidential inaugurations Funerals of heads of state/Tito (Yugoslavia), Brezhnev (Russia) Papal Visits Major political leadership conventions		

Sources: Ritchie (1984:2) and Hall (1992:22)

2.1.3. From mega-event to sports mega-event and its impacts

An outstanding nature of mega-events elicited from earlier discussion is their potential impacts. Within this context, understanding of various potential impacts is fundamental and yet necessary to mega-event research. In fact, this nature has been dominating the agenda through either practical hosting process or conducting relevant studies. Since the advent of this concern, analysis in connection with the potential impacts of mega-events on host communities was undertaken by those pioneer researchers, such as Getz (1991), Ritchie (1984), Hall (1992), and Shultis *et al.* (1996). According to their studies, those impacts have their positive and negative aspects for each (see Table 2.2).

Table 2.2 Various potential impacts of mega events on host communities

Various Potential Impacts	
Economic	***Positive***- expenditures, employment ***Negative***- price increases during event and real estate/ increased deficit
Tourism	***Positive***- increased image as tourism destination/ creation of new tourist attractions/facilities ***Negative***- poor reputation where resulted from event (e.g. inadequate facilities, improper practices, inflated prices)
Physical/environmental	***Positive***- constructing and renewing necessary facilities ***Negative***- ecological damage/ overcrowding/architectural pollution/destruction of heritage
Social/cultural	***Positive***- increase in local interest and participation associated with event/ strengthening of regional traditions and values ***Negative***- commercialization of activities which may be of a personal or private nature/potential increase in crime/changes in community structure/social dislocation
Psychological	***Positive***- increased local pride and community spirit/increased awareness of non-local perceptions ***Negative***- tendency toward defensive attitudes concerning host region/culture shock/misunderstandings leading to hostility between host and visitors
Political/administrative	***Positive***- enhanced international recognition of region and values/development of skills among planners ***Negative***- satisfying ambitions of political elite/nature of event distorted/inability to achieve aims/use of event to legitimate unpopular decisions/legitimisation of ideology and socio-cultural reality

The sports mega-event as one of the most well-known forms of mega-event is an attractive proposition for most cities. Although in the past many were organized specifically to provide opportunities for participation in sporting, cultural, religious or political activities, they are increasingly seen as tourist attractions (Getz, 1989). The staging of mega-events has therefore become an integral part of the tourism marketing strategies of many destinations (Fredline and Faulkner, 1998; Getz, 1989; Mules and Faulkner, 1996; Ritchie and Smith, 1991; Thorne and Munro Clark, 1989). Mega-events have long assumed a key role in international, national and regional tourism marketing strategies. On the one hand, this is because their primary function offers opportunities to put host cities on the map of tourism markets. On the other hand, the resulting legacies will have more significant impacts than just as immediate tourism (Hall, 1992).

The question of why 'urban regeneration' is so strongly linked to 'mega sporting events' rather than others is mainly attributable to the huge costs of staging them. They can only be justified when envisaged as leading to a major programme of urban regeneration and improvement (Essex and Chalkley, 1998). Early research on the use of sports development projects as a tool for urban regeneration was undertaken by Long and Sanderson (1996). It is concluded that a local government adopting a community-based urban regeneration approach may often include sports projects. The example of sport-led urban regeneration is based on the experience of Sheffield. Roche (1994) draws on various sources to compile a timeline of developments associated with the bidding and hosting phases of the Sheffield 1991World Student Games. This includes the development of organisational and financial problems, building and cost control problems, publicity and image problems, public criticism, an event deficit of 10 million pounds and 20-year capital debts of over 400 million pounds. A different viewpoint away from Roche's (1994) is presented here by Bramwell *et al.* (1998) and his earlier argument (1997). Despite criticism resulting from a loss of over £10 million by the hosting of the World Student Games in Sheffield in 1991, the £147 million worth of sports facilities from the Games has allowed Sheffield to develop a sports-led urban regeneration strategy. Furthermore this got the city recognised as the UK's first 'City of Sport'. Another good example is East Manchester. Research on this sports-led regeneration (Burgoyne, 2005; Podd, 2003) also showed how the facilities built for the 2002 Commonwealth Games were converted for long-term use as a football stadium.

The dimensions of sports mega-events are the development of sporting infrastructure and the use of sporting events as a form of promotional vehicle for cities. The ability of an event to achieve this objective depends on its uniqueness, the status, and the extent to which it is successfully marketed within tourism (Ritchie, 1984). Events can help construct a positive image and help build commercial and public awareness of a destination through the media coverage they generate (e.g. Tourism Victoria, 1997a, b). In addition, the reasons why government involves itself in sports were noted by Okner (1974). The high profile attached to many one-off (e.g. an Olympics) or regular (e.g. a major league club) sporting events has led many governments and municipalities to subsidise the construction and operation of stadia, arenas and associated sporting infrastructure (Hall, 1992; Lipsitz, 1984; Page, 1990; Roche, 2000). This raises a range of policy issues, such as image, generation of new industry, additional benefits, beneficial effects and encouragement of interest (Weed, 2001). Glyptis (1991) explored the relations between sport and tourism and concluded the four types of this linkage that opportunities and responsibilities may accrue for government and official agencies to take (e.g. economic gain, social benefits, generating tourism strategies and enhancing sports participation). Specifically, the perspectives kept by Glyptis and Weed might be indicative of the 'post-federal' era, which is identified by Clarke and Gaile (1984, cited in Andranovich *et al.*, 2001) in local economic development policy making. The emerging phenomenon may in part explain the timing of after 1984, and it is characterized by "*a greater willingness of local governments to take risk, an increased co-operation among governments on a metropolitan or regional level, pooled financing and greater reliance on public-private partnerships or quasi-public agencies to implement development projects.*" In recent years, however, this strategy has been revived with a renewed prominence as the result of the confluence of several factors. These are notably changes in federal urban policy and hence federal aid to cities was cut (Caraley, 1992) and increased global economic competition.

The more recent studies of urban development have emphasized both the role of consumption-based economic development in cities (Andranovich *et al.*, 2001; Hannigan, 1998; Judd and Fainstein, 1999) and the importance of civic boosterism and re-imaging strategies to gain recognition and competitive advantage (Holcomb, 1999; Pagano & Bowman, 1995). Among the strategies that city leaders have been

enthusiastic about under the guise of getting jobs and enhancing their competitive advantage are the pursuit of sport mega-events, such as the Olympic Games and World Student Games. According to Andranovich *et al.*, motivations behind bidding for a "gigantic festival" are to allow cities to focus economic development activities and attention for competitive gain, to draw attention from around the world and to attract tourist revenues and media recognition. Furthermore, by conducting a comparative analysis of three cities that hosted the Olympic Games (Los Angeles, Atlanta, and Salt Lake City), Andranovich *et al.* (2001) noted that there are two reasons for these cities to adopt mega-event strategies, these being that they strategically provide opportunities to gain regional, national and internal media exposure at low cost and to be justified as a boon to tourism and tourism revenues. On the contrary, negative results unveiled in this study are: the ambiguous role in the public-private partnership (leading to conflicts between private and public interests); communities regarded only as venue sites; and citizen participation in bidding process is minimal. As critics have pointed out, providing festivals when people need bread is a dubious use of public resources (e.g. Eisinger, 2000; Law, 1993; Lenskyj, 1996). In turn, upon this basis, it provides a fair competitive platform for them; to quote Andranovich *et al.* (2001), "*The lure of the potential benefits is there, however, for cities willing to accept the odds.*" As a result, when it comes to future exploration on bidding for and organising the Games, a clear empowerment as well as responsibilities embedded into bilateral relations, obviously, will need to be raised.

Significantly, highlights drawn on potential impacts arise out of the sports mega-event are central to this study. The following table (Table 2.3) briefly presents possible reasons for host cities to stage sports mega-events. By its nature, various potential impacts of a sports mega-event are highly concerned, though there will be not possible to fully document all of them as different cases have their uniqueness. In this study, the effort will be dedicated to the understanding of what perceived impacts could possibly be explored and these being sought to sustainable solutions to buffer their negative influence in the planning process of the Kaohsiung 2009 World Games.

Table 2.3 Reasons for cities to host sports mega-events

Reasons	Authors
Economy	
1. Governments and municipalities to subsidize the construction	Getz (1991), Hall (1992), Lipsitz (1984), Okner (1974), Page (1990), Roche (2000)
2. Generation of new industry	Weed (2001)
3. Economic gain	Glyptis (1991)
4. Getting jobs	Andranovich *et al.* (2001)
Tourism	
1. Integral part of the tourism marketing strategies	Fredline & Faulkner (1998), Getz (1989), Mules & Faulkner (1996), Glyptis (1991), Ritchie & Smith (1991), Thorne & Munro Clark (1989)
2. Re-image to help build commercial and public awareness of a destination through the media coverage	Tourism Victoria (1997a, b), Weed (2001)
3. Re-imaging strategies to gain recognition and competitive advantage	Holcomb (1999), Pagano & Bowman (1995), Short *et al.* (1993)
4. To attract tourist revenues	Andranovich *et al.* (2001)
Physical/ Environment	
1. Legacy left in host city	Hall (1992), Higham (1999)
2. Improved infrastructure	
3. Benefits from mega events' environmental projects	Preuss (2004)
Social	
1. As a means of introducing people to sports participation and sustaining their interest	Glyptis (1991)
Psychological	
1. Increased local pride and community spirit	Hall (1992), Getz (1991), Ritchie (1984), Shultis *et al.* (1996)
2. Increased voluntarism	Shultis *et al.* (1996)
Political	
1. Media recognition for the host city	de Lange (1998)
2. Touristic mega-events have local/urban national and international significance	Getz (1991)

2.2.0. Section Two: The concept of sustainable development (SD) as a basis for organising sports mega-events

2.2.1. Defining sustainable development

There is no doubt that, in tourism-related research, the term 'sustainable tourism', like other complex phenomena, is hard to define. However, there is also no denying that its concept is rooted in that of sustainable development (Butler, 1998; Hall, 1998; Hinch, 1998). Within this logical development there has been wide support for the concept of sustainable development as '**development that meets the needs of the present without compromising the ability of future generations to meet their own needs**'. This was contained in the 1987 Brundtland Report to the World Commission on Environment and Development. In 1992 it was ratified by the Rio Earth Summit when the Agenda 21 agreement of the Summit was given to committed national governments to consider the environment in a wider scope of activities (Rotherham, 2005).

According to the United Nations' definitions, sustainable development is development that is balanced between people's economic and social needs and the ability of the earth's resources and ecosystems to meet present and future needs (Furrer, 2002). In other words, widely accepted is the three-dimensional nature of sustainable development: economic, social and environmental.

As depicted above, from 1987 Brundtland Report to 1992 Rio Earth Summit, their contribution is a solid basis whenever sustainable development is studied. Since the study is to explore sports events as a catalyst to trigger off sustainable development in a case, Local Agenda 21 is pursued intentionally. From this point of view, on the one hand, *Olympic Movement's Agenda 21* is chosen purposefully and on the other *Taiwan Agenda 21* serves to fit the studying case. Unfortunately, since Agenda 21 agreement was made, little progress has been made toward the exploitation of the inter-relationship between the three pillars of sustainable development: sport, culture and environment. In mega-events, especially the Olympics, much attention was paid to highlighting the importance of environmental sustainability. But the consensus is that by its nature, a mega-event is of multi-dimensional and international significance. and to accomplish the ultimate criterion of its sustainability, it is impossible to make a circuit without touching the

other dimensions. In this way, a debate to shed light on sustainable development in urban cities (where most mega-events take place) becomes apparent and imperative.

The Olympic Movement (1999), whose goal was mainly based on the Olympic Charter, is "To contribute to building a peaceful and better world", agrees with the analysis undertaken by the United Nations Conference on Environment and Development (UNCED), and sets its action in the framework of sustainable development. Inspired by the spirit of the UNCED Agenda 21, the IOC also made a decision that Olympic Movement should have its own Agenda 21. Basically it served as a guide, both theoretical and practical, for all members of the Olympic Movement. Therefore, in line with United Nations' Agenda 21, it is necessary to act in a climate of respect for different social, economic, geographical, cultural and religious contexts.

For this research, capturing and applying a broad definition of sustainable development into practical study will be criticized as unrealistic in the long run. The Olympic Movement's Agenda 21 will be mentioned here principally to meet the requirements of the research objectives to implement an action programme for sustainable development by means of staging mega-events in urban settings. A succinct but purposeful description of three objectives of the Olympic Movement's Agenda 21 is shown in Table 2.4.

Taiwan Agenda 21

Taiwan, with its limited natural resources and land, its dense population, its historical adverse political context and its potential for unavoidable natural disasters, makes the pursuit of sustainable development more necessary. In fact, for sustainable development it must follow the guidance of the United Nations General Assembly in 1987, the World Commission on Environment and Development (WCED) and the UNCED in 1992, when governmental and non-governmental delegates gathered to seek solutions to certain critical problems such as future resources depletion, environmental destruction and protection of the planet for future generations.

Table 2.4 Sustainable Development: Olympic Movement's Agenda 21

Objective: Improving socio-economic conditions	
Stronger international co-operation for sustainable development	**Description:** **A.** At regional level, the IOC and NOCs should establish agreements with political institutions and define joint actions enabling sportsmen and sportswomen to participate in regional advances towards sustainable development **B.** Sports goods industries should promote sustainable management of resources notably through the use of materials and processes that are compatible with such sustainable management of resources **C.** Minimize the environmental impact of their activities while assisting in socio-economic development.
Combating social exclusion	**Description:** **A.** The sports organizations should assist and encourage public institutions concerned with sports to promote sports activities by groups of individuals who are excluded from them for reasons of economic resources, sex, race or caste. **B.** They should encourage the priority development of sports infrastructure and equipment in the marginalized regions.
Changing consumer habits:	**Description:** **A.** Active steps will have to be taken to encourage the use of sports equipment produced from non-polluting or recycled materials and manufactured in ways that economize on raw materials and energy. A plan will be put in place to economize on energy expenditure associated with the practice of sport and the organization of major sports events. **B.** All the organizations and individuals linked to the Olympic Movement will voluntarily institute plans to reduce or control the Movement's expenditure of energy, adapted to specific economic and regional situations.
Health protection	**Description:** **A.** It is closely related to the sustainable development of our society. Health education covers notably the aspects of nutrition, hygiene, the combating of contagious and infectious diseases, the protection of vulnerable groups and the health of urban populations. **B.** The governing bodies of the Olympic Movement will intensify their efforts to combat doping, which is perverting the practice of sport and jeopardizing the health of those involved in it.
Human habitat and settlements	**Description:** **A.** In the industrialised countries, human settlements generate heavy pressure on the environment and on natural resources, whereas in the developing countries they fail to offer access to the raw materials and energy necessary for economic development. The sports movement should participate in this promotion and intends to do so through the example it can set by integrating this concept into sports facilities and the staging of major events. **B.** At major events, the organizers should aim to ensure that they provide better conditions for sustainable development than previous events staged under the same socio-economic, geographical and climatic conditions. The issues will be to increase involvement by the local population, improve the socio-economic and health benefits they derive from it, use less energy and fewer non-renewable resources, employ fewer dangerous products and release fewer polluting products into the air, water and soil. An environmental impact assessment will be conducted after the event. **C.** At these events, the creation of living accommodation for athletes and other members of the sports movement must be designed to provide a boost to local housing strategies, not forgetting the poorest members of society.
Integrating the concept of sustainable development into sports policies:	**Description:** **A.** Sports governing bodies will be increasingly attentive to integrating the concept of sustainable development into the policies, the rules and management systems which govern the operations of the sports world and into the sports activities and the staging of sports events.

Table 2.4 (*cont*)

Objective: Conservation and management of resources for sustainable development	
Protection of conservation areas and countryside	**Description:** **A.** Sports activities, facilities and events must be so arranged as to ensure the protection of conservation areas, the countryside, the cultural heritage and natural resources as a whole. **B.** They will also have to be sited in such a way as to minimize the environmental impact of the infrastructure associated with them, such as housing, traffic arteries, communications, electricity supplies, water and food supplies, and waste disposal and processing. The use of a site must go hand in hand with protective measures. **C.** Provisions must be made for compensation in the event of irreversible change. Sport practised outside of any sport facility and particularly in natural settings can be beneficial to the environment and can help in local development.
Sports facilities	**Description:** **A.** A special effort must be made to encourage the best possible use of existing sports facilities, to keep them in good condition and to improve them by increasing safety and reducing their environmental impact. **B.** The creation of new sports facilities must be confined to cases in which demand cannot be satisfied by using or renovating existing facilities. These facilities will have to comply with local legislation and be designed to fit in with the surrounding natural or man-made scenery.
Sports equipment	**Description:** **A.** The members of the Olympics Movement will be encouraged to give preference to sports equipment which is environment-friendly - for example, equipment that makes use of renewable natural products. **B.** To minimize expenditure on energy for the transport and distribution of goods, the use of local products will be encouraged. **C.** Equipment manufacturers will be encouraged to lay down clear and recognized ecological standards to help the consumer select environment-friendly products. The sports industry should obtain ISO certification for quality assurance and environmental management.
Transport	**Description:** **A.** Transport contributes to various environmental problems, including air pollution, the consumption of non-renewable energy and excessive use of and for highways and parking areas. To reduce such impact, the Olympic Movement intends to promote schemes aimed at encouraging non-polluting means of propulsion and the use of public transport. For short distances it will encourage means of travel which employ muscular strength and are associated with sport, such as walking or cycling.
Energy	**Description:** Access to energy is a motor of development, but its excessive, polluting or uncontrolled use mortgages the long-term future of that development and is contrary to the principles of sustainable development. In order to meet existing needs while ensuring that future generations have access to the energy they will need, the members of the Olympic Movement are committed, in the events they organize and their conduct in general, to: **A.** Reducing energy consumption where it is used excessively; **B.** Promoting the use of new technologies, equipment, facilities and practices that encourage the use of renewable energy sources and energy savings; and **C.** Encouraging access to renewable and non-polluting energy sources for areas without such power supplies.
Accommodation and catering at major sports events	**Description:** Because of the publicity given to such events, accommodation and catering arrangements for major sports events should set an example in terms of sustainable development. The aim should be to: **A.** Encourage structures in accordance with paragraph 3.1.6 of this Agenda 21; **B.** Observe hygiene conditions strictly; **C.** Make use of goods and foods that have been created with due respect for the development of the local population and the protection of the environment; **D.** Minimize waste by maximizing recycling of the products used; and **E.** Process waste that cannot be recycled.

Table 2.4 (*cont*)

Water management	**Description:** The members of the Olympic Movement are committed in their activities, the events they organize and their conduct in general, to: **A.** Encouraging and supporting world-wide and local activities intended to protect water reserves and preserve the quality of natural waters; **B.** Avoiding any practice that runs a risk of contaminating underground or surface waters; **C.** Ensuring that waste water generated by sporting activities is processed; **D.** Not jeopardizing general water supplies in a particular region simply in order to satisfy the needs of a sports activity.
Management of hazardous products, waste and pollution	**Description:** To take advantage of the creation of new sports facilities, the renovation of existing facilities, the creation of new infrastructure and the organizing of major events to remediate sites contaminated by hazardous or toxic products, pollutants or waste and to build upon successful practices and technologies used in previous Olympic Games to lessen pollution.
Quality of the biosphere and maintenance of biodiversity	**Description:** Aware of the importance of preserving the quality of the biosphere and the need to maintain biodiversity, the Olympic Movement condemns and opposes any practice, and especially any sporting practice, that: **A.** Gives rise to unnecessary or irreversible contamination of air, soil or water; or **B.** Jeopardizes biodiversity or endangers plant or animal species; or **C.** Contributes to deforestation or is prejudicial to land conservation.
Objective: Strengthening the role of major groups	
Advancement of the role of women:	**Description:** **A.** To pursue its efforts to promote women's sport; **B.** To treat traditionally female sports disciplines in the same way as all others; **C.** To promote women's education, particularly through the creation of regional sporting activity centres that also serve as educational centres; **D.** To develop social measures such as crèches or day nurseries to facilitate women's involvement in sport; **E.** To ensure equal media coverage and economic treatment of women's and men's sporting performances; **F.** To encourage the access of women to positions of responsibility in sport's governing bodies; and **G.** To develop joint actions with the international bodies concerned.
Promoting the role of young people:	**Description:** **A.** To encourage access to education and integration into working life for all young athletes; **B.** To ensure that, within sporting bodies, young people are involved in the taking of decisions that concern them; **C.** To make use of the capacity for mobilization demonstrated by young people in the activities arranged by the Olympic Movement; **D.** To condemn and combat the violations of human rights of which young people are particularly likely to be victims; **E.** To declare its endorsement of the United Nations Convention (Resolution 44/25) on children's rights and to apply it; **F.** To develop joint activities with specialist international bodies.
Recognition and promotion of indigenous populations	**Description:** **A.** To encourage their sporting traditions; **B.** To contribute to the use of their traditional knowledge and know-how in matters of environmental management in order to take appropriate action, notably in the regions where these populations originate; **C.** To encourage access to sports participation for these populations.

More specifically, 5 important documents were delivered in the "Earth Summit", informally named Agenda 21, the Rio Declaration on Environment and Development, the Statement of Forest Principles, the UN Framework Convention on Climate Change, and the UN Convention on Biological Diversity. As far as Agenda 21 is concerned, it needs governments to establish and implement sustainable development strategies, and to strengthen international co-operation to increase the wellbeing of all humankind. After the World Summit on Sustainable Development (WSSD) in September 2002, Taiwan's government released its "*Sustainable Development Action Plan*", simultaneously declaring the year of 2003 as its initiative towards sustainability in developing this country.

In fact, during the past few years, a government department has drawn up its own pragmatic action plans, for example: National Agenda 21, issue of *National Report on Biodiversity*, strategies for the reduction of greenhouse gas emissions, mapping out a *National Environmental Protection Plan*, and in particular the plan for developing Taiwan "Green Silicon Island" (Council for Economic Planning and Development, Executive Yuan, 2004). Furthermore, to put concepts of a sustainable Taiwan into practice, the Executive Yuan (the Cabinet) in 2002 set up a National Council for Sustainable Development under the governorship of the Premier, in accordance with the aim of preserving the vitality of its ecology for all time.

Of these action plans, following the basic principles and visions set out in Agenda 21, the government of Taiwan (ROC) has drawn up its "*Vision and Strategies for National Sustainable Development*", which mainly serves as the basic guidelines to keep up with the tide of international development in the twenty-first century. One of its directions has led to formulating local sustainable development indicators, which is largely due to environmental differences between certain areas around Taiwan.

As a result, to explore the sustainable development criteria that can be met by mega-events and that can also fit targeted cases, it is strongly felt that the adoption of Taiwan Agenda 21 framework (see Table 2.5) for this research is indispensable.

In defining sustainable development in this study, indicators from Agenda 21 will be a useful guide for developing sustainability indicators for a sports mega-event.

Table 2.5 Taiwan Agenda 21: A Conceptual Framework for National Sustainable Development

Sustainable Environment	
1. Nature Conservation	**Strategies:** A. Protect the Atmosphere B. Protect Water Resources C. Protect Biodiversity D. Protect the Oceans and Coastal Wetlands E. Protect Land Resources
2. Pollution Prevention and Control	**Strategies:** A. Prevent and Control Air Pollution B. Prevent and Treat Water Pollution C. Prevent and Remediate Soil Pollution D. Prevent and Mitigate Solid-Waste Pollution
3. Environmental planning	**Strategies:** A. Establish Reasonable Land Use B. Properly Utilize Agricultural Production Areas C. Preserve Appropriate Amounts of Natural Green Land D. Create Eco-cities and Eco-Villages
Sustainable Economy	
1. Green Industries	**Strategies:** A. Adjust Industrial Structures B. Develop Non-nuclear Clean Energy Industries C. Promote Proper Eco-tourism D. Develop Agriculture Leisure Industry
2. Clean Production	**Strategies:** A. Cultivate High-Grade Human Resources B. Reduce Resource Inputs C. Develop Green Technologies D. Strengthen Waste Reduction E. Implement Extended Producer Responsibility System
3. Green Consumption	**Strategies:** A. Promote Green Labels B. Encourage Green Purchase C. Promote Green Transportation D. Implement Green Taxation E. Promote Green Building
Sustainable Society	
1. Equity and Justice	**Strategies:** A. Protect Disadvantaged Groups and Ethnic Minorities B. Care for the Well-being of Future Generations C. Protect Environmental Human Rights
2. Public Participation	**Strategies:** A. Set up Citizen Participation Mechanisms B. Strengthen Cooperation with NGOs C. Collect and Disclose Timely and Relevant Information
3. Community Development	**Strategies:** A. Build Eco-communities B. Preserve Culture and Maintain Diversity C. Build a Community Security and Care System
4. Population and Health	**Strategies:** A. Promote the Health and Population Maintenance for Indigenous Peoples B. Enhance the Health of Disadvantaged Population C. Eliminate Environmental Health Risks D. Lower Personal Health Risks

Source: http://www.cepd.gov.tw/sustainable-development/eng/urban.htm

2.2.2. Defining a sustainable sports mega-event

A lengthy discussion has addressed the understanding of criteria needed for mega events and sustainable development. A further development of this will help define what constitutes a sustainable sports mega-event. Up to now, we have borrowed indicators both from Olympic Movement's Agenda 21 and strategic sustainable development of Taiwan Agenda 21. Obviously, when we talk about a mega event, it is inevitable to link it to event management. However, whilst it has developed to be a discipline of its own, it may be found neglecting some parts such as the exploitation of sustainable principles (Furrer, 2002). Hence, an attempt to elicit a specific definition of a sustainable mega event is urgent. Basic principles for the "greening" of mega events were given as generic guidelines by the World Conservation Union, the United Nations Commission on Sustainable Development and several partner organizations. According to these principles, the host organization should include (cited from Roper, 2006):

- Environmental best practices: reduce negative environmental effects by employing technologies and behavioural practices that minimise waste, energy, usage, and air and water pollution, by utilizing resources sustainable and conserving biological diversity;
- Social and economic development: select options that raise public awareness of environmental issues, involve communities in all levels of decision-making, create local jobs and stimulate urban economies;
- Education and awareness: communicate and explain greening plans and their benefits with the aim of changing public attitudes and future actions;
- Monitoring, evaluation and reporting: assess the effectiveness of greening activities before, during, and after the major event;
- Leave a positive legacy: ensure that both the short and long-term impacts of decisions and actions in producing a major event lead to a substantial improvement in environmental sustainability.

The goal of this study is attempt to build a practical framework for a sports mega-event leading toward sustainable development. At the early stage of thinking, a related framework should be set up, with the implication of Partasarathy's (2002: 297) defining sustainability which "*should be developed that does not apply a fixed character or a set*

of practices or technologies. Sustainability is not a property of a system or of one of its components. We need to look at sustainability as a process that incorporates complex environmental, social and economic phenomena, institutions and mechanism...." Hence, a sustainable sports mega-event should involve examinations of economic, social and environmental dimensions.

According to prior discussions, a sustainable mega event must meet the following requirements:

A sustainable mega event:

- Can make a contribution to the host city and regions in various sustainable aspects of economic growth, social equity, and environmental protection;
- Can envisage challenges in hosting cities and regions, and raise solutions to improving the quality of life for citizens;
- Can lead to management of all resources needed in such a way that its requirements can be fulfilled economically, socially, and environmentally whilst harmoniously maintaining socio-economic development to ensure the wellbeing of people and preserving cultural integrity, biodiversity and life support systems of the staging cities and regions;
- Can be geared to cities and regions' developing needs whilst including the citizens via consultation processes in pre-event session can effectively reduce negative impacts in any term; simultaneously it spreads and extends its benefits where possible.

From the above, we can be in an inductive way of giving more operational criteria for a sustainable sports mega-event, in response to the spirit of Brundtland Report, together with the Olympic Movement's Agenda 21 and strategic sustainable development of Taiwan Agenda 21, which should include three dimensions. They are:

1. Sustainable Economy:
   - Changing consumer habits
   - Investment
   - Employment

2. Sustainable Society:

- Human habitat and settlements
- Combating social exclusion
- Integrating the concept of sustainable development into sports policies
- Health protection
- Community-wide participation

3. Sustainable Environment:

- Protection of conservation areas and countryside
- Sports facilities
- Transport
- Energy
- Accommodation and catering at major sports events
- Water management
- Management of hazardous products, waste and pollution
- Quality of the biosphere and maintenance of biodiversity

2.2.3. The debate between event phenomena and sustainable development

Tourism is an extremely complex phenomenon with a multitude of economic, social and environmental impacts. However, tourism is often perceived as a 'smokeless industry' and a panacea for economic malaise and unemployment, but various impacts of tourism development have been neglected by either decision makers or the other involved sectors (Hall, 1991). This is true when the research focus of event tourism is changed from sustainable tourism into specific aspects of sports-led event tourism, but the vast majority of these studies are economic-dimension-related (Standeven and De Knop, 1999). According to Hall (1992), probably it was that their higher public profile makes them the most desired events. Therefore, more emphasis has been placed on measuring the positive and usually economic impacts at the expense of the overall impacts of the event (Hall, 1997). This has often proved to be the imperative consideration in seeking a solution to massive structural unemployment (such as the de-industrialisation of the "rust belt" in 1970s and 1980s Western society). From the turn of the Millennium to the present day, much thought has been given to this and the priority

has gradually moved to the more diverse needs of social equity, long-term economy and environmental conservation.

The real concern is how hosting a large-scale event can provide a sustainable path for a host city and, in regard to this concern, Hall (1992) believes that event tourism (for example a sports mega-event with its emphasis on local community involvement) coincides with the fundamental basis on which a sustainable development approach taken by tourism depends. However, in contrast to tourism in general, events often have more pronounced disruptive effects on locals because their impacts are more concentrated in space and time. The importance of community reactions to the impacts of tourism has been highlighted by the growing acceptance of "sustainable tourism development" principles as a framework for tourism planning and marketing (Fredline and Faulkner, 1998). As Inskeep (1991) stated, "sustainable tourism development is aimed at protecting and enhancing the environment, meeting basic human needs, promoting current and intergenerational equity, and improving the quality of life for all people" (p. 460). The relationship between sustainable tourism development perspective and mega events management is then equally treated. Events, to some extent, are regarded as a part of the destination's tourism mix, and the range of impacts caused by themselves mirror those coupled with tourism (Fredline and Faulkner, 1998).

Yet, it is argued whether the ideas behind sustainable development can offer a basis for maintaining the long-term growth of tourism (Dutton and Hall, 1989). Within this argument the strong belief is that such an approach can be achievable only if attention is also given to the social context within which development occurs. In this way, sustainable tourism development is appropriate for conserving the economic, social and physical resources and promoting the long-term goals of community. By this, it is further suggested that tourism development is economically, socially, and environmentally interdependent, so that it must ensure the full public participation and the conservation of the uniqueness and integrity of the destination (Hall, 1991).

Even if events, including sports mega-events, are viewed as a possible means of achieving sustainable development, past experiences have shown that it was poorly integrated into bidding agendae. As Hillman (1986:4) stated, "events are a proven animator capable of turning barren spaces into bustling places." Indeed, examples adopt

events to respond to 'de-industrialization' or to the need for 'redevelopment' as those in line of World's Fairs of 1962 in Seattle (the city of renewal), 1986 in Vancouver, 1988 in Brisbane (redevelopment of waterfront areas); in line of sporting events like the Olympic Games 2000 taking place in Sydney (i.e. waterfront and environment), and the 1991 World Student Games in Sheffield (i.e. urban regeneration and re-image). Since the 1970s, Western societies at various regional levels and particularly cities have consciously sought to promote themselves for bringing in extra capital by increasing the influx of tourists. Event tourism has been seen as a mechanism to regenerate urban areas via the creation of an attractive urban environment (Hall, 1997), rather than sustainable development thinking.

Higham's (1999) comment on 'sport as an avenue of tourism development' raised significant consideration. It is argued that the achievement of a match between the capacity constraints of host cities and the scale of sporting occasions presents the opportunity to achieve tourism success. It seems that therefore existing regular season sporting occasions comply with the principles of 'soft tourism' (Krippendorf, 1995) and sustainable tourism far more so than sports mega-events. In the sense of Higham, there seems to be an argument that sports mega-events, in terms of their scale, are inherently at a disadvantage of fitting the capacity constraints of host cities. Inevitably all staging cities pursue mass tourism as an element of sports mega-events. Conversely, if it is criticised as the antithesis of 'soft' or 'sustainable' tourism, then the thinking of how to shift from the adverse circumstances to the opposite obviousl, becomes imperative.

In fact, though the earlier case was executed with little consideration of sustainability, some researchers have examined several cases on behalf of sophisticated observers. The concept of sustainable development around sports mega-events earlier raised by Bramwell (1997) mainly adopted the Young's (1992) framework. It is recognised that sustainable tourism requires long-term rather than short-term thinking, wide participation and empowerment in decision-making processes (Jones, 1993), and equity and fairness. Nonetheless, it is evident that much attention attached to sustainable development has been given to the ecological sustainability only when bidding to stage a mega-event (i.e. Sydney). In response to the thinking and concerns, the researcher further exemplified the 1991 Sheffield Word Student Games. With Young's framework, three dimensions including economic efficiency, social equity and environmental

integrity are examined through different sections of pre-event, during the event and post-event. He stated that Sheffield's strategy of hosting the Games as a catalyst for tourism and urban regeneration had attracted many criticisms, which partly accounted for the paucity of the overall planning and of fully getting the message to the residents. He added (1998) that an integrated way is generally seen as important for sustainable development (Barke and Newton, 1995), and related issues proposed are (1) whether in Sheffield the different policy areas have been integrated with each other (e.g. sport, events, tourism and urban regeneration) and (2) whether this is part of a strategic planning process that also identifies clear objectives and practical means to achieve them.

Bramwell (1997) expressed concerns about sports mega-events (i.e. the Olympic Games, Sydney in particular) being unlikely to promote sustainable tourism development. This is debated more recently. As Doikos (2001) argued that large-scale events have not until now been part of the sustainability debate. Having a large impact and leaving a legacy has been generally phenomena for them. However, with a view to their scale and media pervasiveness, these events also have a huge potential for transferring a message of sustainability to a large audience. In addition, they are global businesses and represent a unique opportunity, and hence stand for the potential to communicate sustainability messages to, and encourage positive actions at diverse levels of governments, businesses, communities and individuals.

Environmental concerns of sustainable development around sporting mega-events like the Olympic Games have recently been emphasized. For example, the European Round Table on Cleaner Production calls on the International Olympic Committee to give a high priority to environmental sustainability issues in its decision to award the 2008 games. It is recommended that sports' governing bodies have a duty of care towards the environment and should establish appropriate policies, procedures, practices and performance indicators (Doikos, 2001). In fact the UNEP (United Nations Environment Programme) started its work on sport and the environment in 1994 when it signed a co-operative agreement with the International Olympic Committee. From then on, the environment became the third dimension of Olympic philosoph, alongside sport and culture (United Nations, 2003). One of its aims (the practice of the "Michezo programme") is to use popular sport such as football, golf, tennis and rugby *etc.*, to

promote environmental awareness. The programme will also ensure collaboration with organisers of such multi-sport events as the Asian Games, the All-Africa Games and the Commonwealth Games to promote environmental awareness (United Nations, 2003). The UNEP's Sport and Environment Strategy intentionally leads to the objectives of promoting environmental awareness through popular sports, the development of environmentally-friendly sports facilities and goods, and the integration of environmental considerations in sports (Toepfer, 2003). In fact, the bias in favour of environmental concerns in sports mega-events was totally displayed in the 2000 Sydney Olympic Games. Its successful strategy by connecting environmental issues (Global warming, ozone depletion, biodiversity, pollution, and resource depletion) to sporting events has made Sydney a prime example of an ecologically-sustainable city of the twenty-first century. To quote Toepfer (2003:2), the fact that "Sydney's success has, in effect, moved the goalposts for all future major sporting events. Those cities now have to include environmental sustainability as a cornerstone of their bids."

More recent research into West Indies World Cup Cricket 2007 stresses that investments in community tourism that are stimulated by this hallmark event can possibly be thought as part of a longer-term strategy to enhance the tourism industry and that this could also contribute to national development (Tyson *et al.*, 2005). The research mainly focuses on community tourism, which simultaneously borrows sustainable development through tourism or the event tourism. It is also believed that it helps diversify the tourism benefits and assists the meaningful economic participation of communities in the tourism sector. In this way, communities play a vital role in applying the sustainable development concept to that of sport tourism.

Getz (2004) also noted that the research on impacts and evaluation of management practices will be required to improve event sustainability. One notion given by him to event tourism is that though economic and environmental impacts of events or events tourism have been explored by many (e.g. Crompton and McKay, 1994; Getz, 1994; Crompton, 1999; Dwyer *et al.*, 2000a, 2000b), it still needs to highlight the process by which events help shape and define urban environments, particularly in the context of urban renewal and event venues. Keeping this appeal in mind, cities that stage them are themselves important. City development is a slow process. It was stated that this phenomenon with the notion of "less than 1 per cent of a city's physical

characteristics change during a single year" (Siebel, 1994:8, cited in Preuss, 2004). Despite this, urban environments can be boosted by the needed events, and *vice versa*. However, the premise is that sports mega-events can leave each host city a number of legacies without being possibly criticized as 'white elephants'. Preuss (2004) crucially analysed and argued this by exemplifying the Olympic Games. As far as those host cities are concerned, a lack of post-event demand should promote temporary structures. This concern, to a certain degree mirroring an easily underrated but fatal issue at the initial stage, is the sustainability of the venues. Additionally, the more recent mistakes of oversized facilities are well known as "If there is only a small post-event demand, the follow-up costs of the facilities lead to a permanent financial burden on the city" (Preuss, 2004:87). Preuss added that, with the need of a sports mega-event, huge changes could happen in a city through massive reconstruction. Specifically, when a host city needs its development through a mega-event, there are three fields needed to further discuss. The first field is 'Non-event related city development' (planned regardless of the Games); the second field is 'Event-related city development' (the structure needed for the Games, which is anyhow planned for the development of the city). At least the construction of Games-related facilities should fit in the economic and social development plan, the second field ('Event-related structure') being necessary only for the Games and not fitting the city's long-term development plans. But here comes the problem. The structure of the second field is socially and economically sustainable anyhow for the need of city development. The last field structure has to be maintained, and thus the city should try to pull in other festivals or events. What if there aren't enough of them to fill the agenda? What's worse, a further side effect could possibly incur great blame from taxpayers and even lead to a proportionately uneven resources allocation and use. A city that has successfully bid to host a mega-event needs to face lessons of how those infrastructures necessary only for the Games are in accordance with a long-term city development plan.

Occasionally, if it is explicitly complicated, why would a municipal city like to struggle for bidding to host it? A probable reason might be that those city governments wish to create 'new urbanity' (Siebel, 1994) or to become 'global cities'. This understanding is also shown in Siebel's analysis of sports mega-events that, in particular, showcase a city's history and provide massive and orderly ecological reconstruction and quality public space, and identify substantial globalization at a regional level. Sassen

(1996) considers that nowadays global cities, where located at a 'combined global and transnational-regional level', attract tremendous attention: primary industrial cities will be comparatively less significant, and event strategies to regain important status for those cities will be an effective means of eliminating the disadvantage. Nonetheless it further warns of risks from irreversible planning errors that take place owing to time pressure or infringements of social or environmental principles by special regulations (Lenskyj, 2000). Moreover, long-term urban development plans are likely to get crowded out by one simple 'carnival' scheme, and, in this context, Preuss (2004) believes that the matching of urban development plans and the event-related development plan is very important. A small part of the city might benefit from a single modern sports facility but, by contrast, the preparation of multi-sport events simultaneously develops the city in different areas and creates a larger impact upon residents.

So, if various long-term impacts are known to be possible from hosting mega-events, why do those planners not elaborate plans for urban sustainable development prior to sports mega-events or mega-events? Up to now in the reviewed literature, there have been few cases that link together one-off sports mega-events and holistic sustainable plans. Most planners prefer either economic or environmental projects and so it would seem even harder to achieve sustainability in a consuming urban destination with its multiple nature *per se*. Conversely, in fact, the argument should prove that the complex characteristics of a sporting mega-event in an urban setting requires an integrated strategy that includes as many interested groups as possible, and systematic thinking in particular in the way of simultaneously incorporating various aspects of social, economic and environmental scenarios.

Accepting the systematic approach for sports mega-events, on the one hand policy-makers and government officials should be part of a long-term planning and development strategy whose effects can only be felt and evaluated over time, and on the other hand, the matching of urban development plans to the event-related development plan are also extremely important (Dimanche, 1997; Preuss, 2004).

For this reason, the research identified that to understand the impacts of tourism events, a wide range of impacts and implications generated from hosting a sports-led

event such as the World Games must be considered. For another reason, sports-led tourism must be explored as to whether it can lead to sustainability.

2.2.4. "Triple Bottom Line" (TBL) as evaluation of events

As recently noted (Fredline, 2006), research on events and their 'sustainable management' in a region or area has seen a rise in use of the concept of the "triple bottom line" (TBL). This concept was developed by John Elkington in the 1980s when it was treated as a means whereby organisations can either create or destroy value in the economic, social and environmental spheres (Elkington, 1999a). Later, it has been broadened to summarise TBL reporting or sustainability reporting (Sherwood *et al.*, 2005), which is linked to the concept of sustainable development (Elkington, 1999b). Chernushenko *et al.* (2001) maintains that the organisation adopting TBL as strategies can benefit from a mutual reinforcement by meeting business, social and environmental goals. As a consequence, taking such a view requires an analysis of broad issues within economic, social, and environmental dimensions.

As mentioned earlier, major events such as sports mega-events can produce huge impacts to host areas in a number of aspects. However, the impact studies of events seem to prioritize economic issues. As such, a growing number of event researchers have called for an integrated model that can evaluate the resulting performance of events. It is then suggested that TBL approach bears the potential for this remediation and might offer a way forward (Fredline *et al.*, 2004; Hede *et al.*, 2003; Sherwood *et al.*, 2004; Sherwood *et al.*, 2005).

In terms of event assessment, Hede *et al.* (2002; 2003) were the pioneers by connecting the concept of the TBL to event evaluation (Sherwood *et al.*, 2005). Then Sherwood *et al.* (2004) suggested that more research was needed to establish specific indicators to assess the TBL impacts of special events. Fredline *et al.* (2004) placed more emphasis on the methodological challenges in practice when attempting to build such a holistic evaluation of event impacts. It is further suggested that, according to the study undertaken by Sherwood *et al.* (2005), there appears to be no attempt for impact studies of events (between 1970 and 2004) to take TBL approach as a framework for evaluation. With these gaps within TBL approach being identified, the challenge facing

future event researchers will be to develop a set of operational indicators to measure comprehensive impacts within host areas or regions.

2.2.5. Sports mega-event: Impacts of three dimensions on a host city

The impacts of mega-event have been mentioned in general earlier in Subsection 2.1.3. However, those specifically related to a major sporting event are central to this research and as such addressed and discussed here. The impact of sports mega-events can have huge effects in different periods (both positive and negative) and so the effective planning of the event is the key to ensuring achievement of minimum costs and maximum benefits (Masterman, 2004). As such, as noted in the importance of potential impacts, past sports mega-events can provide empirical evidence and lessons.

2.2.5.1. Urban regeneration as an integrated strategy associated with major sporting events, and the follow-up usage of event-related sports facility.

Urban regeneration is one of the significant benefits that major sporting events attract to the bidding competition for cities worldwide. In the case of Manchester 2002 Commonwealth Games, it has set an example that for the first time a major sporting event strategy was connected directly to the urban planning framework for the regeneration of the city (Gratton *et al.*, 2005). The objective was not only to ensure the development of derelict urban land but also to allow for a 'Sustainable Strategy' to be delivered. In this way, newly-built sports facilities can leave a legacy for local people, particularly with respect to future health improvement and increasing job opportunities (Manchester 2002 Ltd, 1999). 1996 Atlanta Olympic Games also adopted a similar strategy in which downtown areas were revitalised with plans to create a new stadium, college sports facilities, residential housing and Centennial Park (Roche, 2000). Similarly, the athletic villages constructed for major sporting events can trigger gentrification of part of the host cities (Solberg and Preuss, 2007). Examples of the upgrades of neighbourhoods around the villages can be found at 1988 Seoul, 1992 Barcelona and 1996 Atlanta Olympics. As suggested by Masterman (2004), urban regeneration strategy can lead to local community support and political and financial assistance in bidding projects if wider benefits of regeneration projects and new facility provision can be well delivered. Briefly, major sporting events drive powerful effects in

many areas such as housing, labour, recreation, and transportation (Siebel, 1994).

The post-Games use of various sports facilities is also at the core of any economic impact on a host city. For example, Liao (2006: 108) summarised post-Games use of the Olympic Village between Los Angeles 1932 and Athens 2004, as illustrated in Table 2.6. Most of them were converted into apartments or houses for the use of residents and students. In general, Preuss (2004) has classified the post-Games use of sports facilities into four types, including 1) identical usage of the facility, 2) alternative usage of the facility, 3) mixed forms of follow-up usage, and 4) temporary facilities. As can be seen in Table 2.7, the utilisation of sports venues after Games is very flexible.

Table 2.6 Post Games use of the Olympic Village, Los Angeles 1932-Athens 2004

The Olympic Games	Post-Games use
1932 L.A.	demolishing
1936 Berlin	Army officer billet
1952 Helsinki Kapyla Village Otaniemi Village	 Social housing Student dormitory
1956 Melbourne	Social housing
1960 Rome	Social housing
1964 Tokyo	Hostel/demolishing
1968 Mexico City	Social housing
1972 Munich	Social housing
1976 Montreal	Social housing
1980 Moscow	Social housing
1984 L.A. (USC Village, UCLA Village, and UCSB Village	Student dormitory as before the Games
1988 Seoul	Commercial housing
1992 Barcelona	Commercial housing
1996 Atlanta	Student dormitory
2000 Sydney	Commercial housing
2004 Athens	Commercial housing

Sources: Adapted from Liao (2006: 108)

Table 2.7 Follow-up usage of Olympic facilities

Types of follow-up usage	Description	Type of venue
Type I: Identical usage of the facility	These are the sports facilities which are available for school sport, sports clubs, public swimming pools, professional team sport, a university sport or training centre of a national federation.	small halls; small stadiums; outdoor; green areas velodrome, swimming pools
Type II: Alternative usage of the facility	Converted from other than the original function	Multi-purpose hall; fair hall; convention and congress centre; outdoor; green areas; Olympic villages; media villages
Type III: Mixed forms of follow-up usage	These are the multi-functional sports arenas. They can be transformed according to the needs of the organisers of other mega-events.	Olympic stadium; Olympic hall
Type IV: Temporary facilities	In case a facility is not needed in future, technology enables huge temporary venues to be built	Olympic stadium; small halls; small stadiums; outdoor; green areas; velodrome; swimming pools

Sources: Adapted from Preuss (2004: 89-90)

However, investments made in mastering projects related to major sporting events cannot always guarantee a positive economic return. Gratton and Taylor (2000) exemplified the 1976 Montreal Olympic Games as a lesson that a debt of up to £692 million was left behind because of the Games. Another example is the Sheffield 1991 World Student Games. The event incurred a loss of £10.4 million (Bramwell, 1997) and the city will not have paid off the mortgaging of its debt until 2025 (Wallace, 2001).

2.2.5.2. Tourism as a key aspect of economic impact/event business leveraging

The positive impact of hosting major sporting events can be very significant and can thus produce a relative surplus as reward to host cities. What is more important for many host cities is not only the return on the original investment in the operation of the event and future usage of the sports facilities left behind but also the inward commercial investment, tourism and new business (Masterman, 2004).

Tourism as a key aspect of a major sporting event is described as the 'sleeping giant' because the event is regarded as good potential for driving tourism as well as attracting huge amounts of fresh money to the host cities (Preuss, 2004: 26). As Masterman stated (2004: 83), for example, the decisions made by Sheffield's Event Unit

on the staging of an event are directed to the objectives of enhancing the tourism profile. As a consequence, tourists are possibly attracted to future events and will boost the local economy. Kronos (2001) has provided the follow-up evidence. His study on the economic impact of sports events in Sheffield between 1991 and 2001 shows that the event strategies have attracted 58,000 additional visitors to Sheffield, yielding an actual gross expenditure of £3,823,000 average per year.

Solberg and Preuss (2007) maintained that a tourist destination can be positioned through major sporting events. Furthermore, Chalip and Costa (2006) suggested that to raise a policy for strengthening profile as an interesting tourist destination is necessary for those destinations aiming to attract more tourists. In this regard, Smith (2006) evaluated the image effects of strategies deployed by Birmingham, Manchester, and Sheffield. The research was undertaken by carrying out semi-structured interviews with a representative sample of fifty-four potential tourists to accumulate evidence. It is concluded, in general, that major sporting events seemed to have successfully promoted positive connotations ('modernity', 'progress', and 'vitality') amongst potential tourists. The findings further suggest that there are positive implications for cities taking sports events strategy as re-imaging instruments.

Strategic planning of an event is also important through its influence on the sustainability of an event. Pre-event and post-event strategies should be highlighted and included at the earliest possible stage. For the Sydney 2000 Olympic Games, for example, issues such as visiting journalists, event media programmes, sponsors and industry programmes were targeted and included in pre-event strategies, and this suggested that such a strategy resulted in an increase of awareness of and interest in the destination. However, further strategic consideration is still required if longer-term benefits are expected (Masterman, 2004). In this context, O'Brien (2006) maintains that Sydney 2000 was the first case in which public money involved in a programme aimed particularly at facilitating longer-term business opportunities. The public sectors then launched an initiative whereby the Business Club Australia (BCA) was to leverage the global Olympic focus on the host city to facilitate international trade. As Chalip and Leyns (2002) noted, sports mega-events involve considerable demands on public subsidies and public services. The evaluation of event business leveraging can thus better legitimize such claims for public and private sector funding (O'Brien, 2006).

2.2.5.3. Job opportunity as a key issue in impact studies of major sport events

Sports mega-events are seen as having a significant employment effect on cities or regions staging the events. Issues of employment generated through major sport events such as the Olympic Games are mostly so addressed in two ways: duration (short and long-term) and sectors (e.g. tourism, construction, *etc*). Further to this, according to Preuss (2004: 252), the number of jobs is dependent on the varying amount of work in the schedule for preparing and staging the Games. Their distribution of Games-related work is basically categorised into four phases:

- Phase 1: the bid phase, which induces additional work
- Phase 2: the preparatory phase, in which additional work is increased
- Phase 3: the Games year, in which shortly after the Games the work effort drops sharply
- Phase 4: after the Games, in which jobs created are induced by the Games-related economic impact

Jobs related to Games are specifically created in the various industries such as the construction industry, hotels and restaurants and the mass media, and by the organisers of the Games (Heinemann, 2003). More specifically, during the Games, the majority of jobs are generated in the service, trade and security sectors: comparatively lasting jobs are likely going to sectors such as the leisure industry, tourism, transportation and telecommunication where investments are made (Preuss, 2004). The duration of jobs is also the most important issue that is likely to be discussed and that is particularly relevant to the situation whether the Games generate short-term or long-term employment. But it appears to be assumed that sports mega-events can create only short-term jobs (Delpy and Li, 1998), and in response to this point Heinemann (2003) indicated that whether long-term jobs are generated or not will, to a certain degree, depend on the effects of image and the increase of tourism that the event brings about.

Empirical cases can provide insight into related issues. In the examination of economic impact at 1994 Lillehammer Winter Olympics, Spilling (1996) indicated that activity induced by the Games can play a role in stimulating the development of new business and industries that have been extended beyond the Games period. They are

particularly associated with the tourism industry. Other business was found to be directly triggered by the Games in the same way, although to a lesser extent than in the tourism industry. Investigation into jobs created at the Games also highlighted the same perspective. One of the results points to a total 'permanent' employment effect of about 500-600 person-years immediately after the Olympics (within half a year). Of the estimated figure, around 400 were created directly by the Olympics, among which the most significant (some 150 person-years) were going to the tourism industry, followed by businesses operating Games-related facilities, with some 70 person-years probably being attributed to the Olympics. The others were involved in a variety of businesses, for example manufacturing, producer services, mass media and education, and cultural institutions.

Another case is Manchester 2002 Commonwealth Games. A comparison study of the economic impacts in the City of Manchester has been undertaken by Manchester City Council before and right after the Games in early 2003 (Masterman, 2004). A predicted figure of total direct permanent and 10-year equivalent jobs in a 1999 feasibility study was set at 4,494. Actually, in early 2003, when the first impact study was carried out, the Games had achieved the target and beyond, with the number estimated at 6,100. Net additional direct permanent and 10-year equivalent jobs to Manchester was also investigated, showing that compared to the predicted number of 988 jobs prior to the Games, the objective was accomplished, with the figure jumping up to 2,400.

A study investigating the perceived economic impact prior to the 2009 Kaohsiung World Games indicates that the host residents do not seem to perceive significant employment opportunities associated with the Games (Ma *et al.*, 2006). According to the Department of Budget, Accounting and Statistics, Kaohsiung City Government (2006), the unemployment rate of Kaohsiung City in 2005 was around 4.2% (very slightly above the national average of 4.1%). Further speculation surrounding this may be that many jobs generated during the construction period will go to foreign labourers and others.

2.2.5.4. Hosting sports mega-events as an opportunity to change consumer habits

As examined in past cases, there is little evidence to show that staging a major sporting event is an opportunity to change consumer habits. The Torino 2006 Winter Games is taken as an example. In the examination of voluntary environmental activities detailed in the Toroc Sustainability Report (covering 2003-2006), Frey *et al.* (2007: 16) found that the sustainable behaviour of its local economic partners was encouraged via the 'Green Procurement Project' and accordingly the approved suppliers of goods and services gave serious consideration to the ecological quality of their products. Furthermore, this project also facilitated the promotion of a green procurement system amongst a partnership of public sector and local economic organisations. Another project promoted and implemented the 'European Eco-label' for hotel tourist services, which received support and assistance to obtain the certification. This case shows the potential of promoting environmental awareness in order to change consumer habits (promoting green labels and encouraging green purchase) as one aspect of economic sustainability at sport mega-events.

2.2.5.5. Social dimension: issues regarding social needs, social exclusion, community participation, cultural development and health

Hosting sports mega-events can raise wider issues that are seen to be socially beneficial. It is highlighted that, for example, sports mega-events such as the Olympics can strengthen or create an identification and pride among the citizens of the host city. Meanwhile they can generate value in the promotion of community participation and other benefits (e.g. community creativity and well-being) as Shipway notes (2007). In addition, sport can play a key role in increasing communication and information exchange between different levels of groups (Preuss, 2004). As such, the social network of city residents can thus be tightened (Cowie, 1987, in Preuss, 2004: 80). Equally important is the involvement of the local population in the process of planning major events. As indicated by Hiller (1998), major events are usually regarded as an 'imposition' from outside, which is why community involvement is of particular importance to event planning. Also considered as one of the most important areas of a mega-event legacy is the social legacy, an integral part of which is the degree of consultation and communication of Games-related developments to the host

communities throughout the period before, during, and post the Games (Shipway, 2007). The significance of community within the host city was stressed at the 2002 Legacy Conference by IOC president Jacques Rogge, who urged that the staging of the Games should ensure a positive long-term legacy generated to be delivered to the host communities (Shipway, 2007: 120).

Leonardsen (2007) indicated that the phenomenon that the ordinary citizen is gradually seen as a legitimate voice in the planning process has recently received more attention. This is because the staging of sports mega-events usually needs to involve a mountain of public money. As a consequence, stakeholder involvement and public participation is an essential criterion for the justification of success in holding a sports mega-event. Equally important, therefore, is local community consultation. Seeking views from local people, "strengthens networks of trust and community engagement that make it easier to solve problems that affect the local context" (Frey *et al.*, 2007:12). In fact, the importance of ensuring long-term community benefits has been stressed in the OGGI programme, with five categories being critically identified and listed as social indicators (public consultation and participation, pressure groups, community centres and associations, public referenda connected with the Olympic Games, deferment and abandonment of public policies, and consultation with specific groups) (Cashman, 2006: 219).

According to the detailed study undertaken by Bramwell (1997), Sheffield 1991 World Student Games, to some extent, achieved objectives of social equity. This is usually seen as vital for sustainable development more generally. Prior to the Games, several projects were developed to encourage the involvement of certain groups, e.g. ethnic groups, young people, and the disabled. Sports facilities built to adapt to social needs, especially for local residents, are also regarded as one aspect of social sustainability. For example, the city's swimming pools were built to meet the needs both of long-term use by local people and for hosting competitive sports at international standard. This provision was evaluated in the consultancy reports as a means of encouraging increased participation by local people and to bring health benefits to the wider community (Darke, 1992; Pickering and Torkildsen, 1988, in Bramwell, 1997: 17). Furthermore, 'combating social exclusion' was also taken seriously in the selection of competition site. As Pearson (1987) observed, three large new sports infrastructure

and facilities were built intentionally in the Don Valley area, in which an industrial area was suffering from urban decay and was accessible to socially-disadvantaged communities and the comparatively marginalised regions. The Manchester 2002 Commonwealth Games initiated 'Active Sports Talent Camps' in nine sports, which involved 10,000 young able and disabled participants to achieve a lasting legacy for sport (Westerbeek *et al.*, 2005). London 2012 revealed its long-term planning strategy as part of essential role for social inclusion (LOCOG & ODA, 2005a). By staging the Olympic Games in the most deprived and poorest areas in London, the Lea Valley is expected to be regenerated and to benefit from a legacy left for the community.

There are challenges, too, in staging a major sporting event. Negative impacts might be that, because of the time constraints, the interests of socially-weaker groups are frequently ignored. Socially-deprived population groups are especially affected by the Games-related schedule (Cashman, 2006). Also, disadvantaged groups may be forced either to pay higher rents or to relocate. Lenskyj (2002) was concerned that the cost of funding a sports mega-event squeezes out a city's budget that might otherwise be used for housing, health, welfare and other social programmes. As Preuss (2000) observed, sometimes this will give urban planners an excuse to evacuate or relocate the people living close to construction sites or competition venues (e.g. 1996 Atlanta, 1988 Seoul, and 1972 Munich). On the other hand, although community-wide participation and empowerment in the decision-making process is important and can usually be fulfilled via consultation to probe public opinions prior to the Games, the Sheffield Games, for example, did not follow the similar idea (Roche, 1994). Consequently, this was explained as an important factor that affected the main local political party negatively (Bramwell, 1997). Likewise, in terms of hosting the 1988 Olympics and the 2002 World Cup, Kim *et al.* (2006) argue that the residents' dissatisfaction with the actual benefits (e.g. economic benefits) may be attributed to a lack of host residents' involvement in the planning and decision-making process.

The major sporting activities such as the Olympic Games can "represent not only a sports event but also a focal point for celebrations and cultural exchanges" between visitors and the host community (Shipway and Brown, 2007: 21). The IOC has recognised cultural events to be an 'essential element of the celebration of the Olympic Games' (IOC, 2002, in Masterman, 2004: 76). The Salt Lake City 2002 Winter

Olympics included 60 performances, 10 major exhibitions and 50 community projects in its Olympic Arts Festival (Masterman, 2004). For the Manchester 2002 Commonwealth Games there were 112 'Cultureshock' projects developed to engage with the local and regional communities (Manchester City Council, 2003). However, MacAloon (2003) was concerned about whether the effect can be retained over a longer term if there is no follow-up development. Masterman (2004) latter suggested that to introduce local culture into event-related activities is a possible way to achieve the longer-term objective. Garcia (2003) urged that an understanding of local cultural contexts and values can offer an ideal platform for event promotion. Moreover, to ensure more sustainable and meaningful legacies, Shipway and Brown (2007) indicate that the cultural programme should reflect and incorporate the local community, whilst Garcia (2004) urges that it should be representative of the local and regional host community. At the Sheffield 1991 World Student Games, for example, this became a legacy of an annual Children's Festival and was further promoted as part of tourism mix. More specifically, the festival successfully linked with schools and communities, with more than 4,500 children involved two years after the closure of the Games. Clear objectives were set to enhance the psychological benefits (i.e. confidence and self-esteem) of children from poorer schools, to involve the wider communities in Games planning and to draw more attention of parents to cultural events (Bramwell, 1997).

Sports mega-events are increasingly reliant upon a large number of volunteers to deliver event service (Cuskelly *et al.*, 2006). Without their involvement sports mega-events such as the Olympics could simply not have been arranged on today's scale and scope (Cuskelly *et al.*, 2006; Green and Chalip, 2004; Kemp, 2002). Similarly, numbers rose significantly during the 1980s (Green and Chalip, 2004), but the scale of volunteer participation will vary according to the event. For example, multi-sport events such as the 1996 and 2000 Olympic Games have recruited more than 40,000 volunteers respectively. At the Torino 2006 Winter Olympics only half that number (20,000) is required, and a comparatively small number of volunteers (approximately 15,000) were involved in the Doha 2006 Asian Games. More than 4,350 volunteers were recruited at the Akita 2001 World Games (Social Affairs Bureau of KCG, 9 March, 2007), being recognised as a huge cost-saving for the event. Therefore it is important to understand the motives driving individuals to volunteer at sports mega-events as indicated by Fairley *et al.* (2007) and thus help to form volunteer recruitment and retention strategies.

The earlier study by Caldwell and Andereck (1994, in Fairley *et al.*, 2007) identified three categories of motivations for individuals volunteering in a recreation setting, these being purposefulness (doing something useful to help society), solidarity (social interaction, group identification and networking), and material incentives (tangible rewards). The motivation to volunteer at a special event or sport event is unique and was found to be different from those in other types of volunteering contexts (Fairley *et al.*, 2007). Kemp (2002: 109) recognised similar phenomena and found that volunteers at sports mega-events such as the Olympic Games are largely motivated by "pride in their country and its culture, social contact and friendship and a desire to feel valued and needed by society at large by being employed even if it is unpaid". Also, younger volunteers at most major sport events found that they were more motivated by 'social factors' and 'the acquiring of future employment skills' rather than national pride and self-worth issues. This is consistent with the findings in Chow's (2002) research on motivation and willingness for college students participating in voluntary sporting activities in Taiwan, showing that the 'self-enrichment' and 'pursuing knowledge and skills' are the strongest motivations. Fairley *et al.* (2007) investigated the motives of people who volunteered at the Sydney Olympics and who were prepared to travel to volunteer at the 2004 Athens Olympics. The findings suggested that volunteers of this kind were motivated by "nostalgia, camaraderie and friendship, Olympic connection, and sharing and recognition of expertise". On the other hand, Coyne and Coyne (2001) studied volunteers at an annual professional golf event basing at the same destination. They found that the first-time volunteers were more motivated by financial rewards whilst veteran volunteers were more by social relationship. However, Fairley *et al.* (2007) argue that this result was yielded on a particular basis which is very different from sports mega-events such as the Olympic Games.

Apart from the issue of motivation, Ritchie (2001: 156) found that the most valuable benefits of staging major events may be psychological or social in nature. In the examination of the 1998 Winter Olympics it is further added that 'the strengthened social structure related to the strengthening of community volunteerism were regarded as perhaps the most valuable of all the legacies left behind...' (Ritchie, 2001: 156). This legacy has strengthened social networks amongst people living in the city of Calgary and that have 'inspired the desire and confidence to pursue the hosting of more mega-

events' (Ritchie, 2001: 160). In line with this, volunteer programmes are confirmed to relate to the manner in which sport is adopted to combat social exclusion amongst host communities (UK Sport, 2001).This is also central to the Manchester 2002 strategy as the development of a socially-inclusive society. Another challenge is the management of volunteers at major events. Getz (1991) suggests that the management of short-term events is required to be centred on resource acquisition (recruiting volunteers) and attracting community support (within the host community). On the whole, in this context, the involvement of host communities in volunteering at sports mega-events matters in issues of their long-term impacts and success.

Coalter (2004) views the staging of sports mega-events such as the Olympic Games as an opportunity for civic engagement, community-wide participation and empowerment and for accumulating social capital in the host community. Shipway (2007) argues that the Games (i.e. London 2012) can act as a catalyst for delivery of a legacy of driving change, but importantly schemes associated with the Games must be deeply implanted in local policies so that longer-term benefits can pass down to the local needs of host communities. In this sense, if a long-term goal of a host city is to be achieved via the event strategy, integrating the concept of sustainable development into event policy must be addressed efficiently at planning stage.

The Olympic Movement recognises that the protection of health is closely connected with the sustainable development of a society. In this context, health education has been seen as an integral part of sports education. The effort, for example, was made at the Torino 2006 Olympics. One out of five thematic areas in the 'Olympic Education Programme' was aiming at the youth and to inform them on how to correctly approach sport, staying away from doping, and building good eating habits. These were carried out through an example of the project 'School in Movement'. There, teachers and students worked together to cultivate good habits and promote a culture concerning the values of a healthy and active life (Frey *et al.*, 2007:15). However, the result of this practice was not clearly articulated to show how successful and for how long the project helped in health protection issues.

As noted in past Games (for example the Barcelona Olympics) it is highlighted that increasing participation in sport and promotion of public health are significant

elements in the redevelopment and enhancement process in terms of its major investment (Wang and Theodoraki, 2007). Also Wang and Theodoraki (2007) have placed importance on public health and the effects of mass sport participation (i.e. workers' games; farmers' sports; school sports; community sports),and are concerned that insufficient attention is paid to these issues within impact studies of events. Thus, to fill the gap, a study was initiated to evaluate the impact of the preparations for the 2008 Olympic sailing regatta on mass sport development in Qingdao, the conclusion being that the planning process of the 2008 Olympic Games generated a positive impact within urban areas and significantly improved national health standards and sport participation rates. In the examination of sporting impacts at Sydney 2000, Cashman (2006) mentioned that one of five potential sporting outcomes for any Games is that an Olympic Games will encourage greater sports participation and provide the opportunity to improve health and fitness amongst the community as a whole. This conforms with Pierre de Coubertin's belief that the revival of the Olympic Games would lead to greater physical fitness, especially of youth. In this respect Cashman was concerned about a dearth of studies on community-wide sports participation post-Games (both short- and long-term). After examining related studies on the 'trickle-down effect' (the flow-on effect from elite to community sport), he concluded that 'there were very little, if any, changes to sports participation at the community level, with the exception of a short-term bounce after 2000' (2006: 187). Another good example of health protection initiative is the London 2012 Games. The hosting of the Games has been viewed as the opportunity to approach the social problem such as health inequalities. In fact, this has greatly impinged on east London's communities, in which current residents living near the Olympic Park have a life expectancy seven years shorter than people living in the centre of London. To a certain extent, the selection of the Olympic Park site was profoundly based on such a consideration. As such, it is expected that the increasing number of good-quality open space and sporting facilities in the local area will be to boost public health as part of an integrated regeneration programme (LOCOG and ODA, 2007). Furthermore, with the importance of healthy lifestyles being recognised as an aspect of sustainability, key areas for action in the planning process encompass, firstly, the development of programmes across London and the UK to increase physical activity, and to boost participation in sports and physical activity. Secondly they include promoting safe and sustainable food during the Games. As Shipway (2007) notes, the former is an underlying challenge that could leave a real legacy to get more people

involved in sport and physical activity and improve their health. The above discussion exemplifies the impacts regarding health protection issues at the past Games as well as the forthcoming ones, which demonstrate the way to approach related challenges during the planning stage.

2.2.5.6. Environmental dimension

The growing concern about organising major sporting events is drawn to the impacts of environmental quality caused to the host city. In terms of the Olympic Games, environmental issues were not added in the Olympic Charter until 1991 (Lenskyj, 2000). This dimension was confirmed as the third column of Olympism in 1995, apart from sport and culture. As Masterman (2004) stressed, this is the age of concern about environment; there is a key part major sports events can play in raising operational policies that can lay down environmental legacies for the host city for the future. Cases like Sydney 2000, Beijing 2008, and London 2012 have followed the similar ideas by integrating the concept of 'Green Games' into Games policies. More recently, the Tokyo 2016 Olympic Games Bid Committee unveiled its dynamic concept with green Games located in the very centre of Tokyo and its CEO and Chairman, Dr Kono said (Sportbusiness International, 15 January, 2008):

> "...the public awareness of, and participation in, Tokyo's drive to protect and enhance the environment and the long-term improvement of the city environment through Games-related policy and programmes as key legacy benefits."

The concept of sustainable Games, however, covers a wide range of challenging sustainability issues concerning sports facilities, transport, energy, management of water and waste, and maintenance of biodiversity.

2.2.5.6.i Sports facilities, transport and energy

Masterman (2004) has recognised the importance of planning after-use and involvement of the after-users for a facility if an objective of long-term successful running is considered. Barcelona 1992 demonstrates an example as part of long-term

planning strategy of city development. As early as mid-1980s, 'Barcelona 2000' strategy has included Games-related facilities (Olympic Village, sports stadia) and urban infrastructure (a new airport, communication towers). In accordance with the strategy, two organisations were set to manage the legacies. One was to bid and organise other major events and the other was to promote sport participation. Roche (2000) commented that this strategy was very successful because it ensured after-use by the public and achieved the development of private and public sector initiatives in facilities management for longer term. Chernushenko (2002) stressed that to create successful legacies from sports facilities, the concepts of conservation and environmental protection need to be embedded in their design. His concern about sports facilities is that there are too few designs for new stadia taking into account issues of waste reduction and reduction of resource consumption.

There are several points about the sustainability of a newly-built sports facility that Masterman (2004) concerned the most. Firstly, timing for a host city of major sporting events at planning phase to pose a strategy that can deliver a successful legacy is worth concern. Torino 2006 Winter Olympics, for example, has already addressed plans for after-use of some new erected facilities two years prior to the Games. Another case is Athens 2004 Games. The decisions on long-term use of sports facilities have been made before bidding because they were part of city development strategy. In terms of London 2012, its legacy and benefit plans have been initiated from 2006. According to cross-cutting action on sustainability for legacy planning, London 2012 have committed to the use of higher proportion of existing and temporary venues than in recent Games history. This is to minimise construction impacts and to avoid building facilities without after-use. Secondly, adaptability of design is a key factor for longer-term use of a sports facility (Isozaki, 2001). Standards for many kinds such as health, safety and the popularity of sports may change over time. As such, it is suggested that good design will allow for the 'early planning of after-use and identification of after-users' (p. 72).

Sports mega-events frequently face transport challenge. Empirical cases can evidence this point. Ma *et al.* (2006) mentioned there is a high expectation of traffic congestion amongst host communities in Kaohsiung City (in Taiwan) prior to the staging of the 2009 World Games. It is suggested that this has possibly arisen from

previous studies. For example, traffic congestion was a frequently expected problem before the South Korea 2002 World Cup and the 1995 Nordic World Ski Championships in Canada. It then actually became a serious problem during the Games (Kim *et al.*, 2006; Kim and Petrick, 2005; Twynam and Johnston, 2004). Solutions to potential challenges at the earliest possible stage are therefore required for delivering sustainable transportation during and after the Games. In this context, Chernushenko *et al.* (2001) indicated it was critical to consider the appointment of an event co-ordinator to organise transportation for participants (e.g. competitors, officials, media and spectators) between a selection of competition sites (i.e. locating sports facilities close to public transport systems, satellite car-parking, cycle lanes and walkways at competition sites), the reduction of the number of private vehicles (e.g. banning private cars from the immediate vicinity of an event and not providing parking on site), providing alternative mass commuting tools (e.g. shuttle buses) and offering participants motives to use public transit (e.g. offering special prices on public transit tickets to those travelling to one of the competition sites).

The cases of Olympic Games, the London 2012 and Sydney 2000 Olympic Games highlight the need to apply the concept of sustainability into transport planning. For the Sydney 2000 Olympics, its 'Environmental Guidelines' relating to transport plan follow two points: A) Public transport being the only means by which spectators will be able to directly access events at major Olympic sites, and B) satellite car-parking venues being established so people can transfer to trains, buses and ferries for access to Olympic sites (Cashman, 2006: 201). London 2012 has unveiled that sustainable public transport is an integral part of the Olympic Transport Strategy, which will focus on minimising CO_2 emissions due to Games-related travel during the Games (LOCOG and ODA, 2005a). Furthermore, the transport plan for London 2012 relating to environmental issues outlines that in order to minimise the transport challenge, half of all the Athletes will base within the Olympic Park, with 80 per cent of them being accommodated within a 20-minute journey to their venues. One of the key objectives for the Transport Strategy is set to aim to achieve 100 per cent of ticketed spectator travel to competition venues by public transport or by walk/cycle modes (Steer Davies Gleave, 2006: 6). Other examples of transportation strategies at major sporting events such as the Sheffield 1991 World Student Games demonstrate the implications for future Games. At Sheffield, some of the largest facilities for the Games were linked to the city

centre by a new tram line designed to reduce the number of private vehicles entering the city centre (Bramwell, 1997).

The energy issue is fundamental to environmental problems today (e.g. CO_2 emissions). In terms of sport facilities, whilst designing for sustainability may be costly, the implementation of energy in efficiency can be a way to save more in the long term (Masterman, 2004). Chernushenko *et al.* (2001) suggested several main respects of energy management. Firstly, the most important part is to improve the efficiency of the heating, ventilation and air conditioning system (HVAC), which can account for around 60% of energy consumption in the average building. Key steps for HVAC systems to consume less energy are to reduce demand, improve efficiency or upgrade to alternative technologies. Lighting, secondly, can be utilised in more efficient ways, including a reduction in the use of lights, improving lighting systems, and maximising as well as making good use of natural light. To reduce the energy consumed to heat water is also good for environment and a way to save money. UK Sport (2005) published the guide for staging major sports events, and its environment section has been prepared to help event organisers to stage environmentally-responsible sports events. Energy efficiency has been identified as an area of potential cost savings and environmental benefits. Further, six measures have been suggested, including: implementing an energy inspection of the venue to identify potential savings; erecting low-energy lighting systems; introducing activators/timers on light switches; improving insulation, heating efficiency, ventilation and equipment use; ensuring that air-conditioning/heating is set for a comfortable temperature; and switching to cleaner fuels and renewable energy sources where available (p. 66).

The Sydney 2000 Games and London 2012 Games exemplify what has already been done and what more can be done about energy issues at sports mega-events. The Sydney Games had generally achieved significant results in terms of renewable energy, receiving a good assessment from Greenpeace (Cashman, 2006). Some subjects such as 'solar energy in the Olympic Athletes' Village' and 'energy efficiency and environmental design in Athletes' Village and Olympic venues' were rated A+; 'green power use during Games', 'Olympic Hotels-Ibis and Novotel', and 'Millennium Park solar system' were rated A. Some others included 'solar panels on Olympic venues (Super Dome, Regatta Centre, Olympic Plaza lights, Entertainment Centre)' scoring B+, 'green power use by

organisers' scoring B, 'solar Media Village' scoring C+, and 'solar Thermal Power Station' receiving F. The London 2012 Olympics will involve an estimated 17,000 Athletes and Team Officials, and half of all the Athletes will live, train, and compete within the Olympic Park. Therefore the energy consumption to meet the needs of activities there is phenomenal. Indeed, to mitigate the adverse impacts and to deliver 'low carbon Games', the development of the Olympic Park follows a three-level energy hierarchy. These are to minimise energy demand (be lean), to use renewable energy (green), and to supply efficiently (be clean). Moreover, actions will be taken across other Olympic venues, hotels and partners (e.g. sponsors and suppliers). Coupled with a public education campaign, further steps will be taken to raise awareness of renewable energy and energy efficiency and to change behaviour (LOCOG and ODA, 2005a: 81). The use of renewable energy to power venues has been seen in Atlanta 1996 and Beijing 2008. For example, a photovoltaic energy system made up of 2,856 amorphous silicon solar cells was installed on the roof of Atlanta Aquatic Centre, supplying up to 40% of the electricity demand at this facility (Pitts, 2008). The Beijing 2008 Olympics plans to install geothermal pumps and wind turbines in its Olympic park (BOCOG, 2004).

2.2.5.6.ii Natural resources and cultural heritage, management of water, waste, and maintenance of biodiversity

Larger-scale sport events practised in natural field sites might possibly affect the environment insofar as large crowds in natural field sites, noise, light and certain treatments at the venues (e.g. pesticides) are all potential impacts (UK Sport, 2005). As such, the significant concerns are to ensure that their practices can be so arranged as to protect conservation areas, the natural resources and the cultural heritage (IOC, 1999). Practical measures that can improve or avoid adverse impacts are suggested as follows (UK Sport, 2005: 64):

- Carry out basic surveys - wildlife, landscape quality and cultural heritage
- Ensure that sensitive areas on, or next to, sites are adequately protected and marked
- Brief stewards and marshals to prevent spectators encroaching on sensitive areas
- Ensure that all subcontractors respect ecological or archaeological 'no-go' areas
- Design spectator routes to avoid sensitive areas
- Consult with wildlife and/or archaeological experts and statutory authorities

The empirical case of the Sydney 2000 Olympics also raised related issues in their agenda for the preparatory stage. As revealed in the post-Games report, their protection and conservation of natural resources and cultural heritage was an important responsibility for the Olympic Co-Ordination Authority (OCA). For example, the Millennium Parklands are regarded as the most ambitious and the most visible of OCA's environmental initiatives. There, natural resources such as wetland and woodlands are being protected and enhanced, whilst cultural heritage sites with specific regard to the former Royal Australian Navy Armaments Depot have been recognised and were introduced in a Conservation Management Plan (SOCOG, 2001). Regarding protecting and enhancing the natural environment at London 2012, the Olympic Masterplan sets out a vision for the rehabilitation of the Lower Lea Valley. This involves the revitalisation of the river ecosystem and an increase in the biodiversity and enhancement of the quality of urban green space. With respect to the conservation of the cultural heritage, English Heritage will work with partners to monitor the Olympic development in the Lower Lea Valley in order to ensure the conservation of the area's industrial past (LOCOG and ODA, 2005a).

Chernushenko *et al.* (2001) focuses sustainable water use on three main dimensions: indoor water use (water conservation), outdoor water use (reducing water consumption) and the treatment of discharged water. According to UK Sport (2005: 65), to achieve longer-term savings of the water resource in staging major sport events, conservation efforts are needed to invest in equipment and infrastructure from the outset. Since the concentrated demand for water at major sporting events ranges across catering, toilets, washrooms and cleaning services, the initial investment is required for low-flow showerheads, dual-flush toilets, automatic taps and timers, recycling systems for capturing rainwater and complete projects for upgrading irrigation systems and utilising treated wastewater.

Sydney 2000 Post-Games Report (SOCOG, 2001) mentioned that the most significant water conservation initiative is a site-wide water recycling plant: the Water Reclamation and Management Scheme (WRAMS). The $1.3 million system is designed to produce an estimated 850 million litres of treated water annually. Sewage is treated for non-potable reuse; reclaimed water is utilised for toilet flushing and irrigation and can provide approximately 50% of the water needs for Homebush Bay (Chernushenko

et al., 2001). Simultaneously a wide range of water-saving initiatives across Sydney Olympic Park have been implemented, including roof-fed rainwater tanks, water flow reduction valves and shower roses, a drip irrigation system and landscaping with native drought-tolerant trees and shrubs. In terms of sustainable water management at London 2012, in order to keep with the 'One Planet Living' principles the LOCOG will plan for the new infrastructure that can deliver all foul water to a new waste water treatment plant in an eco-park. There, processed waste water along with rainwater and water from borehole extraction will be collected into water recycling system and be delivered back to consumers within the Lower Lea Valley. The long-term vision for the Lower Lea Valley will be largely self-sufficient in water by 2020 (LOCOG and ODA, 2005a: 79).

The subsection reviews materials and waste management at staging sport mega-events. As UK Sport (2005) noted, this is an important category, being able to engage all participants and the public in an event. The key element for a waste management policy is further recommended in order to follow the '3R' principles- Reduce, Re-use, and Recycle. The previous case of Sydney 2000 set a good example of comprehensive strategy for this issue. Initially waste management was regarded as the responsibility of SOCOG's Cleaning, Waste and Laundry Programmes. Before the Games in 1996, a two-phase consultation process was launched by Sydney 2000 to develop a waste management policy and strategy. This involved, besides the Sydney 2000 staff, a wider range of stakeholders from 30 organisations (e.g. environmental groups, government agencies, waste boards, waste companies and industry associations, Venue Managers and sponsors). In late 1998, the central tenet of waste management policy, The Sydney 2000 Olympic Games Integrated Waste Management Solution (IWMS), was developed and then launched by the NSW Government and Greenpeace. OCA was also committed to reusing and recycling construction materials, from which construction waste was separated into bins on-site and the waste collected was recycled. It was shown that as waste concrete and brick was crushed and re-used on-site for the road base, construction waste recycling rates achieved very high levels of 94 per cent and 92 per cent in the Olympic Village and the Sydney SuperDome respectively. Recycled building materials have also been used in Olympic venues and facilities. Nineteen per cent of all timber in the venue at the Sydney International Shooting Centre, for example, is recycled timber whilst only 10% is from plantation timber. On the other hand, a three 'R' philosophy as "reduce, re-use, recycle" was induced in the construction at Homebush Bay, where up to

1.2 million kg of various materials were recycled (e.g. aluminum, bricks, concrete glass, paper, steel and timber). Furthermore, in order to raise awareness amongst staff and athletes before the Games, recycling bins were put in place at the various pre-events hosted in 1999. In compliance with the "three bins policy", waste stations, which were installed at all venues, were composed of three colours - yellow bins (for plastic, glass and aluminium), red ones (for food and paper), and black ones (for general waste). During the Games-time, waste management was categorised into several aspects as shown in Table 2.8.

Table 2.8 Sydney 2000 Games-time waste management

category	performances
To minimize waste and to maximise recycled papers	1.To minimize waste: the use of input controls to prevent materials that could not be reused or reprocessed 2.Waste-saving initiatives: the Olympic Results Information Services (ORIS) provided results to media by providing additional information on a computer network 3. Printed results pages: SOCOG trialled the issue of results on CD ROM. 4. To raise awareness about the environment and to reduce waste: before the Games, SOCOG established a worm farm to convert waste food generated by the cafeteria into garden fertiliser.
Waste streaming	1. The practice of waste streaming: the intention was to sort and stream waste at the source; the main purpose was to reduce residual material. 2. The use of colour-coded bin liners facilitated front-end streaming. 3. Recycling bins were set up in the Olympic Village in the earlier stages of the environmental planning.
Waste reprocessing	1. Over the 60-day period of the Games: 5010 tonnes of Olympic waste was generated, 68% of which was diverted for reprocessing. 2. During the Games: 3105 tonnes of waste was generated; 77% of waste was diverted for reprocessing. The waste generation rate was just under 0.4 kg per person. 3. Athletes were served food in recyclable containers; plastic was recycled at a materials recovery facility

Source: Adapted from Sydney 2000 Post Games Report (SOCOG and OCA, 2001)

Regarding waste management for London 2012 (LOCOG and ODA, 2007), the Games have recognised this issue as being closely associated with climate change. Reducing waste, for example, means carbon impacts will be minimised and less waste is sent to landfill. Landfill eventually generates methane, a more potent greenhouse gas, and creates carbon dioxide emissions through transport (p. 26). The Games aim to ensure that waste is minimised throughout the programme. Further, a six-level waste hierarchy has also been adopted throughout the programme including: reduction; re-use; recycling; composting; new and emerging technologies to recover energy; conventional incineration with recovery of energy; and landfill. To deliver a more sustainable Games, its suppliers and licensees and their supply chains will be included in sustainable sourcing plan, four principles of which are required to be followed: responsible sourcing, use of secondary materials (i.e. reused or recycled); minimizing embodied impacts (e.g. 'carbon impact'); and healthy materials (e.g. non-polluting/non-toxic materials and substances). In terms of the 'closed loop' event management system, the big commitment will be to ensure that no waste arising from venues during the 60-day Games period is sent to landfill. Besides, as the same practices applied in Sydney 2000, the system will involve separated waste collection in two aspects of front-of house (public areas) as well as back-of-house. This is believed to encourage a huge opportunity to promote a more responsible approach to waste management across the event industry, whilst to have a positive behaviour change amongst the general public.

Whilst waste management is so vital and full of potential to the environmental sustainability of hosting major sporting events, more attention should also be paid to public involvement and education value. According to UK Sport (2005), some events contractors are accustomed to collecting all rubbish in bulk and carrying out the separation of different streams behind the scenes. This is seen as having no public educational value and such a policy should be avoided.

The importance of preserving the quality of the biosphere and the need to maintain biodiversity has been identified as part of sporting practice in the Olympic Movement's Action Programme. In other words, the issue of the impact on biodiversity must now be carefully raised in organising a major sporting event. Biodiversity issues, for instance, emerged as one of three key performance areas in the development of Homebush Bay at Sydney 2000 (SOCOG and OCA, 2001). These included the

conservation of species associated with flora and fauna and people and their environment. OCA's wetland improvement programme aims to improve an extensive series of saline wetlands at Homebush Bay, where they form one of Sydney's most significant habitats for migratory birds. Through the efforts to improve the tidal flushing of saltmarshes and removing weeds and pollutants, the programme ensured the quality estuarine habitat of its birds and marine animals. On the other hand, the Management Plan includes protocols for protection of the endangered Green Frog and Golden Bell Frog during development on the site. A programme of research and monitoring for the frog has also evolved and the results demonstrate that the actions taken by OCA to conserve the frog are in effect successful, with the population being growing and viable. Depending upon consecutive work and its ecology monitoring programmes, information on diversity of flora and fauna of Homebush Bay offered OCA a new insight into local area's ecological system whilst this also benefits future activities on toxic remediation and restoration. Aside from the Post-Games Report, Greenpeace rated best in this category, according to Cashman (2006: 203). However, some concluded that the Sydney Games "did not really improve Sydney's main environmental problems such as ... a lack of biodiversity" (Lenskyj, 2000; Weirick, 1999, in Preuss, 2004: 82). Additionally, Green Games Watch 2000 (GGW 2000), a coalition of five environmental groups, closely monitored the Green Games and made a similar evaluation. A concern from the agency was the loss of biodiversity in some projects (Cashman, 2006).

Simultaneously, with recognition of a key aspect in the London 2012 Sustainability Plan, biodiversity is increasingly significant to comprehensive issues as to the global economy, serving a crucial function in climate change mitigation, watershed management, and adding to the quality of life (LOCOG and ODA, 2007). Five key areas for action on biodiversity at London 2012 include:

- Minimizing and mitigating the impact of development activity in the run-up to 2012;
- Developing new and enhanced habitats from open heath and wetlands, to species-rich grasslands;
- A conservation management programme for habitats and species;
- The development of venue environment management plans;
- Promoting awareness of the value of biodiversity and its links to sport and healthy living.

With strategic approaches identified, the Olympic Park Master Plan has integrated environmental enhancement from the outset. London 2012 has made some achievements of biodiversity by undertaking surveys and relocations of species during preparatory work on the Olympic Park site. The commitment to the quality of biodiversity during the Games-time will be through venue-based environment management plans across all venues. A more widely-based approach will be promoted to cover the sport sector as well as education and green volunteering initiatives.

2.2.6. Impacts of the "Green Games"

Even though sports mega-events differ in many ways - such as size, geographical background of hosting city and so on - they have many common elements in terms of sports, facilities, large numbers of participants, athletes' village, transportation requirements, media service - with a duration of several days or weeks and several years of advance planning (Chernushenko, 2001). So definitely, to achieve the ultimate goal of sustainability in a sports mega-event, it is better to initiate any sustainable planning and strategies at early stage (Bramwell, 1997; Chernushenko, 2001).

"Green Games" have gradually been termed "sustainable games" since the concept of sustainable development was introduced into the Olympic Games. In general the Lillehammer 1994 Games are regarded as the pioneer in terms of Green Games yet it was relatively rough and limited in sustainable ideas. The following Games, Sydney 2000, incorporated sustainable goals into its various organisations and the Games themselves, applicable even to the present day. A more recent example, the London 2012 Games, successfully drew upon the sustainable development concept in its bidding project and hence led to the award of hosting the games, despite that it has not been put into practice. Apparently, the application of the concept into a sports mega-event becomes imperative and necessary when assessing bidding projects by the IOC and therefore, how to reduce the adverse impacts of this sports mega-event and how to maximize its positive impacts within economic, social and environmental categories are both relevant to sustainable development. To be specific: identifying impacts and setting up evaluating criteria and indicators as well as the policy making will be required for governing bodies to accomplish sustainability in hosting sports mega-events.

A certain number of researchers and reports have also examined or elaborate the so called "green games", here purposefully including Sheffield 1991 World Student Games (Bramwell 1997, 1998; Roche, 1994), Lillehammer 1994 Winter Olympic Games (Berntsen, 1994; Roper, 2006; Spilling, 1998), Sydney 2000 Olympic Games (De Groote, 2005; Essex and Chalkley, 1998; Greenpeace, 1995, 2000; Powerhouse museum, 2006; Preuss, 2004; Sydney 2000 Olympic and Paralympic Games environmental benchmarks, 2006) and London 2012 Games (London Organising Committee for the Olympic Games and Olympic Delivery Authority, 2006; Roper, 2006; Vigor *et al.*, 2004). These games are intended to exemplify sustainable sport mega-events and are examined with specific criteria that are developed for this study. However, it is obvious that when some sustainability criteria are not available for a sports mega-event, then their development becomes part of the tasks in this study. This is also based upon the necessity where (1) these criteria must gear with the case studied and (2) there are no suitable criteria available for developing a standardized research tool to measure the impacts that could mitigate sustainability. Table 2.9 presents sustainability criteria met by three cases (Sheffield 1991, Lillehammer 1994, and Sydney 2000) and outlined in the London 2012 bidding project, which were identified with reference to the literature.

Table 2.9 shows that the number of sustainability criteria met by a recently-hosted sports mega-events is higher than in previous ones. In terms of economic sustainability, 'repeat investment' and 'changing consumer habits' are easily ignored whilst the four selected cases stress more the importance of equivalent jobs being created. In meeting criteria of social dimension, 'health protection' plans to improve local people's health and well-being have been neglected in three of them (except London 2012). In contrast to economic and social criteria, environmental issues are emphasized more. However, criteria of 'protection of natural resources and cultural heritage' and 'biosphere and maintenance of biodiversity' have received relatively little attention. In brief, although many criteria have been achieved or are going to be carried out, there is still room for comprehensively meeting all of them.

Table 2.9 Specific criteria of sustainable development in a sports mega-event

Sustainability Criteria	Sheffield 1991	Lillehammer 1994	Sydney 2000	London 2012
Sustainable Economy				
Changing consumer habits			**1.** Reducing or improving packages as well as innovating colour-coded recycling and waste management messages on take away food and drink packaging	
investment			**1.** Repeat business events at Sydney Showground averaged 55% (compared to 25% in 2002-03)	
employment	**1.** An estimated total of 6,583 jobs was created **2.**Jobs increased by 9% in hotel and catering ; by 24% in recreation and cultural services (1989-91)	**1.** The total number of the long-term impacts can be accounted for 400-500 full-time equivalents	1. The economic analyst, Geoff Carmody thought the extra employment related to Olympics to be one-fifth of 175,006 predicted jobs	**1.** 7,000 full-time equivalent jobs predicted in the construction industry; 12,000 jobs created due to the legacy development of the Olympic Park area
Sustainable Society				
Human habitat and settlements	**1.** The new sport and recreation facilities for the long term use and benefit of Sheffield residents **2.** Sport events held post-Games in the new facilities have increased attendances of local people watching sport		**1.** In most cases, the village is sold after the Olympics as happened in Sydney	**1.** 3,600 new housing units left for residents will be built in Olympic Village
Combatting social exclusion	**1.** The games event included an annual Children's Festival; key objectives are to boost the confidence and self-esteem of children from poorer schools **2.** Three Community Liaison Officers were appointed to involve Sheffield residents in the Games and to develop projects with ethnic groups, young people and the disabled	**1.** Future thought like implementing restoration measures at existing derelict sites is given top priority when staging the event		**1.** The Games will be staged in the Lea Valley which is the poorest and most disadvantaged area in London

Sustainability Criteria	Sheffield 1991	Lillehammer 1994	Sydney 2000	London 2012
Integrating the concept of sustainable development into sports event policies		**1.** Disposable products were either made of a re-usable quality or recyclable with contractual measures to secure the re-use/recycling of many products	**1.** The statement was signed with Auburn Council for working relationship and identifying areas for potential partnership in relation to transport, environmental and social sustainability **2.** There was SOPA's Social Plan aiming to ensure the park caters for the diverse needs of residential, working and visiting populations **3.** All the new facilities for the Games are intended to incorporate green design principles **4.** All new commercial developments in Olympic Park required to meet four Green Stars (environmental design rating tool)	Key Role for the Games: **1.** The London Plan identifies staging the 2012 Games as the 'major catalyst for change and regeneration in east London' **2.** 'Green credentials' is a powerful theme throughout the London Plan **3.** guarantee that all work necessary for the planning, construction and operation of facilities for the Olympic Games will be fully compliant with local, regional and international regulations, international agreements and protocols in relation to environmental protection
Health protection				**1.** The Olympic Park will provide local people with significant improvements in health and well-being
Community-wide participation	**1.** The Children's Festival involved whole communities in event planning, with more than local 150 schools and 4,500 children involved in 1993			**1.** A wide range of community interest groups have taken part in community engagement programme and back the bid; 33 boroughs support the bid **2.** National Opinion polls and Sports Marketing Surveys are conducting a long term survey mainly aiming at 12-65 years old
Sustainable Environment				
Protection of natural resources and cultural heritage			1.The Millennium Parklands 2. Conservation Management Plan	**1.** The Games will enhance the amount and quality of green space and conserved wetlands

Sustainability Criteria	Sheffield 1991	Lillehammer 1994	Sydney 2000	London 2012
Protection of natural resources and cultural heritage (*Cont.*)				**2.** The design will set new standards for sustainable production, consumption and recycling of natural resources **3.** Five World Heritage Sites will be promoted by enhancement programmes
Sports facilities	**1.** The creation of new facilities is that demand cannot be satisfied by Sheffield residents	**1.** Future thought like re-using facilities is given top priority		**1.** Utilising existing permanent venues already used to host major events **2.** Providing temporary facilities on sites where no permanent legacy use is identified (e.g. Royal Parks) **3.** Concentrating new building within the Olympic Park as a strategic component of the long-term regeneration plans for the Lower Lea Valley
Transport	**1.** The main Games facilities have been linked to the city centre by a new tram line which was designed to reduce the number of private cars in the city		**1.** Train line expansions and airport link were given good evaluation by Greenpeace **2.** By having so many Olympic facilities within walking distance of each other, sustainability is achieved by reducing the dependence on the motor car	**1.** Sustainable public transport is an integral part of the Olympic Transport Strategy **2.** The Olympic Transport Strategy will focus on minimising CO_2
Energy			**1.** The Olympic Village adopted the design of solar power and water recycling	**1.** The Olympic Park will follow a three-level energy hierarchy: minimise energy demand, use renewable energy, and supply efficiently
Accommodation and catering at major sports events		**1.** 900,000 plates and 3 million knives, forks, and spoons produced could be treated as food to feed to animals	**1.** The elimination or reduction of PVC in the athletes' village **2.** Much of the recyclable and biodegradable product for use at the Games, including sugar cane fibre plates, paper cups, biodegradable	

Sustainability Criteria	Sheffield 1991	Lillehammer 1994	Sydney 2000	London 2012
Accommodation and catering at major sports events (*Cont.*)			plastic cutlery etc. **3.** Tables, chairs, desks, partitions and bookshelves were all made from recycled cardboard in Games offices	
Water management			**1.** WRAMS recycles and treats sewage from the Athletes' Village and Sydney Olympic Park venues. **2.** In aspect of water conservation, the Athletes' Village houses use a range of water saving appliances	**1.** The long-term vision for the valley as a whole includes plans for the new infrastructure which will deliver all foul water to a new waste water treatment plant in an eco-park south of the Olympic site
Management of hazardous products, waste and pollution		**1.**Disposable products were made of a re-usable or recyclable quality **2.** 17,000 signs, signboards and road signs were made of recycled cardboard	**1.** 400 tons of toxic dioxin waste has been treated because of the construction of Millennium Park **2.** All new commercial developments are required to achieve a minimum 4.5 star energy efficiency rating, use sustainable materials in priority, waste management and minimization and connect to the Park's innovative Water Reclamation and Management Scheme	**1.** The regeneration of the Lower Lea Valley will establish a new approach to waste management, maximising opportunities for recovery, recycling and providing a resource for energy production
Quality of the biosphere and maintenance of biodiversity			1. Conservation of species associated with flora and fauna, people and their environment. 2.OCA's wetland improvement programme aims to improve an extensive series of saline wetlands at Homebush Bay	**1.** An Olympic Biodiversity Action Plan will be produced. This will set out a detailed implementation strategy for increasing biodiversity and managing habitats, both in the Lower Lea Valley and at other venues to be used for the Games

Sustainable criteria sources:

1. Olympic Movement's Agenda 21: sport for sustainable development (IOC: Sport and Environment Commission)
2. Taiwan Agenda 21

2.3.0. Section Three: An impact model and the conceptual framework

2.3.1. Event planning process

As mentioned earlier, the nature of major sporting events is the various potential impacts, both positive and negative. In considering this, delivering a responsible way of planning during the organising process should not be compromised in one way or the other. However, the question that this research proposes is: What factors should be encompassed in the planning of a major sporting event?

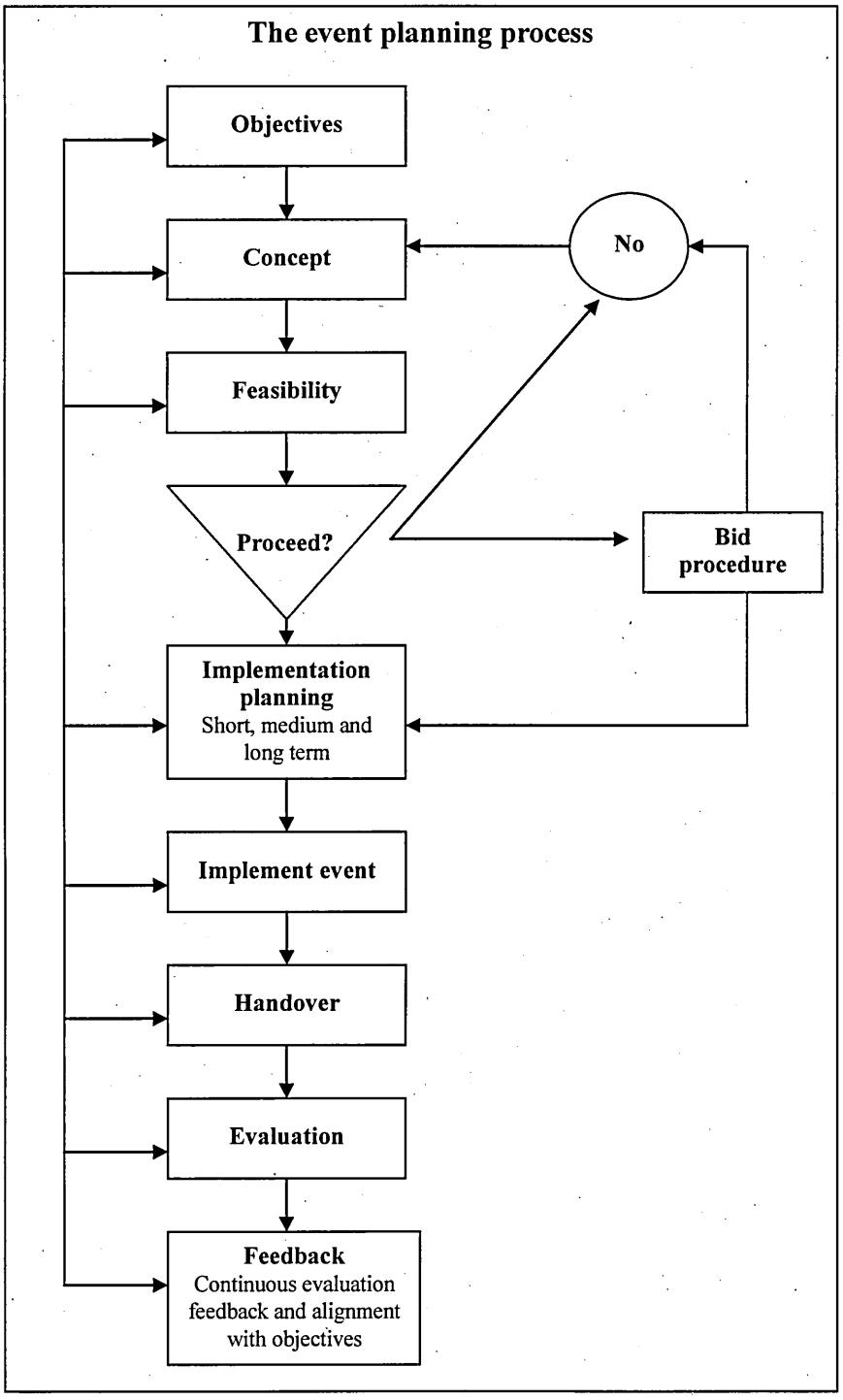
In this particular regard, Masterman (2004: 46) provides an event planning model (Figure 2.1) specific for major sporting event after an evaluation of the theories proposed by event management scholars (e.g. Allen *et al.*, 2002; Bowdin *et al.*, 2001; Getz, 1997; Shone and Parry, 2001; Torkildsen, 1999 and Watt, 1998). It is then highlighted that event planning is a 'staged process', but several gaps are needed to be filled. Firstly, most event theories or models are more suitable for short-term benefits (at event in general) rather than for the long-term value of strategic plan (at major international or sporting events). Simultaneously the models do not recognise the importance of the development of strategies for long-term legacies at the event planning stage. Secondly, most theories only serve for the implementation of events in general rather than for major sporting events. It is therefore suggested that, on the one hand, the potential for improvements to the lack of model or theories for longer-term strategic planning of major sporting events becomes vital. A more comprehensive planning process or model that can accommodate sports event of all scales or at least mega scales, on the other hand, is requisite.

Figure 2.1 illustrates the event planning process model which is composed of ten different stages (Masterman, 2004: 49-50).

- Stage 1: Objective - The objectives determine the nature and scale of the event. SMART strategies are usually taken in planning process, where they are specific, measurable, achievable, realistic and timely.
- Stage 2: Concept - Determine what the event is and what it looks like. Consider scales of event and operation, timings, locations and venues, facilities required and

available, target markets, *etc.* Identify strategic partners, all internal and external decision-makers, the stakeholders and organisers. Ensure the design is in alignment with the objectives of short and long terms.

- Stage 3: Feasibility - This stage is to determine if the event can deliver the objectives. Thus the event design is tested.
- Stage 4: Proceed - All of the identified decision-makers are involved in deciding if the event is feasible and will achieve the objectives. If the event is considered unfeasible there may well be a case to revisit the concept stage using feedback from the cost-benefit exercise to reshape the event or abort the project. If the event is feasible then the decision to proceed can be made.
- Stage 5: Bid - If there is a bid procedure the bid needs to be prepared, marketed and presented. The decision to progress from feasibility to one of proceed must identify the sunk costs that are involved in not winning the bid (p. 58).
- Stage 6: Implementation planning - During this stage, it is often only the short-term requirements of the event are considered. Determine all the operational strategies. Develop the critical path and the performance indicators to incorporate all the fine detail involved in executing the event in the shorter term and for realising the benefits in the longer term.
- Stage 7: Implement event - The plans are executed and the event staged.
- Stage 8: Handover - This stage involves the shutdown of the event. This needs to be considered at the concept and feasibility stages. If there are long-term objectives the handover of the responsibility for the evaluation of the legacies and facilities over the long term is necessary.
- Stage 9: Evaluation - Post-event evaluation is performed against original objectives, short and long term. Continuous evaluation is via using performance indicators, such as budget targets, deadlines for contracts to be achieved and *etc.*, at all stages of the process. By this, continuous alignment with the objectives is achieved.
- Stage 10: Feedback - The process is iterative by conducting evaluation at all stages thus ensuring feedback is continuous throughout the life cycle of the event. Post-event feedback following the evaluation, short or long tem, includes recommendations that feed into the process for the next event whenever or whatever it is.



Source: Masterman (2004: 48)

Figure 2.1 The event planning process

2.3.2. The impact model

2.3.2.1. The Tourism Impact Attitude Scale (TIAS)

One part of this study is to explore the perceived impacts of a mega sport event. Hence, the instrument designed for this purpose needs to be constructed. In the reviewed literature, it was found that the Tourism Impact Attitude Scale (TIAS) (Table 2.10), developed by Lankford and Howard (1994), has been used for assessing residents' attitudes toward tourism. The scale contains twenty-seven items, and two factors are extracted from the items. The first one addresses the level and extent of promotion of local and regional tourism, its perceived impacts and government's role in planning and controlling its impacts. The second one raises issues like community infrastructure and public service, personal leisure opportunities, and jobs and the economic role of tourism at a personal and community level. Broad concerns about economic, social and environmental issues are also incorporated into this scale.

However, this attempt to construct a standard scale by Lankford and Howard (1994) for the measurement of host residents' attitudes toward tourism was still unjustified. This is noted by Preglau (1994). He questioned this scale originally developed by Lankford and Howard with two points. First, the scale has omitted some issues regarding 'economic effects' and 'social and cultural effects' that were originally concerned in the tourism impacts literature. Second, if the TIAS was constructed to be a 'standard' measurement tool as researchers asserted, it was doubtful that how the standard scale has not been tested in different contexts (e.g. United States of America, Latin America, Europe, and the Far East) until the research notes have been released. Though the immediate clarification was made in repose to questions raised, Lankford and Howard suggested additional testing was obviously necessary for the stabilisation of the TIAS.

Lankford *et al.* (1994) further applied TIAS to islets of Penghu National Scenic Area in Taiwan. A total of 499 respondents were collected from three islets. The results demonstrated that the Chinese version of TIAS with 27 items was confirmed a good internal consistency with alpha-scale coefficient at 0.906. The five-factor solution (i.e. promote/positive, don't promote, impacts, public services, benefits of tourism)

accounted for 54.6% of the total variation in the data. Overall, the validity and reliability of the TIAS was extensively tested in Chinese version and in a different cultural region in Far East. This might partially answer the concerns of Preglau (1994), that is, whether the TIAS is a 'standardised scale' for measuring tourism impacts.

A further empirical test of TIAS was conducted by Rollins (1997) in Nanaimo, British Columbia, and he also confirmed this instrument as a measure of attitudes toward tourism. The questionnaire also included a 27-item list of impacts as recognised in TIAS, and it was tested in a small urban community of 79,000 residents. A total 405 residents over the age of 19 years were interviewed via telephone. A four-factor solution was extracted (i.e. general opinion, community benefits, negative impacts, and personal benefits), accounting for 56.8 % of the total variation in the data and reporting the α-value of 0.92 in overall reliability. An additional suggestion given by the researcher was that it might be possible to make use of this scale to measure residents' responses to specific tourism activities besides applying it to tourism in general. In his opinion, there was still a need to test how stable the factor structure is across different populations.

The revised TIAS was utilized by Twynam and Johnston (2004) to evaluate the changes in host community reactions to Nordic Championships. This is based on the belief that TIAS might be an appropriate foundation for studying special event tourism. The scale was grouped into three dimensions: event support, community development, and negative impacts. A consistent dimension of personal and community benefits between Lankford and Howard's original scale and this revised scale suggested that this may be a dimension of impacts that is common to tourism generally and to special events. The negative impact items and a specific factor related to events were also grouped together which bear some similarities with Fredline and Faulkner's (1998) factors. The researchers suggested that dimensions arising from economic, social, environmental and political outcomes of hosting events should be contained. It was recommended that effort needs to be made on the validation of a comprehensive event scale.

In terms of mega-events, Fredline and Faulkner (2002) also noted that the event impacts are quite similar to those of tourism generally. It is believed that there might be a role TIAS can play in assessing and interpreting residents' perspectives of events

tourism (Twynam and Johnston, 2004). Though the TIAS seems to be in response to the call for the construction of a standardized instrument (Ap and Crompton, 1998; Preglau, 1994), it is inevitable that the scale will be modified to fit a particular study (see Tables 2.10 and 2.11).

2.3.2.2. Theoretical base

Since the 1980s, researchers have paid attention to the impacts of tourism. The rationale behind this was noted by Ap (1992) and he thought increased understanding of the perceptions and attitudes of residents toward tourism impacts could relate to planning and policy. These would encourage successful developments and marketing, and would influence the operation of existing and future tourism programmes and projects. Though the research into this issue was critical of the absence of a comprehensive tourism theory at the outset, there have been responses to such concerns.

In this vein, Bystrazanowski (1989) suggested *play theory*, *compensation theory*, and *conflict theory*, but these were thought to not provide theoretical perspectives to explain residents' perceptions of tourism impacts. Then Pearce (1989) referred to *attribution theory*, but its specific application to tourism social impacts was not available in sufficient detail. Preister (1989) raised *dependency theory* as a potential basis for analysis, but its macro nature may not fit the measurement of local community. It is not applicable for the theoretical issues of benefits and disadvantages. However, following Preister's other suggestion, Ap (1992) utilized *social exchange theory* to develop a model that helps explain why residents develop positive or negative perceptions toward tourism. In essence, Ap's framework treats the relationship between various actors (e.g. local residents, local workers, local entrepreneurs, town officials, resident action groups, tourists, tourism operators, developers, environmentalists, or investors) in the host resident-tourism context in terms of trade-off between costs and benefits. Perdue *et al.* (1990) mentioned that this theory is regarded as an appropriate framework to explain residents' perceptions of tourism impacts. This was because the motivations and reasons of residents for involving in an exchange process may be accounted by this theory (Deccio and Bloglu, 2002).

Table 2.10 Tourism Impact Attitude Scale

Item number	Items
Factor 1: promotion of local and regional tourism, perceived impacts, and government's role in planning and controlling its impacts	
1	Against new tourism development
2	Encourage tourism in community
3	Should not attract more visitors
4	Should encourage tourism in Gorge
5	Encourage more intensive development
6	Tourism vital for community
7	Council right in promoting tourism
8	Community should become destination
9	Negatively impacts environment
10	Noise level not appropriate
11	More litter from tourism
12	Tourists are valuable
13	Limit outdoor recreation development
14	Crime has increased
15	Benefits outweigh consequences
16	Like to see tourism be main industry
17	Planning can control impacts
18	Will provide more jobs in community
Factor 2: community infrastructure and public service, personal leisure opportunities, and jobs and the economic role of tourism at a personal and community level	
19	Better roads due to tourism
20	Public service improved due to tourism
21	Have more money to spend
22	Has increased my standard of living
23	More recreation opportunities
24	Provides highly desirable jobs
25	Shopping opportunities are better
26	Support local tax levies for tourism
27	Will play major economic role

Source: Lankford and Howard (1994: 130)

Table 2.11 Verified Tourism Impact Attitude Scale

Item number	Items
	Economic impacts
1	The World Games will provide a short-term boost to the economy in this area
2	The World Games will provide a long-term boost to the economy in this area
3	The World Games will provide jobs for local people
4	The World Games has created a financial burden for Kaohsiung
5	Visitors to the World Games will contribute a sizable revenue to the local economy
	Political impacts
6	The World Games will draw national and international attention to this area
7	The World Games has caused a political turmoil in this area
	Social/Psychological impacts
8	City residents' pride has raised because of the World Games
9	The World Games will increase local people's interest in participating in sports
10	The World Games will increase the crime rate in the local community
11	Hosting the World Games will leave Kaohsiung with a negative image
12	Because of the World Games I will have more recreational opportunities
13	I support the World Games because of its vital role in our community
	Physical/environmental impacts
14	It is important to provide recreation facilities for local people rather than tourists
15	The World Games will negatively impact the environment
16	I believe the World Games should be actively supported in the local area
17	The local area has better transportation systems thanks to the World Games
	Total impacts
18	The benefits of hosting the World Games will outweigh any of its negative impact
19	Hosting the World Games will make Kaohsiung more of a tourist destination
20	The World Games will cause further congestion on roads
21	The city government made the right decision on hosting of the World Games
22	I felt I could take part in the decision-making process to improve the World Games' development
23	The city government listens to residents about their concerns with the World Games
24	Visitors to the World Games will interfere with my daily life
25	Hosting the World Games will give Kaohsiung more opportunities to host other sporting events
26	I would like to see the city government hosting mega-sport events like the World Games
27	Overall I believe my standard of living will be increased because of the World Games

Sources: Based on Lankford and Howard (1994), Twynam and Johnston (2004), and impacts literature (Getz, 1977, 1991; Hall, 1989, 1992; Ritchie, 1984; Shultis *et al.*, 1996)

Modern social exchange theory is a general sociological theory regarding the exchange of resources between individuals and groups in an interaction situation (Ap, 1992). This interaction suggests that when there will be some kind of benefit derived from the exchange, an individual or group will be willing to take on an exchange with another party. However, this theory also incurred criticism from Pearce *et al.* (1996) on its assumptions. First, it assumes that humans are "systematic information processors" whereas some cases in psychological research shows that they are more likely to be "cognitive misers". Second, an individual's knowledge is much founded upon socially-derived experience rather than the direct experience. The other assumption is the belief that people's perceptions are shaped within a societal and historical context. Despite these comments on social exchange theory, it has already been generally applied to empirical cases.

The theory has also been applied to the study of residents' perceptions of tourism (Ap, 1992; Bryant and Napier, 1981; Deccio and Bloglu, 2002; Perdue *et al.*, 1999). Lankford and Howard (1994) suggested that those who receive direct benefits from tourism are less likely to attribute negative social and environmental consequences to it and hold more positive attitudes toward its expanded development. The extent to which local residents accept or reject changes attributable to tourism depends in large measure on residents' perceptions of how it affects their own personal welfare and lifestyle.

Following Jurowski's (1994) model, Deccio and Bloglu (2002) drew on the social exchange theory to examine the perspectives of non-host residents on the hosting of the 2002 Olympics in Salt Lake City. This was conducted in the pre-event period. Based upon the theory, it posited that 'community support for mega events will depend on the perceived benefits and costs derived from the event.' In this study, residents' perceptions of spillover effects (as opposed to direct effects felt by the host community) of the Olympics and support for the Olympics were investigated. Results showed that perceived spillover benefits positively influenced support for the Olympics. However, there were still many residents who did not perceive much spillover impact.

Whilst social exchange theory has received wide attention, *social representations theory* is sometimes suggested in tourism literature (Moscovici, 1982; Pearce *et al.*, 1996). It refers 'social representations' to 'systems of preconceptions, images and

values' about a phenomenon. In tourism literature it is noted that when local residents are likely to understand a new event around them (e.g. a sport event), their past experience, knowledge and values with similar to it are regarded as a "reference point" (Fredline and Faulkner, 2002). The theory implies that residents are possibly to interact with various information sources that shape the primary perceptions, whilst this simultaneously informs their representations of tourism that show their feelings about impact (Fredline, 2006). To a certain extent, prior to a mega-event, information prepared for local residents by media and governmental organizations will play a role in how the local residents perceive the expected benefits and costs of staging a mega-event.

These studies imply the need for a variety of approaches for research into residents' perceptions of staging events. What we are concerned with is residents' perceptions of impacts, and this might influence their support for an event. With the progress of an event there is more information available and residents' attitudes are likely to change. A similar study was undertaken by Kim *et al.* (2006) prior to and after the games. Convenient sampling was used in two survey periods, and 371 and 448 valid cases were also collected respectively. Two sets of surveys were conducted in the same locations such as subway stations, train stations, bus terminals, restaurants, hotels and city halls. The findings indicated that residents' perceptions of the impact of the 2002 World Cup Games in Seoul changed greatly after the Games. As Twynam and Johnston noted (2004), this change might also mirror how the event is managed and how this relates to the community's experience.

2.3.2.3. The dependent variable

Wider impacts that are extracted from previous academic literature and further included in the verified TIAS (see Table 2.9) are treated as the dependent variables. They will be categorised into negative and positive variables after the main survey with an appropriate statistic technique applied. The negative relationship between the costs and benefits was confirmed. Cursoy and Kendall (2006) explore the relationship by using the structural equation analysis and the result supported this hypothesis (b= -.27; t = 3.02). However, this finding does not claim that there is any directionality of the relationship. A further explanation for this by them notes that "perceptions of impacts are not mutually exclusive", implying that if benefits are over-emphasized by residents,

any cost regarding staging the event may be easily overlooked. This issue is one that has been recognised in estimations of public benefits and in the design of contingent valuation studies. In the context of event tourism, investigation into this relationship is considered necessary and thus it is proposed in this study.

2.3.2.4. The independent variables: views regarding hosting mega events

A variety of factors have been recognized to help explain host residents' perception of event impacts. In general, these can be classified as groups of extrinsic and intrinsic factors. Extrinsic factors such as the stage of tourism development, tourist/resident ratio, type of tourist, and seasonality contribute to the explanation at the community level. Intrinsic factors such as involvement in tourism, residential proximity, period of residence and demographic can account for residents' perceptions at the individual level (Twynam and Johnston, 2004). Though these two groups of variables have been raised, this research mainly focuses on intrinsic ones since these are based strongly on and related to the local residents' views. Besides, as this research is concerned with the individual level rather than a comparison of events across a range of host communities, we will aim at the intrinsic variables of how they reflect the reaction of residents to the event.

2.3.2.4.i Residential proximity/Involvement/Period of residence

In terms of residential proximity, populations close to concentrations of tourist activity are more likely to be affected negatively by its externalities (e.g. noise, litter and crowding) (Brougham and Butler, 1981; Cegielski and Mules, 2002; Fredline and Faulkner, 1998, 2000; Faulkner and Tideswell, 1997; Pizam, 1978; Sheldon and Var, 1984; Teo, 1994). Though this relationship is understood logically there are studies that revealed the opposite relationships, suggesting that the more the host residents are involved, the more their tolerance levels increase (Fredline and Faulkner, 1998; Faulkner and Tideswell, 1997; Sheldon and Var, 1984). Conversely, drawing on social exchange theory, those who benefit less from the event will possibly be inclined to get negative perceptions. In addition, in terms of period of residence, Faulkner and Tideswell (1997) categorized this into two groups of long-term residents and recent arrival residents. It was arguable whether ten years was an appropriate criterion to

distinguish these. In their case study of the Gold Coast, the comparison between these two groups in their perceptions of event tourism and its impacts revealed little difference. Although within different groups, newcomers have been found to hold diverse perceptions of event impacts. Those who come in order to enjoy life in that region take a negative attitude (Brougham and Butler, 1981). In contrast, those coming for employment reasons take a positive attitude and see it as an opportunity (Duffield and Long, 1979). In turn, long-term residents in mature tourism regions are more amenable to events, whereas those in newly-emerging destinations are less amenable to the new phenomena arising from events (Faulkner and Tideswell, 1997).

2.3.2.4.ii Support for hosting the event/expected to attend/interested in event/perceived level of preparation by various parties

Support for hosting the event and the residents' expectations to attend also contributed to perceptions of impacts. Ritchie and Lyons (1990) surveyed the community views of the 1988 Calgary Olympics with five pre-event investigations and one post-event survey. Support for staging the event increased from about 84 per cent to nearly 98 per cent between 1983 and 1988; expectation to attend was high at level of 88 per cent in 1983, and then decreased gradually during each pre-event survey to around 47 per cent.

Mihalik and Simonetta (1999) conducted six pre-event studies in assessing the host residents' perceptions of the 1996 Atlanta Olympic Games from 1992 to 1995. With six telephone investigations, results showed that support for the Games was high across the survey period, but it dropped slightly by about 8% from 93% in the summer of 1992 to nearly 87% by the winter of 1995. The similar trend of decline happened in the survey of expected attendance at the event. In the same study, impacts caused by the event were also identified. The city's image was the most important issue amongst all benefits. Residents were increasingly concerned about negative impacts as time passed. Frater and Mihalik (1999) undertook pre-event and post-event studies of the 1996 Atlanta Games. One of their findings was the strong support for the Games during pre-event which remained stronger following the event. Respondents in both sections agreed that citizen pride was most likely to accrue due to staging the Games, but most thought the Games would not bring much economic benefit.

Twynam and Johnston (2004) launched a survey within three sections of pre-, during-, and after-events of 1995 Nordic World Ski Championships in Thunder Bay, Canada. Results were that the high levels of support for the Nordics declined from the initial investigation to the post-event survey ($p< 0.05$). A further relationship between support for the event and attendance was explored and findings showed that the relationship was positively linked ($p< 0.001$). Analysis of support for the event and level of interest indicated a significant relationship ($p< 0.001$). The findings were also similar to the study by Cegielski and Mules (2002). The researchers found that those who attended the supercar race event and were interested in the event held more positive perceptions. Furthermore, the researchers also pointed out that support for the event might have been influenced by how host residents perceived preparation of the various players involved in it. They postulated that if this relationship is recognized, then the performance of the organisations closest to the event in operations play the key part in any change in views. This result suggested that host residents' views might change once they have time to experience the event and absorb useful information from planners.

Cursoy and Kendall (2006) carried out a research during the 2002 Winter Olympics by modelling local residents' views. They developed a model mainly based on variables from the perceived impact, tourism support literature and the Deccio and Baloglu (2002) model. A total of 420 respondents were collected and the proposed model explained 31% of the variance in support of mega-events. One of their findings was consistent with previous studies, suggesting that perceived benefits positively influence the level of host community support for hosting the Games ($b = .43$; $t = 5.35$).

2.3.2.4.iii The age

Fredline and Faulkner (2002) examined host communities residents' perceptions on the impacts of two similar car races in two different Australian cities after the events (the Gold Coast Indy Car Race and the Melbourne Formula One Grand Prix). They used stratified random sampling technique to collect data, with 393 and 279 usable responses obtained respectively. Logistic regression was applied and yielded a significant model accounting for 37.4% of the variance, including 400 valid cases and 5 variables (5 out of 11 independent variables). It was found that younger residents were more likely to be positive whilst older residents were more likely to be negative or ambivalent.

2.3.2.5. Demographic variables: gender/age/marital status/occupation/highest education

Demographic characteristics have been applied to the explanation of the variance in attitude toward event and tourism. For example, Landford and Howard (1994) mentioned that gender and age can explain some of the variability in attitude toward local community change and tourism. Frater and Mihalik (1999) suggested that male and female respondents have different reactions to hosting an event, including economic benefit and citizen pride. A more recent survey used various demographic variables (gender, marital status, age, occupation and highest education) to study the Nordic World Ski Championships 1995 (Twynam and Johnston, 2004) but did not provide further results.

A study was conducted to explore host residents' perceptions on impacts of the FIFA 2002 World Cup in Seoul. Kim and Petrick (2005) carried out a study within two sets of timeframe, during and after the event (three months after the World Cup), with a convenience sampling method. 710 samples in the first survey were collected in 5 locations including a subway station, a busy commercial street, a traditional Korean market, a department store and a street near the university campuses. For the second survey, 220 subjects from a busy commercial street and a Korean traditional market area were obtained. The results demonstrated that residents positively perceived the impacts of the World Cup. Younger respondents tended to perceive a higher level of the negative impacts ($p<0.05$). In terms of gender, female respondents showed a higher level of perception on both the positive and the negative impacts than male respondents did ($p<0.05$). Within different groups of occupation, the housewife group was more likely to perceive a high positive impact ($p<0.05$) and, when compared to other groups, they also tended to perceive a low level of negative impact. The research did not report any significant difference between different groups of educational level and household income.

From the above, it might be expected that these variables can provide a consistent interpretation of factors and issues for events taking place in various destinations. However, a closer inspection of the findings indicates that in the different cases the relationships are complex and multi-faceted. Therefore, a further exploration into such an event using the case study of Kaohsiung (in a rapidly developing country) seems

helpful as a contribution to a more holistic assessment. Based on the reviewed literature, hypotheses regarding the impact model (Figure 2.2) are addressed in the following:

(1) Hypothesis 1: Despite somewhat arguable results from previous studies it was proposed that the more the hosting residents were involved, the more their tolerance levels increased. The hypothesis is that residents living in a tourism zone are more likely to take a positive attitude towards host impacts; and conversely, those living in a non-tourism zone are more likely to be negative.

(2) Hypothesis 2: There is a significant difference between long-term and recently-arrived residents in their perceptions of host impacts.

(3) Hypothesis 3: Those long-term residents with their lives adapted to the local area tend to be positive, but those non-adapted are more likely to be negative. Those recent-arrival residents with the incentive to seek an employment opportunity tend to be positive, but those with the incentive to seek a better lifestyle are more likely to be negative.

(4) Hypothesis 4: Those involved in the tourism industry are more likely to take positive attitudes toward hosting impacts. Those who are not involved are more likely to be negative.

(5) Hypothesis 5: Those with a high interest in the event are more likely to be positive, and those with a low interest tend to take a negative attitude toward hosting impacts.

(6) Hypothesis 6: Those who expect to attend the event are more likely to hold positive attitudes.

(7) Hypothesis 7: The younger the residents are, the more likely they are to take positive attitudes toward hosting impacts. The older the residents, the more likely they are to be negative or ambivalent.

(8) Hypothesis 8: The more the residents support the host of the Games, the more they are likely to take a positive attitude.

(9) Hypothesis 9: The level of support from residents is significantly associated with 'perceived preparation', the level of 'interest in the event' and 'expected attendance'.

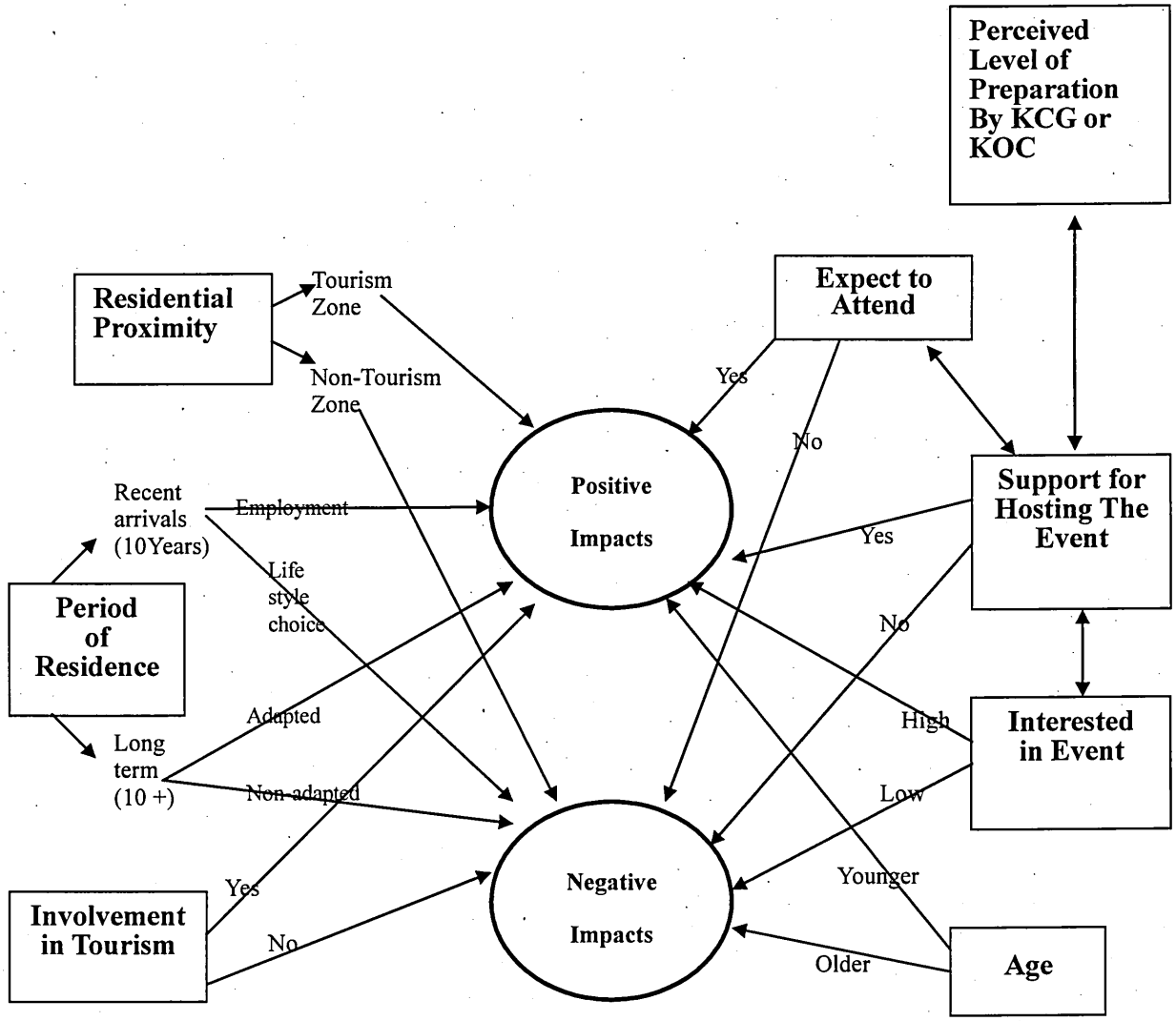


Figure 2.2 The Impact Model: the hypothesized correlated relationships

2.3.3. Value of "consumer behaviour" for current research

What is consumer behaviour? Belch and Belch (2007:105) define consumer behaviour as 'the process and activities people engage in when searching for, selecting, purchasing, using, evaluating and disposing of products and services so as to satisfy their needs and desires'. According to this definition, consumer decision is a result influenced by a variety of elements. For marketers, they need to know how customers make purchase decisions so as to successfully influence their purchase behaviour. Likewise, for event planners, to know customers' (e.g. host residents') viewpoints about a product (i.e. the 2009 World Games) prior to the event is helpful in terms of improvement of the planning process. However, it is beyond the scope of this research to examine all factors that influence consumer behaviour - rather, this research is interested in how consumer behaviour research contributes to understanding consumers' (host residents') attitudes towards impacts during the planning process of the 2009 World Games. In other words, it refers to the value of 'consumer behaviour' for this research.

In this research, to understand attitudes of host residents toward potential impacts prior to the Games is important. This is because it not only reflects the performance of the planning process but also provides information for event planners to track consumer attitudes during and post event. Attitude is given a definition as "*a learned tendency to respond to an object in a consistently favourable or unfavourable way*" (Onkvisit and Shaw, 1994, in Blythe, 2008: 138). Of particular importance in discussion of consumer attitudes are their attitudes toward a product's '*attributes*'; understanding these attitudes is crucial for designing attractive products (Blackwell *et al.*, 2001: 289). In this research, similarly, the salient attributes of a sports mega-event are identified as various impacts generated from actions by event planners. The evaluation of consumer (host resident) attitudes towards these attributes is beneficial to devising an appealing product (the 2009 World Games).

However, because of the dynamic nature of attitudes, it is possible that consumer attitudes may change over time (Blackwell *et al.*, 2001; Solomon *et al.*, 2006). In this sense, an attitude-tracking scheme is necessary if progress is made over time (for example the progress of the planning process of the 2009 World Games). The timeline

of this research allows the undertaking of an investigation that is limited to the pre-event in particular, and thus it was felt that a consumer approach would be more appropriate for the post-event research.

2.3.3.1. The '*Nicosia model*'

A brief summary of the value of 'consumer behaviour' can help us to know the highlight of this research, i.e. the link between attitudes of host residents and event attributes. However, it seems that such an interpretation is not enough because organising a mega-event is far more complicated. In considering this, the researcher is advised to borrow a model (the Nicosia model) from the field of consumer behaviour to help us understand interrelationships between 'attitudes' and 'attributes' within the study context.

There are three models most widely used in studying consumer behaviour. They are the Nicosia model (Nicosia, 1968), the Engel, Kollat and Blackwell model (Engel *et al.*, 1978), and the Howard and Sheth model (Howard and Sheth, 1968). As mentioned above, the Nicosia model is more relevant to this research and is thus considered more appropriate as a theoretical base to explain the mechanism of the framework developed in this research. The Nicosia model is composed of a flow diagram proposed to illustrate a consumer decision process. The model assumes that 'no prior consumer knowledge or experience with the product exists' (Vignali *et al.*, 2001: 463). In this similar vein, for consumers like the host residents in this case study, they never experienced a sports mega-event like the World Games because it is the first international multi-sport event to take place in Kaohsiung and Taiwan. According to the model, the salient features of the model begin with the flow of a message from a company to the '*internalisation*' of the message by a consumer. Perception of the message is determined by attributes of both the company and consumer (Gilligan and Wilson, 2003). At this stage, internalisation is used to signify operations such as physical perception of the stimulus' attributes, environmental attributes prevailing at the moment of perception, and cognitive structures that give meaning to the stimulus and its components (Nicosia, 1968: 33). The consequences may lead to the development of an attitude towards the product. The following stage consists of a search process, both internal and external. The consumer is to search for the product that is evaluated by

means of information from social psychological fields (internal search) concerning advertising messages, the product, the brand's sellers and so on, and/or by means of the information associated with the attitude from overt activities (external search) such as shopping and self-exposure to advertisements. The search process may or may not lead to the purchase of the product. The experience of consumption then becomes a factor that can influence the consumer's psychological state and plays a part as the consumer's predisposition, leading to a decision on whether to purchase the product or not. Therefore, it forms a feedback loop. Despite being criticised as oversimplifying the decision process of consumer behaviour, the Nicosia model has been widely adopted in understanding consumer behaviour. Further discussion of the model and its application in this research is provided in the following section (Section 2.3.4).

2.3.4. Emergence of the conceptual framework

The researcher has reviewed much of the academic literature and this step helps recognise issues where involved in studying sports mega-events and sustainable development. From previous review an achievable, sustainable mega-event particularly stresses the importance of the participation of the host city's residents and the degree to which event organisers cope with their potential perceived impacts. Furthermore, according to the definition of a sustainable sports mega-event in this study, three fundamental facets of potential impacts perceived by host residents are recognised as economic, social and environmental concerns. In addition, the earlier work also implicates the fact that a standard tool for assessing a sustainable sport event is totally missing. Based upon the step, two conceptual frameworks have been raised that will be applicable to a case study in order to improve an understanding of identified issues.

The first framework (Figure 2.3) raised here mainly serves to interpret how this study will go through the issue of a sports mega-event and sustainable development. With the framework informed by the prior review on four selected cases (Sheffield 1991, Lillehammer 1994, Sydney 2000, and London 2012), it recognises that achievable sustainable sports mega-events have to be planned from a very early stage (pre-event), practised effectively during the event, and well-managed after the event. The process of a sports mega-event toward sustainable development is also a dynamic process that is shown within this framework (which can be drawn upon to compare and examine

various period of sports mega-events taking place in different host cities). In this study, the selected cases are intrinsic to the implication of incorporating a concept of sustainable development into the policy-making and executive processes. The first three cases are chosen to reflect the whole process, whilst the London 2012 Olympic Games play a role of presenting a pre-event planning one. These are reviewed in order to indicate key issues that are employed to further explore the Kaohsiung case.

The second framework, shown in Figure 2.4, is a presentation of the process of how a sustainable sports mega-event is formulated. In the column of identified pre-event potential impacts, it will be assessed with self-completion questionnaires (VTIAS), which encompass economic, social and environmental dimensions. The identified pre-event potential impacts on local communities are going to be used to evaluate the government's action plan for those impacts. Useful criteria (see Table 2.12) are developed to indicate what standards a sustainable sports mega-event should achieve and they are simultaneously applied to respond to these impacts and beyond. These criteria are also handy guidelines for a clear understanding of responsibilities taken by various related governmental departments and organisers. Moreover, the conceptual framework is also underpinned by the Nicosia model. Specifically, actions based on these criteria represent the organisational attributes (i.e. attributes of the KOC and KCG). The interaction amongst these attributes generates a message (i.e. the preparatory work) to the consumer (i.e. host residents). Perception of message is determined by organisational attributes at this stage. However, it should be noted that the consumer is possibly exposed to the message and further forms the 'consumer attributes'. This process is called internalisation of the message, which denotes operations such as perception of economic, social and environmental impacts (event attributes) generated by preparatory work. The information about event attributes will be collected from the organisational and stakeholder's perspective. Consequently, the results may lead to the formation of an attitude toward the product (i.e. the World Games). The Nicosia model underlies the mechanism between actions by event planners regarding sustainability issues and the evaluation of attitudes towards pre-event potential impacts as shown in Figure 2.4.

Table 2.12 presents the specific indicators of sustainable development in a sports mega-event. Those indicators are developed in this study by the researcher with reference to the Olympic Movement's Agenda 21 and the Taiwan Agenda 21 since no appropriate indicators are available for evaluating a sustainable sport mega-event.

The two frameworks will give a solid outline throughout the PhD research whilst the specific indicators will be drawn on, particularly to develop interview questions and to examine the resulting evidence.

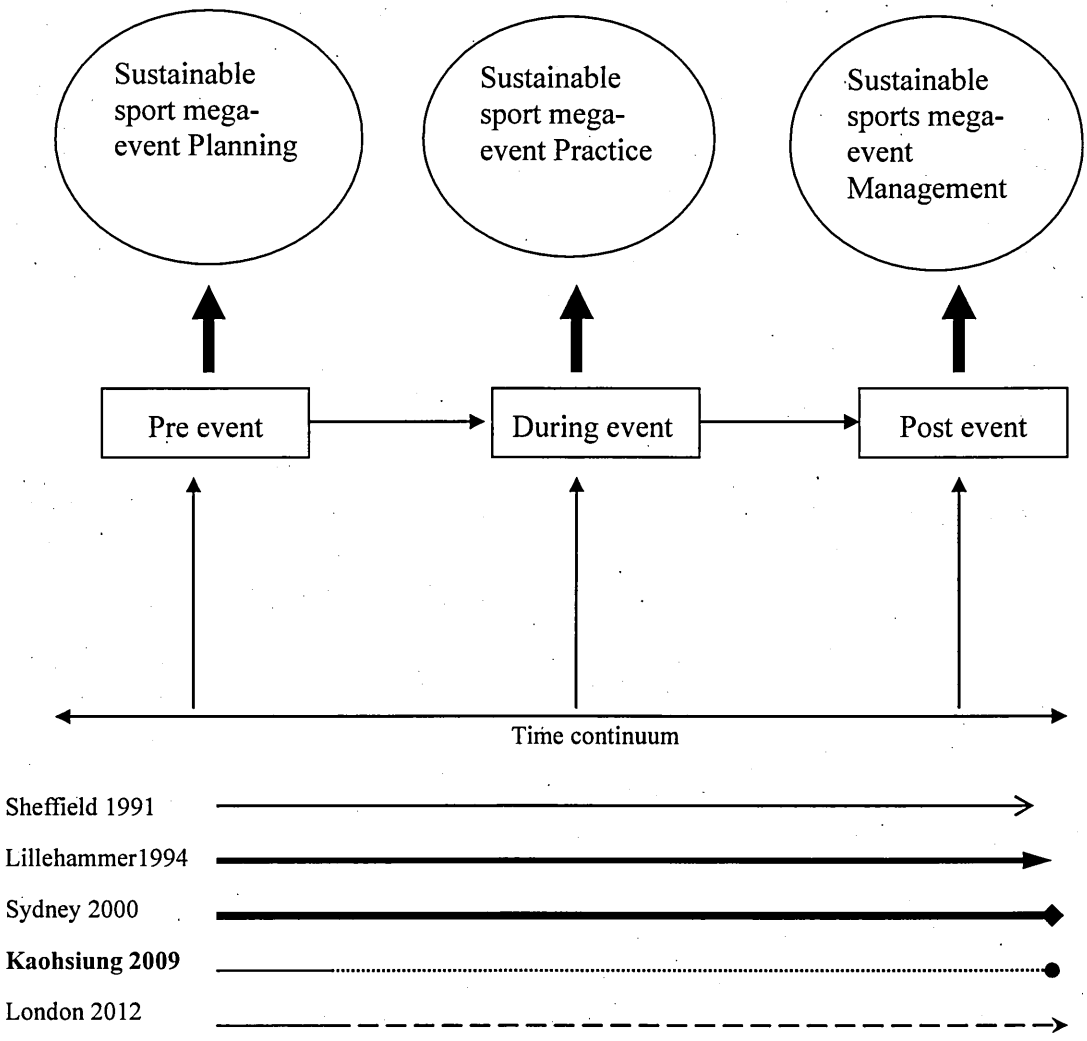


Figure 2.3 Sport mega-events: A sustainable development platform

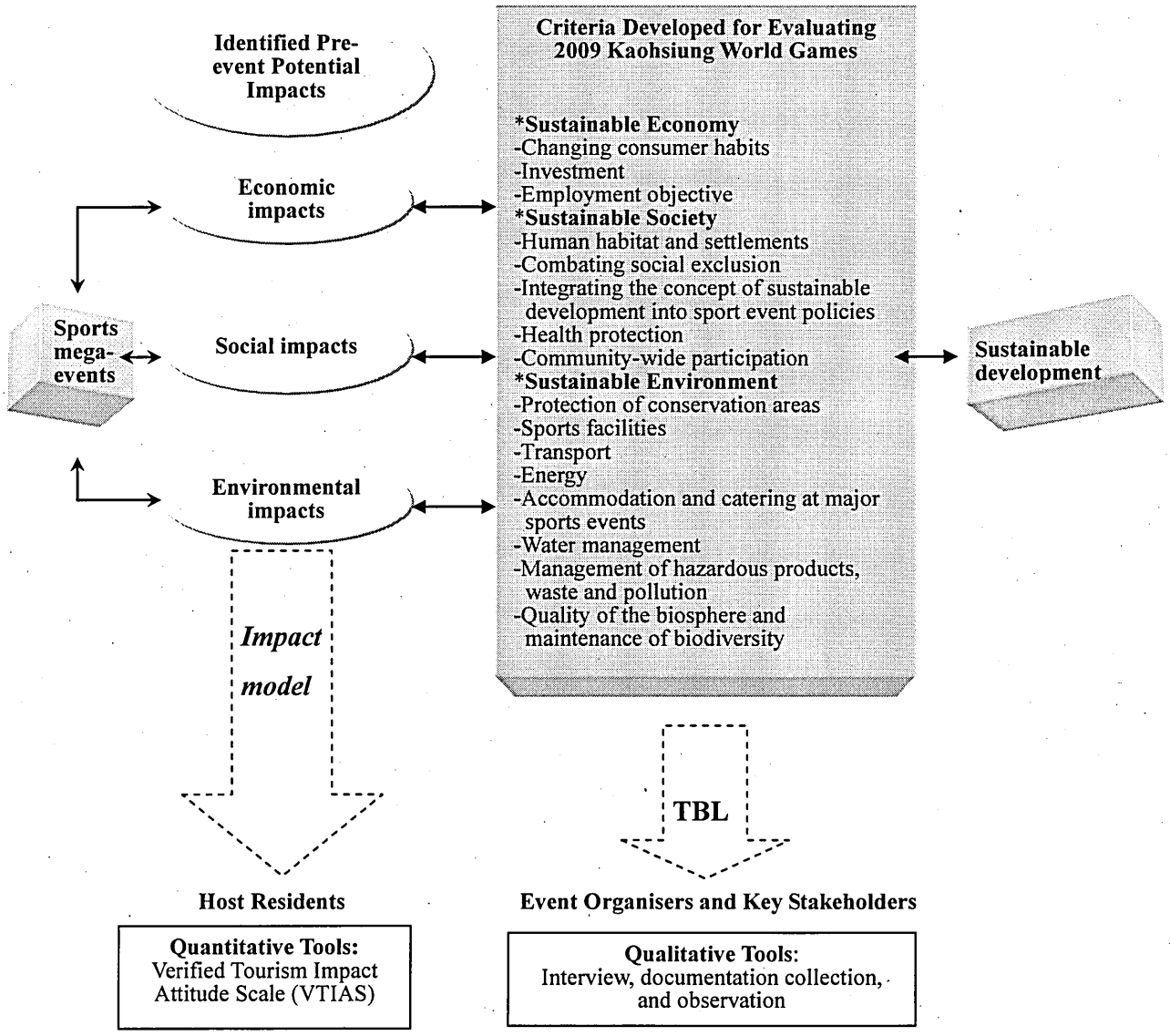


Figure 2.4 Conceptual framework: formulating a sustainable sports mega-event

Table 2.12 Specific criteria of sustainable development in sports mega-event

Sustainability criteria	Indicator description
Sustainable Economy	
Changing consumer habits	( ) Promote Green Labels ( ) Encourage Green Purchase ( ) Implement Green Taxation
Investment	( ) Long-term management plan for Sports and Recreational Park ( ) Main stadium running plan after game ( ) Plan for helping diversify the economy into tourism and related service sector activities
Employment Objective	( ) Labour issues: proportion of local residents during construction ( ) Numbers of job related to Games: full time and part time
Sustainable Society	
Human habitat and settlements	( ) Living accommodation: plan for after games ( ) Sports infrastructure is adapted to social needs, especially local residents
Combating social exclusion	( ) Event organizations should develop projects with and assist groups and individuals who are excluded for reasons of economic resources, sex (women), race (indigenous) or caste (the disabled) ( ) Encourage the priority development of sports infrastructure and equipment in the marginalized regions
Integrating the concept of sustainable development into sport event policies	( ) Events governing bodies are attentive to integrating the concept of sustainable development into the policies, the rules and management system
Health protection	( ) The governing bodies of sport event should intensify their efforts to combat doping, which is perverting the practice of sport and jeopardizing the health of those involved in it, especially young people
Community-wide participation	( ) Empowerment in decision-making ( ) Consult with local community ( ) To involve communities in event planning ( ) To involve communities in volunteering ( ) Provide opportunity to work at the event
Sustainable Environment	
Protection of natural resources and cultural heritage	( ) Events must ensure the protection of conservation areas, cultural heritage and natural resources ( ) To minimize the environmental impact of the infrastructure (housing, traffic arteries, communications, electricity supplies, water and food supplies, and waste disposal and processing)
Sports facilities	( ) To use existing sports facilities ( ) The creation of new sports facilities must be under the condition of demand that cannot be satisfied by using or renovating existing facilities ( ) The facilities have to be designed to fit in with the surrounding natural or man-made scenery
Transport	( ) To encourage use of public transport ( ) For short distances, it will encourage means of travel that employ muscular strength and are associated with sport, such as walking or cycling
Energy	( ) To promote the use of new technologies, equipment, facilities and practices that encourage the use of renewable energy sources and energy savings

Table 2.12 *(cont)*

Sustainability criteria	Indicator description
Accommodation and catering at major sports events	( ) Plan to minimize waste by maximizing recycling of the products used ( ) Process waste that cannot be recycled ( ) Make use of goods and foods that have been created due respect for the development of the local population and the protection of the environment
Water management	( ) Not jeopardizing general water supplies in a particular region simply in order to satisfy the needs of a sports activity ( ) Avoiding any practice that runs a risk of contaminating underground or surface waters
Management of hazardous products, waste and pollution	( ) To take advantage of the creation of new sports facilities, the renovation of existing facilities, the creation of new infrastructure and the organizing of major events to remediate sites contaminated by hazardous or toxic products, pollutants or waste ( ) To build upon successful practices and technologies used in previous Games to lessen pollution
Quality of the biosphere and maintenance of biodiversity	( ) To avoid giving rise to unnecessary or irreversible contamination of air, soil or water ( ) To avoid jeopardizing biodiversity or endangering plant or animal species ( ) To avoid contributing to deforestation or be prejudicial to land conservation

2.4.0. Section Four: Conclusion

The broad terms of a mega-event having been identified, the literature review begins by defining a mega-event as a way to fix the range for this research. Concurrent to the importance of this is the identification of the nature of a mega-event. In considering this aspect, the literature review highlights the assessment of impacts as central to mega-event research. There is no exception for studying sports mega-events. Yet due to the complex nature of each host area, it is suggested that impact investigation needs to focus on the unique challenges associated with case study regions.

In considering the wider issues of a sustainable sports mega-event, the literature review noted important aspects in the development of an understanding of sustainable development within event impact studies. This provided a chance to debate whether a one-off sports mega-event provides an effective approach to sustainable urban development. It is suggested that for an event to be successful or sustainable, an integrated strategy should consider as many as interested groups (e.g. policy-makers, government officials) and incorporate various social, economic and environmental scenarios. Ideally, the event strategy should be addressed in accordance with urban development plans. Within the research on events and their 'sustainable management', there has been a rise in the use of the concept of the "Triple Bottom Line". However, there appears to be a lack of impact studies of events to take the TBL approach as a framework. There is also a call for developing a set of operational indicators to measure impacts within such a framework. Within this context, the literature reviewed in relation to impacts of sports mega-event covered a wide scope of issues. This provided abundant factors necessary to be considered and a basis for further discussion. The impacts of so-called "Green Games" were also reviewed.

In considering that the planning process is important to the success of an event, the literature review provided an event planning model to raise relevant issues. It highlighted that event planning is a 'staged process', but there is also a lack of theoretical consideration of long-term strategic planning of major sporting events. In order to conceptualise the nature of sports mega-events, an impact model was proposed based on previous literature. This enabled the development of a research conceptual framework and specific indicators of sustainable development in sports mega-events.

This framework is illustrated in Figure 2.4 and 'specific indicators' are shown in Table 2.12. More importantly, inspired by the philosophical approach of pragmatism, the framework is underpinned by a mixed methods approach (see Chapter Three), with the concept of a 'Triple Bottom Line' integrated within a sustainable development perspective for the evaluation of sports mega-events.

This chapter is mainly presented to achieve objectives 1, 2 (part of it), 3, 4 and 5 (part of it). The following chapter (Chapter Three) presents the research methodology and specifies the methods used. The key points from this chapter are as follows:

- Criteria for mega-events are recognised as shown in Section 2.1.1.
- Assessment of impacts becomes central to mega-event research.
- Reasons for cities to host sports mega-events include such positive impacts as economic, tourism, environmental, social, psychological and political.
- Sustainable development refers to 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs'.
- In response to the spirit of Brundtland Report, the Olympic Movement's Agenda 21, and the Taiwan Agenda 21, operational criteria for a sustainable sports mega-event should include three dimensions, i.e. economic, social and environmental.
- It is argued that in the reviewed literature, there have been few cases concentrating on the link between sports mega-events and holistic sustainable plan.
- The concept of the 'Triple Bottom Line' has recently been used in event research in relation to sustainability issues.
- The impact model as shown in Figure 2.2 is developed to evaluate host residents' attitudes towards the potential impacts of hosting the World Games.
- The conceptual framework as presented in Figure 2.4 is developed to underpin the whole research process.
- Specific criteria of sustainable development in sports mega-events are developed as shown in Table 2.12 for evaluation of sustainability issues.

Chapter Three: Research Methodology

This chapter details research design based on the literature review and observation made in the case study region. Specifically, it reviews the research philosophy, case study region, research process regarding data collection, the details of fieldwork, the development and test of measurement tools both qualitative and quantitative, and the strategies to data analysis.

3.0. Introduction

The idea for carrying out this research emerged from observation of the case of Kaohsiung City. The researcher reviewed the relevant literature to generate the primary research questions and research aims and objectives and to develop a research framework (Figure 2.4, Chapter Two). In order to achieve this, the researcher devised a mixed methods approach based on the research framework and applied it to the case study region. Data Analysis approaches were determined and carried out to yield results, and these were analysed and discussed to produce conclusions. The research process undertaken in this research is presented in this Chapter.

This Chapter contains four sections that discuss and explain the research process. Firstly, it introduces the general research philosophy and explains this in conjunction with the mixed methods being adopted. Section Two details the logic behind the research design and illustrates the research process. Section Three provides details about data collection, both qualitative and quantitative. The former discusses secondary data and document analysis, research ethics preparation and application of the fieldwork. the case to be studied (background of the host city and the three most recent World Games), issues related to selecting interviewees (sampling design), the interview schedule and its implementation and the execution of fieldwork via site visits. The quantitative research method deals with issues around sampling techniques, merits and limitations of questionnaire method and survey, distribution of survey questionnaires, practicalities of the investigative process and the construction of the assessment instrument (pilot test and formal questionnaire). The last section presents the applicability of data analysis strategies.

3.1.0. Section One: The Research Philosophy

3.1.1. The claims of Postpositive knowledge

Traditionally, the principles of positivism reflect the research philosophy of the stance of the natural scientist (Saunders *et al.*, 2007). People taking this philosophical research position are dependent upon a value-free way and observable social reality; relying less on human interactions. Thus positivism claims a scientific, numerical and more specific, quantitative research advocating that the positivist researcher is likely to adopt a highly-structured methodology (Gill and Johnson, 2002, in Saunders *et al.*, 2007). Although it is often assumed in reality it is almost impossible to completely detach personal values or preconceptions from what has already existed in the world or in an inquiry. Thus, what positivists do is attempt to mitigate any bias resulting from individual considerations. According to Patton (2002), they make them explicit, use rigorous field procedures, and discuss possible influences. On the other hand, positivists also take the view that there is '*one reality*' existing out there, whereby dedicating themselves to discovering '*what it is*' (Robson, 2002). Positivism taking its solid claims, it has been criticised for its traditional notion of the '*absolute truth*' (Phillips and Burbules, 2000, in Creswell, 2003) of knowledge.

Through criticisms of the weakness of traditional positivism, postpositivism asserts the notion of the truth of knowledge is more relative than absolute, and admits that there is 'certainty' of causality in explaining social phenomena (Patton, 2002; Creswell, 2003). It is for this certainty that postpositivists seek to explore potential causal-effect linkages. Postpositivists also contend that the researcher and the observed might not be mutually exclusive. Based on this, theories, hypotheses, background knowledge and individual's values are factors that can influence the inquiry (Robson, 2002). For postpositivism, it also focuses on a refined set of ideas (Patton, 2002) and can be measured in numeric way, i.e. quantitative elements. At the end of this discussion and for this research, it is suggested not to follow this knowledge claim within this research design.

3.1.2. Constructed knowledge claim: Constructivism, Interpretivism

Alternatively, as opposed to positivism's assertion, '*interpretivism*' (Saunders *et al.*, 2007), or commonly termed '*constructivism*' or '*naturalistic*' inquiry (Lincoln and Guba, 1985, in Robson, 2002), takes the view that reality is socially constructed (Robson, 2002). In other words, meaning is constructed but not discovered (Crotty, 1998). It also puts a premise that human world is studied differently because it is different from the natural as well as physical world (Patton, 2002). Those researchers who take the views from constructivists try to achieve the goal of research in exploring the participants' lives and interactions with others. Thus, the role of research participants is helping to construct the '*reality*' with the researchers (Robson, 2002). Further to this, Crotty (1998: 54) explained, "*all reality, as meaningful reality, is socially constructed*". In taking the views of the observed in order to develop theories inductively (i.e. being totally based on knowledge claim) (Creswell, 2003), it must be accepted that the aims and objectives of the research may not be fully satisfied. As a consequence, an alternative must be sought, whereby a mixed -method approach might be more suitable.

3.1.3. Realism

Being the philosophy of science, realism says that, in its essence, reality exists without relating to the perception of the individual's mind (Saunders *et al.*, 2007). Realism also believes, sharing similar assumptions in positivism, that there is a scientific approach underpinning the collection of data and how to explain them (Bryman, 2004; Saunders *et al.*, 2007). Whilst relating realism to social research context, realism admits its complexities and therefore different methods need to be applied to different phenomena. In understanding this, realism adopts a more scientific approach than interpretivism or constructivism, thus playing a part in philosophical knowledge claims between positivism and interpretivism. Two forms of realism are usually recognised: empirical or direct realism, and critical realism. The former asserts that reality can be realised simply through the use of appropriate approaches that are known as '*naïve realism*' (Bryman, 2004) or are considered to be '*superficial*'. For this an ideal condition is usually assumed in describing the complexity of social world, whereby '*generative mechanisms*' behind observable phenomena are easily ignored (Bhaskar,

1982, in Bryman, 2004: 12). The latter (critical realism) reflects the view that the social world can be understood and further changed only when 'generative mechanisms' are identified, and when further application of realism to wider fields has revealed its potential. Based on this analysis suitable research philosophy for the use of this research is recognised and discussed in the following paragraph.

3.1.4. Pragmatism

According to pragmatist views such as these of American philosophers John Dewey, Henry James, Charles Peirce and more recently Richard Rorty (Barnes, 2007; Creswell, 2003), for knowledge to be true, it needs to be useful as well in enabling humans to achieve specific aims (Barnes, 2007). This philosophical approach (discussed by Creswell, 2003; Tashakkori and Teddlie, 1998; Patton, 1990; Robson, 2002) suggests a mixed-method approach (to both research philosophy and methodology). This philosophical knowledge, contrasting with earlier research philosophies, is termed the "*third research paradigm*" (Johnson and Onwuegbuzie, 2004: 14).

Following this, central to the pragmatic knowledge claims in social science research, according to Rossman & Wilson (1985, in Creswell, 2003:11), is the 'research problem'. This is what Doncaster interpreted as the 'research topic' (2006), from which multiple approaches emerge as solutions to core issues. In line with this understanding, pragmatism encourages a mixed approach, the combination of qualitative and quantitative. Based on Cherryholmes (1992) and Murphy (1990), Creswell (2003:12) observes that pragmatism features a series of knowledge claims: 1) *It is not committed to any one system of philosophy and reality*; 2) In order to best achieve research needs, researchers are free to determine methods, techniques and procedures; 3) Pragmatists, being mixed-method researchers, draw on various approaches in collecting and analysing data rather than clinging to only either quantitative or qualitative approaches; 4) Mind and reality are not mutually exclusive and thus mixed methods are stressed, further enabling the best understanding of a research problem.

Modern proponents of pragmatism believe that compatibility between qualitative and quantitative methods is possible. Robson (2002: 43) stated that, under the belief that "*reality is multiple, complex, constructed and stratified...*", a pragmatic approach leads

to mixed-method studies, using "*whatever philosophical or methodological approach works best...*". Earlier than Robson, Patton (1990: 39) noted that questions raised out of all research might not be necessarily theoretical, whilst on the other hand, not all research is theory-based. This stresses "*methodological appropriateness*".

In discussing the above, a more recent emphasis on mixed-method research synthesis to advance qualitative and quantitative research is highlighted. In integrated research designs, Sandelowski *et al.* (2006) contended that they are possibly achieved not only by extending findings from the same aspects of each method but also by mixed methods analyses. Beyond this, Yin (2006) succinctly discussed the integration needed in undertaking a single study. This included research questions, units of analysis, samples for study, instrumentation and data collection methods, and analytical strategies. Further summarizing this, he stated, "*the more that two (or more!) methods have been integrated into each of these procedures, the stronger the 'mix' of methods*".

In the context of this research and having discussed the philosophical considerations, the adoption of pragmatism as a philosophical research approach is considered appropriate. Within the nature of this current research, seeking information with multiple techniques and collecting data from different situations in a real world context is most informative. In brief, pragmatism *"opens the door to multiple methods, different worldviews, and different assumptions*", and to "*different forms of data collection and analysis in the mixed methods study*" (Creswell, 2003: 12).

3.1.4.1. Mixed methods research: Toward a definition

As informed by Creswell (2003), pragmatism leads to mixed methods research. Further to this, mixed methods research is increasingly recognised as the third major 'research paradigm' (methodological paradigm), together with the traditional philosophies of qualitative research and quantitative research (Johnson *et al.*, 2007). However, even with ongoing dialogue or debates, the question of 'what mixed methods research really means' still lies ahead for researchers considering the adoption of multiple viewpoints and standpoints of qualitative and quantitative research in a single study. In an effort to seek the answer, Johnson *et al.* (2007) extracted 19 definitions

from opinions given by 31 leading mixed methods research methodologists[1]. Though the nature of heterogeneity in mixed methods research was acknowledged, the researchers made a consensus on the core of mixed methods research and came up with the following general definition (p.123):

> "Mixed methods research is the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches (e.g. use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration",

and the definition refers to

> "A mixed methods study would involve mixing within a single study; a mixed method program would involve mixing within a program of research and the mixing might occur across a closely-related set of studies"

Thus, deeply embedded is the element of 'mixing'. In the light of inherent methodological complexity, perhaps, according to Maxcy (2003), mixed methods research places emphasis on its value, which "opens up the interpretive dimensions of social science research" and "lays bare the assumptions about the nature of reality".

[1] The definitions presented in the article included contributions from Pat Bazeley; Valerie Caracelli; Huey Chen; John Creswell, Steve Currall; Marvin Formosa; Jennifer Greene; Al Hunter; Burke Johnson and Anthony Onwuegbuzie; Udo Kelle; Donna Mertens; Steven Miller; Janice Morse; Isadore Newman; Michael Q. Patton; Hallie Preskill; Margarete Sandelowske; Lyn Shulha and Abbas Tashakkori and Charles Teddlie.

3.2.0. Section Two: Development of the research design (mixed methods) and the illustration of the research process

It is acknowledged that doing research is a highly creative process. With clear research objectives and questions ahead, research methods will be rested through the initial scoping research stage. With consideration of significantly divergent issues, with participants potentially targeted, and the interest focused for each research topic, a mixed-methods approach was adopted. This term was added by Saunders *et al.* (2007), for situations when both quantitative and qualitative data collection techniques and analysis procedures are used in a research design. ISince it was recognised that all methods have limitations but that a mixed-methods approach facilitated greater understanding (Saunders *et al.*, 2003) and therefore this was considered appropriate in order to minimise the bias that is inherent in any single method.

Having identified the potential limitations of using the single-method approach, the researcher used the mixed-methods approach, so enabling knowledge claims to be based on pragmatic grounds (Creswell, 2003). This approach can benefit research by triangulating data sources (Saunders *et al.*, 2003); in other words, triangulation, according to Patton (2002), strengthens a study by combining methods. As Saunders *et al.* (2007) suggested that case study research might be suitable for the use of multiple sources of methods to triangulate data, the mixed-methods approach adopted in this case study research design is therefore justifiable.

Reciprocally, case study approaches may combine quantitative and qualitative data (Finn, 2000). As Robson (2002:178) notes that case study is a strategy that "*involves an empirical investigation of a particular contemporary phenomenon within its real life context using multiple sources of evidence*". By using a case study the researcher can explore in depth a programme, an event, an activity, a process or one or more individuals; cases are bounded by time and activity, and thus ample and detailed information can then be collected by applying a variety of data collection procedures over a sustained period of time (Stake, 1995) - the researcher cannot rely on a single research method for a case with richness of context. With this implication, 'triangulation' is borrowed in this study which entails using more than one method or source of data in the study of social phenomena (Bryman, 2004:275). It is also used to

refer to a process of cross-checking findings deriving from both quantitative and qualitative research (Deacons *et al.*, 1998). Combining quantitative and qualitative research is a way to study different aspects of a phenomenon. Multi-strategy research is also geared to addressing different kinds of research question - quantitative research applied to this study reveals impact issues at the pre-event stage, and qualitative research reveals an insight into the viewpoints of how organisers and officials tackle these impacts in the short and long terms. Case study design is helpful for both theory testing and theory building (de Vaus, 2001), this being one facet in the present study.

Essentially, since this research is of a more exploratory than confirmatory nature, it allows a flexible response to new data that appear as the research progresses (Saunders *et al.*, 2007). However, whilst it might also be considered to be a lack of direction, it is the characteristic of flexibility embedded in the research process that broadens the sphere of data collection at initial stage and progressively narrows down to the focus of the research issues (Adams and Schvaneveldt, 1991 in Saunders *et al.*, 2007).

3.2.1. Adopted components of the mixed method approach

3.2.1.1. Survey as one of quantitative approaches

The survey approach adopted in this research was to probe the attitudes taken by the host communities' residents toward perceived impacts; especially relating to aspects of economic, social, and environmental issues. The strategy was suited to the research as it allowed the effective collection of a large amount of data (Saunders *et al.*, 2007), and this was efficient in terms of time and cost and was particularly suited to the metropolitan (e.g. Kaohsiung City) case study region, which has a population of 1.5 million. Several regions were selected, with a series of household surveys to be undertaken. The household survey - as stressed by Jennings (2001) - was to gather data regarding attitudes and opinions. It is an approach often used for research on travel and tourism products and developments.

The survey approach (questionnaires as used in this research) also offers potential advantages and disadvantages (further discussed in Section 3.4.8.). However, before

carrying out the survey, there was the question of 'how large should the sample be?' The answer depends on several considerations and they are not definitive. According to Bryman (2004), these are:

1) Sample error: A large sample size cannot guarantee precision. Any decision about sample size leads to question of how much sampling error one is prepared to tolerate. This is also taken as, 'as sample size increases, sampling error decreases.
2) Time and cost: 'The larger the size of the sample drawn from a population the more likely (sample mean) converges to μ; but the convergence occurs at a decelerating rate (which means that very large samples are decreasingly cost efficient)' Hazelrigg (2004).
3) Heterogeneity of the population: The greater the heterogeneity of a population, the larger a sample will need to be. For example, a sample of a whole city is very heterogeneous, whereas the population is likely to be highly varied.
4) Type of analysis: In analysis process, sample size should be sensitive to the kinds of analysis. For instance, when using Chi-square to analyze data, the number of cells in a table will be important. Thus a larger sample may be needed according to the nature of the analysis to be undertaken and also the nature of the variables in question.

Consequently, with the above considerations and issues of research design, it is recognised that satisfactory results for analysis depend on enough samples being collected, the sampling process and the representative nature of the sample. It is worth spending time on avoiding factors that might erode credibility of the research. Analysis based on a small number of survey samples is not acceptable. The research design seeks to minimize such problems.

3.2.1.2. A little or more *'ethnographies'*

The mixed-methods design for this research necessitated not only survey approaches but also the capture of key ethnographic elements. This led to the seeking of appropriate views of those involved in the Games organising process. As suggested by some researchers (Gilbert, 1993: 156; Saunders *et al.*, 2007), 'ethnography' is so termed because it emphasises the "*naturalistic*" phenomena to be studied that occur within the

context that the researcher is exploring. However, in this research, an ethnographic strategy is considered appropriate because gaining a better understanding of the perspectives from key individuals, planners and organisations is at the core of gaining insights into the process of organising a sport mega-event. This is as opposed to spending a long time in fieldwork. This research, as Denscombe (1989: 69) put it, is intended to predominantly "*grasp the native's point of view*".

Data-gathering techniques pertinent to the elements of an ethnographic approach are typically dependent on observations and informal interviews (Rossman and Rallis, 1998). By means of conducting a short period of observations in a cultural event, along with note-taking when various participants were interviewed, the role of researcher would seek to understand insiders' views (*emic* view) or 'world views' of key informants (Kvale, 1996; Rossman and Rallis, 1998). This approach is regarded as producing "*thick data*" (Hammersley, 1990, in Denscombe, 1998:72; Robson, 2002:186) as to the collection of in-depth exploration as well as "rich" in the points of view of the key informants studied.

3.2.1.3. The approach to case study

By reference to Cherrryholmes (1992) and Murphy (1990), it is thought that pragmatism can provide a good foundation for the claims of the mixed methods researchers (Creswell, 2003). In line with the pragmatic philosophy, the approach to case study for this research allows a variety of sources, a variety of types of data and of research methods to be as part of the investigation (Denscombe, 2003). Thus in designing this research, a quantitative research method by applying questionnaires to the identified regions was taken into account, along with application of the qualitative research method. As such, an empirical inquiry can be made into a particular contemporary phenomenon within its real life context (Yin, 2003b). Further to this, this inquiry also dealt with distinctive situations and relied on multiple sources of evidence (Robson, 2002; Yin, 2003a; 2003b). On this basis, the case study involved a comprehensive research strategy, with both quantitative and qualitative approaches.

Reliance in a case study on a single data collection to achieve the research aim is questionable (Finn *et al.*, 2000)and, further, a case study approach that is utilised to

explore issues in depth and in context, enables theory building and theory testing (de Vaus, 2001; Finn *et al.*, 2000), implying an iterative approach to inductive and deductive enquiry. A questionnaire survey approach was therefore considered appropriate, one intention being to seek representativeness among populations of identified regions and the other to gain insights into the unique characteristics of identified groups of event organisers.

Despite the recognised advantages of the case study approach, a common concern is that it provides little basis for scientific generalization (Bryman, 2001; Denscombe, 1998; Yin, 2003b). However, in response to this, researchers argue that the reliance of case study findings depends much on "*how far the case study example is similar to others of its type*" (Denscombe, 2003) and how well the theory is generalised from the case study (Mitchell, 1983; Yin, 1984 in Bryman, 2001). As Denscombe (1998) pointed out that in the case of a 'typical' instance, the particular case study is likely to be applicable elsewhere. For this research, Kaohsiung World Games was selected as the case study since the timing of the Games offered the researcher a 'unique opportunity'. The Games are recognised as a sport mega-event, sharing some 'typical' elements with similar events (e.g. the Olympics).The unique characteristics have been presented as an issue with respect to a rapidly-developing country that is undergoing the process for the first time.

3.2.2. Issues of qualitative and quantitative approaches

The mixed-methods approach was considered appropriate for this research. On the one hand, quantitative inquiry was necessary for assessing the significance of a sports mega-event (i.e. impacts inquiry). At the same time the phenomenon of organising this mega-event in terms of sustainable development issues merited a qualitative approach. However, for whatever the reason it is selected in research, the mixing of methods has long been debated (Davies, 2003; Kvale, 1996; Patton, 1990; Silverman, 1993). This centres on whether they are mutually-exclusive, and thus merits discussion. For example, Brannen (2005) discussed mixing methods and asserted that the claims that qualitative research uses *words* while quantitative research focuses on *numbers* is too simplistic. The claim that qualitative research is in favour of *meanings* whilst quantitative research emphasises specific *behaviour*, is more debatable.

In the past, the relation of data with respect to qualitative and quantitative inquiries was poorly documented. Discussion of this suggested qualitative research compared with quantitative was "*messy*" (i.e. contextual, idiosyncratic), and had an absence of "*rigour*". It was often hard to capture the whole of behaviour, thereby being easily underrated (Davies, 2003). In response to this, the "*complementarity*" of both methods, added Davies (2003), might be achievable when the strengths of both data are highlighted. According to Patton (1990, 2002), qualitative methods can facilitate research of issues in depth, detail and meaning, which increases the depth of understanding of a smaller number of participants and phenomena explored. This in turn might also reduce generalisability. By contrast, a quantitative approach strengthens the reactions of more people, thus making a generalisable set of findings possible (Patton, 2002). It might also keep the exploration away from the 'world views' of participants, as well as from potential variances or behaviour in a real world context (Davies, 2003).

Another concern is that mixed approaches may make presentation of validity more difficult. In quantitative research, reliability and validity can be evaluated through a series of standardised procedures, but this does not mean that bias can easily be avoided. In qualitative research, both issues in conjunction with reliability and validity or trustworthiness, are more debatable than quantitative. It is argued that the researcher, viewed as the '*instrument*" (Patton, 2002) as well as specifically to say the "*human observer*", is notoriously unreliable (Finn, 2000). In discussion of possible solutions for reliability by ethnographers, reflecting on their research process and evaluating their influences are encouraged (Finn, 2000). For a team, checking for consistent patterns of theme development among team members is useful (Creswell, 2003). On the other hand, there are useful strategies to check the reliability of the findings, as suggested by Creswell (2003:196). Theses include triangulation of data sources, member-checking and detailed description. With respect to mixed methods research, however, validity issues involve considerations that different sources of data are composed of the assumptions and methods that elicit them (Brannen, 2005). As Denzin (1970) noted, it cannot *unproblematically* be assumed that data obtained from a variety of sources in triangulation strategy will corroborate one another. Brannen thus suggested a mixed methods research is required to take consideration of multi-method strategy into more phases of the research process, such as research design, data collection, and

interpretation and contextualization of data. For this research, it was felt that the adoption of a mixed-methods approach would give a more holistic picture of the research (Creswell, 2003; Saunders *et al.*, 2003).

3.2.3. Research process undertaken in the study

The initial interest in the specific issues of the case study led the researcher to undertake this research. This was followed by an extensive literature search and in-depth consultation with the supervisory team. This helped identify key issues and questions, and to develop the conceptual framework. This suggested the potential of systematic exploration of the phenomenon of case study region and the associated processes and impacts. Informed by conceptual framework, the mixed-methods approach was adopted to collect data from various sources quantitatively and qualitatively. With data obtained, hypothesis testing and data analysis were undertaken to yield results. These were analysed and discussed to generate conclusions and suggestions. The research process undertaken in this research is detailed in Figure 3.1.

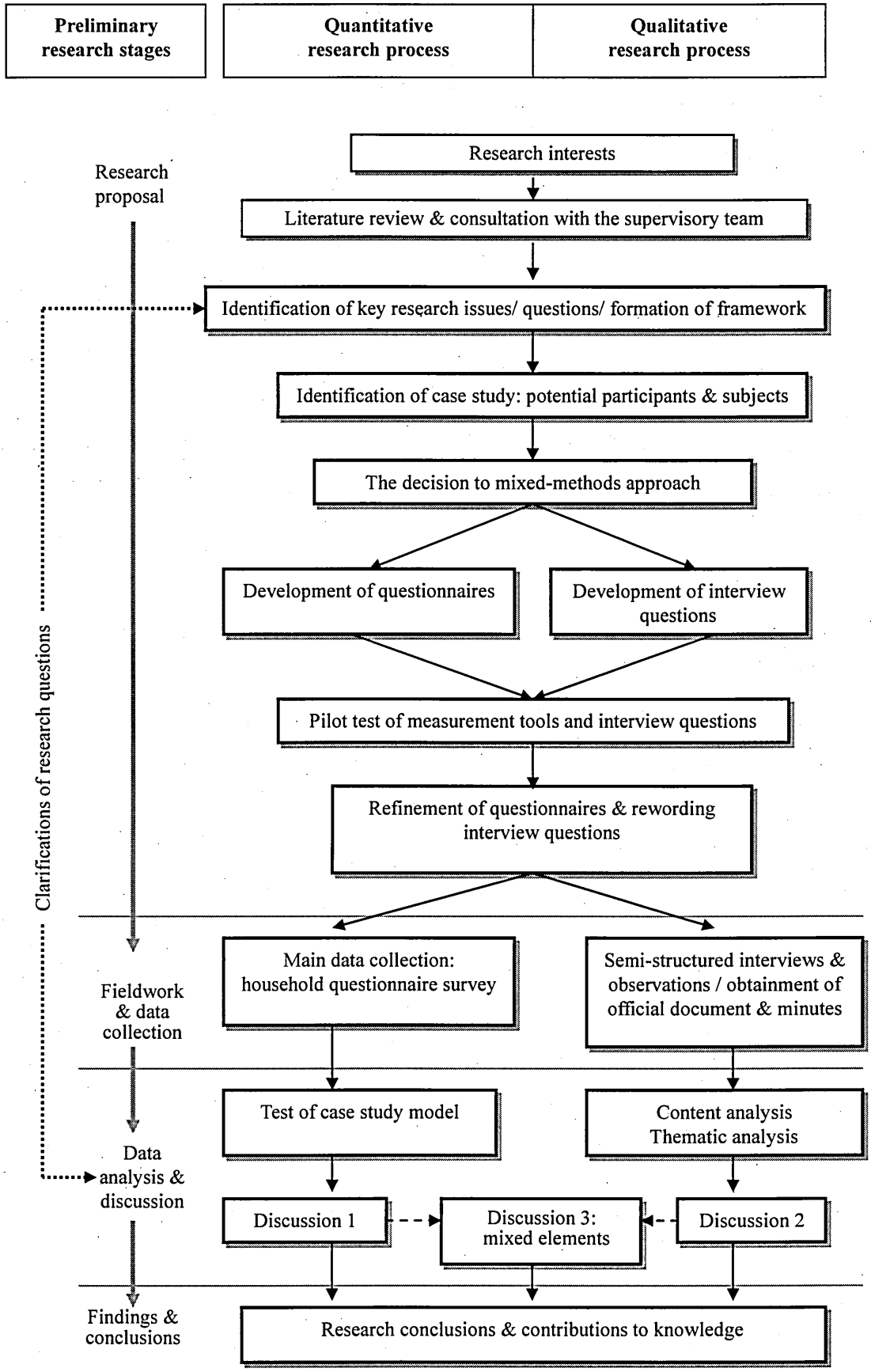


Figure 3.1 The process undertaken in the current research

3.3.0. Section Three: Data Collection.

Primary data collection was carried out between January and March, 2007, via the distribution of questionnaires, semi-structured and unstructured interviews and observation. Issues relating to the potential limitations of the process are discussed. A series of interviews (though conducted during planned fieldwork) needed follow-up contact, as much data and official reports were to be released. In the early phase of fieldwork, interviewees were selected in accordance with the sampling pool as planned in the research proposal. From this experience, snowball and chain-sampling methods were then adopted (Pattone, 1990; Denscombe, 1998; Mills *et al.*, 2000), thereby providing opportunities to approach further "key" informants.

3.3.1 Qualitative research methods

Qualitative research, from the point of view of Denzin (1994), is a broad approach to the study of social phenomena, assuming that it relies on diverse data-gathering techniques to make meaning of social phenomena (Rossman & Rallis, 1998). To gain a deep understanding of subject matter, according to Finn *et al.* (2000), qualitative approach is appropriate. The study of the sport mega-event in Kaohsiung City was required to explore in depth the perspectives of the different parties involved, whereby qualitative methods were considered. As such, efforts can be made to see what constitutes social reality through the eyes of the participants (Corbetta, 2003).

This study adopted three key qualitative techniques: *semi-structured interviews*, *documentation analysis* and *observation*. Through a series of methods of understanding the research topic in greater detail, Saunders *et al.* (2007) noted the use of interviews to help a researcher to gather valid and reliable data that are relevant to research questions and objectives. Further to this, interviews yield insights into people's experiences, opinions, values, aspirations, attitudes, feelings and biographies (Veal, 1997; May, 2001), from the perspective of the informants, thus enabling their 'world views' to be acquired (Kvale, 1996). Semi-structured in-depth interviews were considered rather than other methods (e.g. structured and focus group interviews). With semi-structured interviews the interviewer is allowed to 'probe' the answers given (Saunders *et al.*, 2007), and thereby an exploratory nature is undertaken (Bryman, 2001; Oppenheim,

1992). An *interview guide* (containing a list of topics to be explored and questions to be asked) was used to conduct semi-structured interviews that produced a greater range of responses and therefore more holistic results than could have been obtained from structured interviews - as mentioned by Patton (1990) and Bryman (2001).

With respect to *documentation collection*, it was the second qualitative technique applied in this study. Types of document gathered as secondary data in the study include *written materials* (e.g. minutes of meetings, reports, transcripts of speeches and administrative documents), and *non-written materials* (e.g. voice and video recordings, pictures, posters). The documents detailed in Table 3.1 provided further potential research advantages.

Table 3.1 Advantages of the use of documents as secondary data

May have fewer resource requirements, in particular time and money
Unobtrusive: Cowton (1998) refers to this advantage as *eavesdropping*, emphasizing its benefits for sensitive situations.
Longitudinal studies may be feasible: For many research projects time constraints mean that secondary data provide the only possibility of undertaking longitudinal studies.
Can provide comparative and contextual data: This means that you can place your own findings within a more general context or, alternatively, triangulate your findings.
Can result in unforeseen discoveries: Reanalysing secondary data can also lead to unforeseen or unexpected new discoveries.
Permanence of data: Unlike data that you collect yourself, secondary data generally provide a source of data that is both permanent and they may be checked relatively easily by others, being more open to public scrutiny.

Source: Saunders *et al.* (2007: 257-260)

Types of documents (Table 3.2) were gathered during the field trip and the following five months since some of them were required to produce and to be authorised to reach. Official minutes, reports, transcripts, research studies, local and national newspapers and important administrative documents relating to the Kaohsiung Organising Committee were examined. The sources of the documents relating to the 2009 World Games (provided by either university research group or relevant

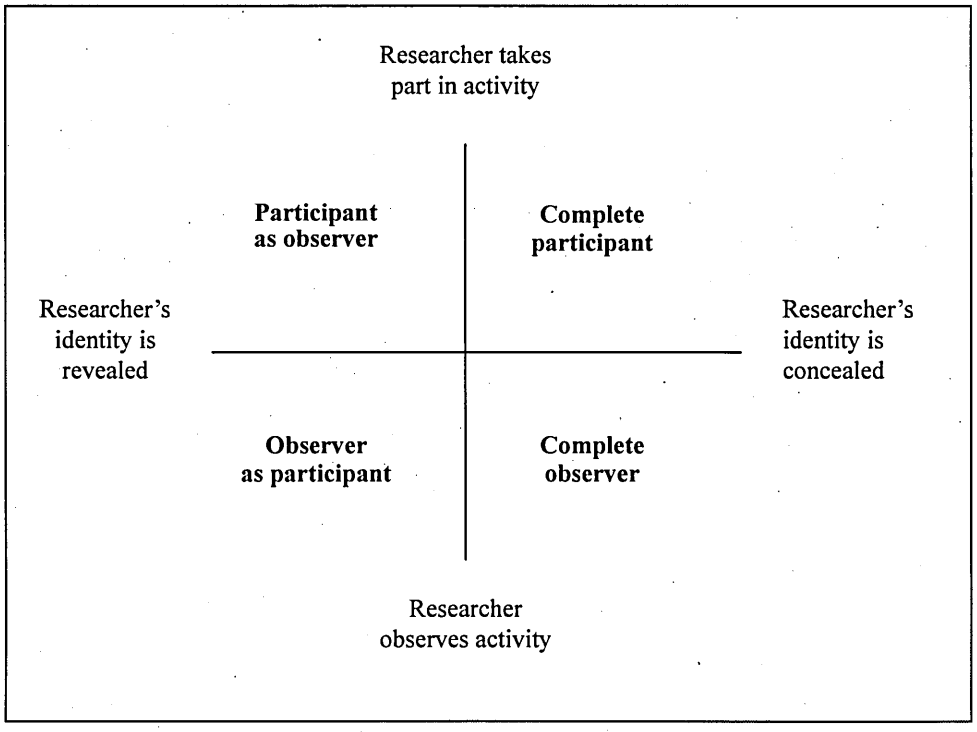
governmental officials) were sought as further evidence for triangulation. *Non-written materials* (e.g. VCDs, voice recordings, pamphlet, posters and photographs) in association with the Games propaganda or the City development context, were also very helpful when examining changes that occurred in the City before and after the successful bid for the World Games. Other sources of these documents were the Kaohsiung City government (e.g. the Games running budgets and organisational charts), OPEN database (the Official Publications Echo Network), and results of studies carried out by research groups and scholars (e.g. proposals to substantially repair sports facilities for the Games). However, it was recognised that, although there are some merits in using these documents, their specific purpose and intended audience should be taken into consideration in order to avoid potential bias (Saunders *et al.*, 2007; Yin 1994).

Table 3.2 Types of documents adopted in this research

Written materials
1.Official reports and minutes of meetings and other written reports in conjunction with the Games planning within city development agenda 2. Administrative documents, progress reports, proposals and reports documented with particular experiences learnt from other World Games' host cities (Dusburg and Akita) 3. Research studies as well as books published on topics involved in the World Games 4. Local and national newspaper articles relating to the Games and Kaohsiung City development
Non-written materials
1.Photographs shot during period of the Lantern Festival 2.VCDs obtained from city government 3.Voice recordings from a training workshop in relation to the topic of the World Games

During fieldwork for the World Games, a Lantern Festival was observed. In terms of observational techniques, as referred to in Gill and Johnson's (2002) typology (see Figure 3.2), participant-observation has been most frequently used in anthropological studies (Yin, 2003). However, "*direct observation*" was adopted instead of participant-observation technique in this study in that it was created by the researcher when making a field visit to the case study "site" (Yin, 1994; 2003). The yearly Festival was intended to take place along the Love River, the most popular landmark in Kaohsiung, so as to attract as many visitors and citizens as possible. So the Kaohsiung Organising Committee took the opportunity to showcase the World Games in the form of static material (pictures and posters) and the dynamic (an experience), the main purpose being to introduce to the visitors attending the Lantern Festival all the types of

sports that will be played in the World Games (Kaohsiung citizens in particular). The observational activity in this study was regarded as a necessity, though further consideration was given to the provision of evidence for triangulation rather than carrying out ethnographic fieldwork. Nevertheless, photographs were taken, notes were taken, and thus, to quote Yin (2003:93), this helped "convey important case characteristics to outside observers".



Adapted from Saunders *et al.*, 2007

Figure 3.2 Gill & Johnson's (2002) typology of participant observation researcher roles

The research methods used for this research were to assist data triangulation, and therefore further the reliability of both the analysis process and the study findings. Through these methods, four kinds of data sources were sought as shown in Table 3.3, together with their potential advantages and disadvantages.

Table 3.3 Qualitative data sources for this research

Source of evidence	Potential advantage	Potential disadvantage
Interview (fieldwork)	*targeted, focuses directly on case study topic *insightful, provides perceived causal inferences	*bias due to poorly constructed questions *response bias *inaccuracies due to poor recall *reflexivity, interviewee gives what interviewer wants to hear
Documentation (literature, desk search, field visits)	*stable, can be reviewed repeatedly *unobtrusive, not created as a result of the case study *exact, contains exact names, references, and details of an event *broad coverage, long span of time, many events, and many settings	*retrievability can be low *biased selectivity, if collection is incomplete *reporting bias, reflects (unknown) bias of author *access, may be deliberately blocked
Archival records (literature, desk search, field visits)	*same as above for documentation *precise and quantitative	*same as above for documentation *accessibility due to privacy reasons
Participant observation (field visits)	*reality, covers events in real time *contextual, covers context of event *insightful into interpersonal behavior and motives	*time-consuming *selectivity, unless broad coverage *reflexivity, event may proceed differently because it is being observed *cost, hours needed by human observers *bias due to investigator's manipulation of events

Adapted from Yin (2003)

3.3.2. The research ethics for the study

Ethical issues usually cover a standard set of those such as informed consent, confidentiality, harm to informants, ownership of 'data', and protection of informants (Pink, 2001). The reason why these were raised, according to Silverman (2000), is that they are influential and might contaminate the research, particularly in qualitative research. In this study, the challenges in qualitative interviewing will be confronted, specifically because of its involvement in the power of interviews. In this sense, the appropriateness of each interview question relevant to sensitive affairs or confidentiality was discussed with the supervisory team. The reason why the interview questions were designed to avoid particularly sensitive matters was that it was felt that this might help to encourage the interviewees to disclose core issues frankly and openly. Since the nature of this study largely relates to understanding of the process of bidding for the event, the formation of associated policies and present implementation, important archives and unpublished information are essentially supportive of this subject. Hence it

is crucial for the researcher to know how hard to push for sensitive information (Patton, 2002) and should provide the interviewee with a statement in advance, promising to delete any comments they may subsequently regret having revealed to the researcher.

There are also important issues associated with gaining access to selected representatives from various organisations and from the different management tiers in government agencies. Since the interviews involved officials from local and central levels, and further information was needed in regard to confidential documentation, the informants were sent two letters for individuals or organisations. One was to interpret the study area, to outline the general questions to be asked and to stress that the results are exclusively for academic purposes (informed consent); the other was authorized by the supervisory team for the purpose of winning trustworthiness, and this was sent before carrying out interview. Confidentiality and anonymity issues were also elaborated in both letters.

The observations involved taking photographs as visual evidence but research of this kind is debatable (Bryman, 2004). As Pink (2001) noted, the visual research method is concerned with issues, *covert* vs. *collaborative ('disguised'* in Bryman, 2004*)* methods, for example. The covert research method implies that, to collect data, the researcher may use hidden tools (e.g. a camera) or be under the guise of a role other than that of researcher. As opposed to covert research, a collaborative (or disguised) method suggests that participants are aware of the research purpose and will work together with researcher to produce visual data (Pink, 2001). In this research, lack of informed consent is inevitable. Since the observations were conducted in a leisure and tourism environment at the Lantern Festival, thousands of people flooded in at the same time. Under the circumstances it was impractical to obtain informed consent even from several small groups of visitors in some restricted zones or from the event organisers. Also in this study care was taken to avoid clear representation of individuals in the photographs, which will be illustrated in this thesis or published in journal articles and at conferences. Empirically there are ethical concerns in this research relating to invasion of privacy and the covert method applied and the emphases necessarily placed on ethical issues throughout the research process, as put by May (2001:67) are, briefly "*required not only to maintain public confidence and to try to project individuals and groups from the illegitimate use of research findings, but also to ensure its status as a legitimate and worthwhile undertaking*".

3.3.3. Case study--The World Games

The sports mega-event is an inherently complicated phenomenon. Events of similar scale held in cities of different sizes may turn out very differently. To understand how a host city or region is impacted upon through staging a mega-event, requires knowledge of the characteristics of the study region or city as well as of the event. These are necessarily approached both generally and in detail.

3.3.3.1. The Kaohsiung City as a Case Study

Kaohsiung is the biggest commercial harbour and the second biggest city in Taiwan. It has a population of 1.5 million, half of which is labour. Kaohsiung harbour ranks sixth in the world in terms of cargo volumes. Kaohsiung is situated on the southwestern coast of Taiwan (see Figure 3.3) and comprises an area of 154 sq. km. The industry is mostly heavy industry and petrochemicals. The airport can handle all kinds of aircraft including the Boeing 747-400 with the opening of the New International Terminal. Passenger traffic has increased to 14,000 person-trips every day (http://www.kcg.gov.tw/). With its positives in infrastructure and location *etc*, and following a presentation to the evaluation committee, Kaohsiung won the bid for the 2009 World Games.

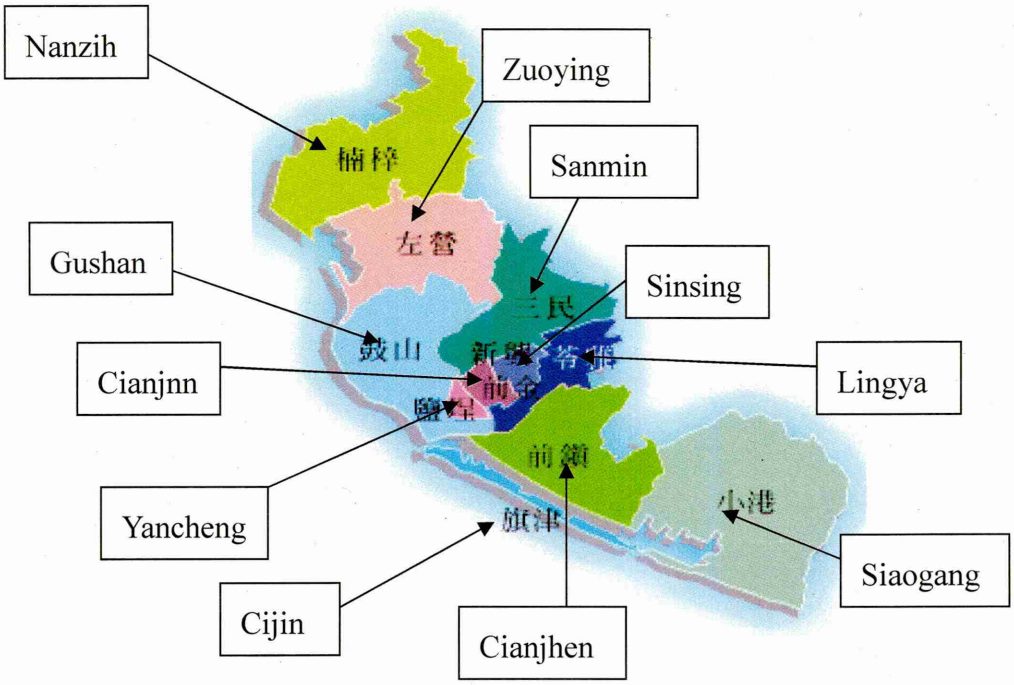
- Population:1.51 M
- 154 Square km
- Mean Annual temperature: 29° C
- Humidity 75%
- Mean annual rainfall: 29.3 cm

Figure 3.3 The location of Kaohsiung City

3.3.3.2. Districts and households

Eleven districts within Kaohsiung City are displayed in Figure 3.4. Since 1979 the Kaohsiung City has been officially a municipality under the direct jurisdiction of Central Government. The change of total households of each district is also reflected in Table 3.4. The districts we are especially interested in before the Games happen include Zuoying and Cianjnn Districts. This is firstly because competition sites such as the Main Stadium, the Lotus Lake, the Kaohsiung Dome and the World Games Boulevard are located in Zuoying District. The Love River-side is situated in Cianjnn District and is provided for the use of Boules Sports. This area has long been the most popular site to hold various festivals, both nationally and internationally. Therefore people living in this area are more aware of the event and it matters in their lives. Secondly, the neighbourhoods targeted within each district are most likely to be influenced during this stage. The current research focuses on the 'main effects' rather than 'spill over effects'.

Communities recognised within different neighbourhoods are diverse in nature. For example, those around the Lotus Lake and the Main Stadium are composed of old communities are often with the house-based style of residences. In comparison, most communities around the Kaohsiung Dome and the Love River area are apartment-style residences usually up to 30 storeys. Furthermore, for metropolitan Taiwan, business and residential areas are usually mixed together. This presented differences in sampling.



Source: Adapted from Civil Affairs Bureau, Kaohsiung City Government, at http://cabu.kcg.gov.tw/

Figure 3.4 Districts, Kaohsiung City

Table 3.4 The number of households within each District

Year / Districts	1979	1984	1988	1994	1999	2004	2006
Yancheng	10186	10580	10442	10494	11007	11263	11224
Gushan	21099	24596	28361	31290	35292	39592	44094
Zuoying*	25339	26749	29816	35573	53726	66187	**68489**
Nanzih	16884	23377	28359	36988	47121	53984	57128
Sanmin	48990	64808	81787	92951	111853	123301	125750
Sinsing	18806	19956	21150	21253	21505	22810	22722
Cianjnn*	10821	10996	11252	11672	12016	12164	**12239**
Lingya	41532	51219	60182	62777	66663	68817	69533
Cianjhen	42443	47875	54720	58309	65419	70402	71819
Cijin	7471	7677	8175	10508	10872	10730	10669
Siaogang	16925	22881	32162	40460	49537	58127	57342

*Zuoying and Cianjnn districts are targeted in the current research

Source: Adapted from Civil Affairs Bureau, Kaohsiung City Government, at http://cabu.kcg.gov.tw/

3.3.3.3. The World Games as a phenomenon for study

What is the World Games? It is an international multi-sports event hosted by the International World Games Association (IWGA), under the patronage of the International Olympic Committee (IOC) (www.pref.akita.jp). It focuses on sports that are not contested in the Olympic Games. The Games are held in the year following the Summer Olympic Games. Unlike Olympic Games, athletes participating in the World Games are selected by the International Federations (IFs) of each sport rather than by their countries. Its other characteristic is that existing sports facilities are encouraged as the venues for the Games. Furthermore, the decision on the total number of sports expected to compete can also be made by hosting country according to their willingness and resources available. It is therefore flexible. A normal characteristic is the encouragement of more interaction between athletes than competition.

The initiative of the founding meeting came in Seoul in 1980, when a group of twelve International Sports Federations formed the World Games Council, later renamed the International World Games Association. The meeting was chaired by Dr. UN Young Kim, who is the President of the International Taekwondo Federation. Among other things, one of the purposes for the council was to create more exposure to the media and to inspire interest from spectators in the sports with respect to the Federations.

Table 3.5 shows the locations of the first eight World Games and numbers of participants. Total participants of athletes and staff have increased gradually. In terms of the definition of a mega event, the Games are clearly within the discussion boundary of a sports-led mega event. With regard to the importance of further exploration of this event, a scoping assessment suggested few systematic studies to be conducted and published. Recently-released news on the website of the 2005 hosting city (Duisburg) in Germany, claimed that the extraordinary success of the event was proved by the media analysis (http://www.worldgames2005.de/en/).

> *WIGE MEDIA, Host Broadcaster of the games, announced the balance three months after the closing ceremony of the 7th World Games, which was held between July 14th and July 24th, 2005. German TV alone had 116*

million viewers and pictures of the games were shown in 137 countries around the world. Nearly 450 hours of broadcasting were disclosed in the report. Duisburg and its partner cities had already announced a new record of more than 500,000 visitors during the games.

Yet, despite the benefits that are announced, the question remains as to how they are spread over the host City's residents. In Germany an overall evaluation was lacking; yet reports of economic impact assessments dominate the agenda for major sporting events. Therefore, in order to understand the complexities and implications for destination of the World Games to be held in 2009, this research examined the perceived impacts on the host destination. In this way, destination can better assess the true success of an event based on the short- and long-term characteristics of the impacts (Barker *et al.*, 2002).

More recently, the 2009 Kaohsiung World Games delegation participated in the SportAccord Conference in South Korea. In the General Association of International Sports Federations' annual meeting on April 7th 2006, the Chief Executive Officer of the Kaohsiung Organizing Committee, I-Heng Chen, and president of International World Games Association (IWGA), Mr. Ron Froehlich, together confirmed that 26 official sports will participate in the 2009 World Games (see Table 3.5).

Table 3.5 Locations of the First 8 World Games and numbers of participants

	Year	Host nation	Sports	Total Nations	Total Athletes
1st	1981	Santa Clara (USA)	18	n/a	1265
2nd	1985	London (GBR)	23	n/a	1550
3rd	1989	Karlsruhe (GER)	45	n/a	1965
4th	1993	The Hague (NED)	30	69	2275
5th	1997	Lahti (FIN)	30	78	2600
6th	2001	Akita (JAP)	26	93	3200
7th	2005	Duisburg (GER)	32	89	3400
8th	2009	Kaohsiung (ROC)	*32 (26, 6)	(around 100)	(over 4,000)

Source: Adapted from KOC (n.d.)
http://www.worldgames2009.tw/english/World_Game/History.asp

*There are 26 official sports and 6 invitational sports in 2009 World Games.

3.3.3.4. 2001 Akita World Games

In June 1997, receiving support from Japan World Games Association (JWGA) and Akita County, entrepreneurs created The Akita Organising Committee (AOC, see Chart 3.1) in April 1998. For Akita County, there was also an office responsible for hosting the Games. The AOC and the office did not work together until they actually merged in April 2000. In the meantime six departments were confirmed: Administration Department, Public Relations Department, Cultural Ceremony Department, Marketing Department, Games Operating Department and Sport Department. The number of staff involved in the operation of the Games approached 112. The distribution of human resources within the two organisations is outlined in Table 3.6.

A characteristic of the Games was to use existing venues; this allowed relatively small-scale cities to stage the World Games. On this basis, beside Akita city, the 2001 World Games took place within three cities, four towns and one village all over Akita prefecture (www.pref.akita.jp).

Table 3.6 Human Resources for 2001 Akita World Games

Time	Organising Committee	Akita County Office	Office
June 1997	2 staff	6 staff	Separate
April 1998	15 staff	6 staff	Separate
April 2000	46 staff	35 staff	Merged and work in the same office
August 2001	112 staffs		Games Operation during the event

Source: Adapted from 吳明上, 2006, p.40.

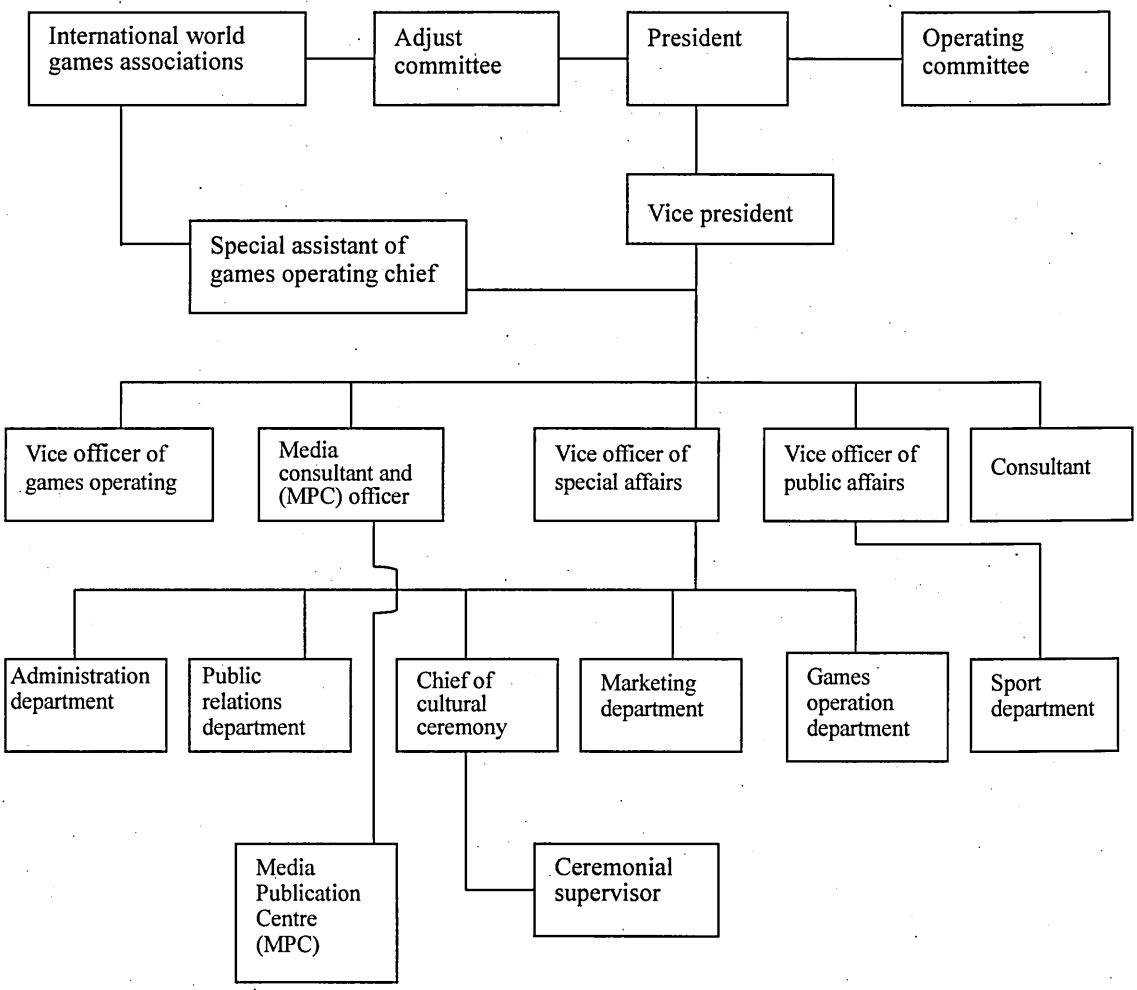


Chart 3.1 2001 Akita Organising Committee Chart

Since the structure of the AOC was regarded as one of the examples used by the Kaohsiung City Government to initiate its own committee, it was then necessary to further understand how the committee operated. The main functions of each department were as follows:

A. Administration Department:

1. VIP Reception

1) The department took the responsibility for giving a reception for the IWGA President and Vice President, and the Chairman of the department was assigned a car with driver. An interpreter accompanied each of them in order to assist with cultural communication and to undergo inspection.

2) To plan the schedule for the next day.

2. Departure and Arrival

1) ID cards were used for categorising different levels of participants.

2) To co-operate with Embassies abroad to confirm participants' background

3. Interpreter

1) To recruit 98 interpreters including English, French, German, Spanish, Dutch, Russian, Chinese and Korean languages.

2) Interpreters were appointed to the Games Convention, VIP Reception, sports teams and various games sites.

B. Public Relations Department:

1. In addition to the six main departments, a media consultant and an MPC officer were employed to work on news releases and co-operation with the mass media.
2. The Public Relations Department governed the Documentary Office, the Broadcasting Office and the Advertisement Office.
3. The Broadcasting Office governed the International Broadcast Centre.
4. The Advertisement Office governed the Information Exchange Centre.

C. Cultural Ceremony Department:

1. One of the tasks for this Department was to arrange the Opening and Closing Ceremonies.
2. To hold various evening parties, including a blessing ceremony, a greeting party, a players' night and a farewell party.
3. To design medals and to prepare souvenirs for the staffs and all the participants.
4. Cultural exchange: To issue the World Games commemorative stamps; to mark buses and airplanes arriving in Akita with the sign of the World Games.
5. The World Games Square: To provide all of the participants with a place to go shopping, to explore the local culture and to enjoy music and folk shows etc.
6. Greeting Centre: To set up several information centres in heart of Akita City and the suburbs; to provide services for the participants, such as local product and art, tourism information, cultural experiencing activities and an art exhibition.

D. Marketing Department:

1. Ticket sales: Six months before the games, the Department started to sell tickets.

2. Spectators service: To offer a spectators guide pamphlet and to introduce them to live information concerning the various games.
3. Sponsorship: To co-operate with Dentsu (the biggest advertising agent in Japan), and thus won the sponsorship from NHK; to raise funds.

E. Games Operation Department:

1. To plan the transportation project.
2. VIP reception
3. To assign interpreters and to distribute special car services to VIPs
4. Accommodation (hotels being close to various sites) and catering (buffet or meal boxes)
5. Accreditation: To issue five types of cards for categorisation of all the participants, depicted in Table 3.7 as follows:

Table 3.7 Five Types of ID Cards Issued in 2001 Akita World Games

Types (quantity)	Types of Participants	Targeted Areas
A Card (578)	VIP, AOC staffs, Delegation of 2005 host country, representatives of sponsors	For all areas, except access to room for testing dope
B Card (68)	TD of International Federations (IF)	Available for all games sites
C Card (3986)	Players from International Federations	Games sites, spectator seats
D Card (1981)	Journalists and staffs for broadcasting	Broadcasting areas
E Card (5597)	AOC staffs, staffs of games convention, sponsors	Available for all areas, except spectator seats

Source: Adapted from 蕭元哲 *et al.*, 2006, p.15

6. Communication: To set up international call centre for temporary use, wireless set, and SOS centre.

F. Sport Department:

1. To assign each games site a group to operate awarding ceremony, to set up operating body and competition organisation in each games sites.
2. To distribute interpreters to each games site.
3. To assign each sport team an interpreter.

After three sets of modifications, the budget plan for hosting the games was finalised in 2000 (see Table 3.8). The organisers budgeted 1.5 billion Yen for the initial plan - fundraising accounting for one half (from donations, ticket sales, advertising *etc.*) and government contributing the other half. Then, other expenses such as volunteers' uniform, catering and transportation contributed an extra 1 billion Yen to the budget. However, although fundraising was considered a means of covering the extra fees (and in any case this was tried), it seemed difficult to accomplish the mission during a depression, so the budget was eventually finalized at 2.3 billion Yen, with fundraising accounting for 0.75 billion and government being responsible for the remainder.

Table 3.8 Budget for 2001 Akita World Games **(Unit: Thousand $NTD)**

Revenue		
Sponsorship	128,520	18.29%
Ticket sales	37,240	5.30%
Subsidy	51,520	7.33%
Donation	39,760	5.36%
Akita County contribution	383,880	54.62%
Shi Ting village contribution	49,840	7.09%
Others	12,040	1.71%
Total	702,800	100%
Expenditure		
Management	89,040	12.67%
Advertising	51,800	7.37%
Market activities	71,120	10.12%
Consultations with transportation	26,880	3.82%
Sports operating body	379,960	54.06%
total	618,800	
Surplus	84,000(**£1400,000**)	**11.95%**
Amount	702,800(**£11713,300**)	100%

(1 JPY * 0.28 = 1 NTD; 1GRP = 60 NTD) Source: Adapted from 蕭元哲 *et al.*, 2006, p.61

3.3.3.5. 2005 Duisburg World Games

The Duisburg Organising Committee (DOC, see Chart 3.2) - organised in the year when Duisburg was contracted to stage the 2005 World Games - took responsibility for planning the Games whilst, during the Games, another organisation (see Chart 3.3) was set up to command them.

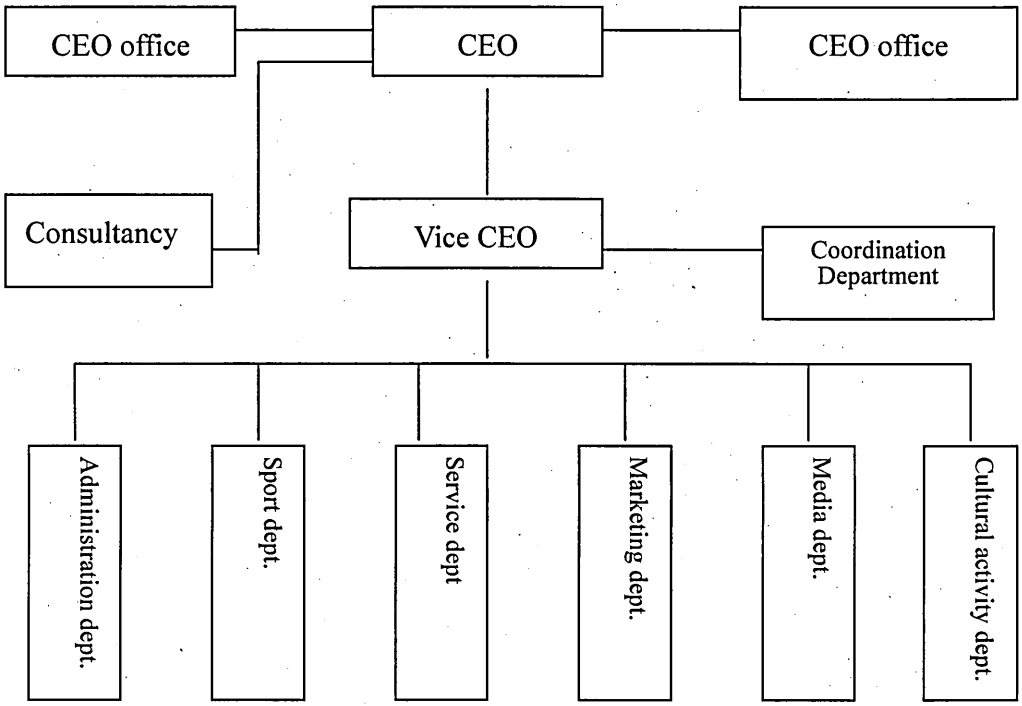


Chart 3.2 2005 Duisburg Organising Committee Chart

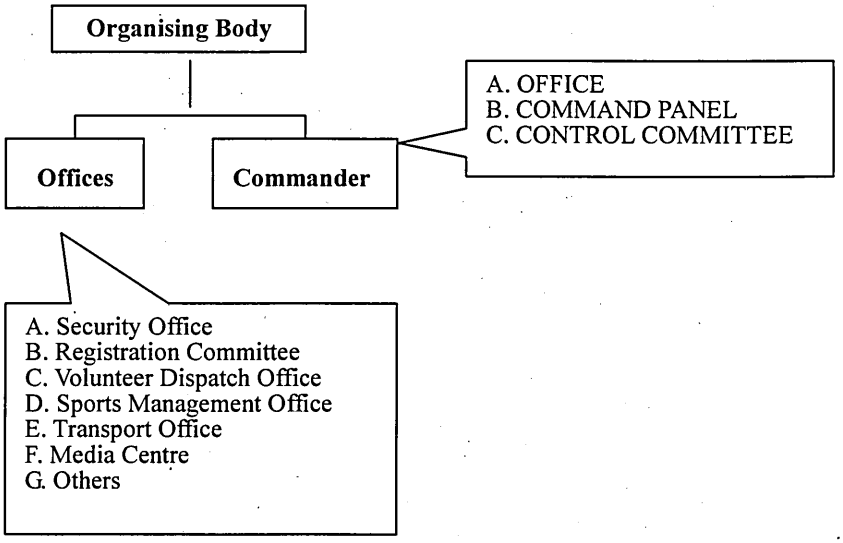


Chart 3.3 2005 DOC Organising Structure Chart during the games

The Duisburg Organising Committee consisted of 336three hundred and thirty-six staff, 152 of whom came from Duisburg City officials, 13 from other host cities, 15 from state-run companies and 156 from entrepreneurs (Table 3.9). Of the total staff, over half were officials (an estimated 180). So the numbers involved here, when added those of the AOC, served as a guideline for the Kaohsiung City Government to form an organising committee when hosting their similar-scale event.

Table 3.9 Human Resource for Duisburg Organising Committee

Sources of staffs	Number (persons)
Duisburg City officials	152
Other host cities	13
State-run company	15
Private departments	156
Total	336 (including 180 officials)

Note: The total staffs mentioned here excluded those from during the games.

By the end of 2004 the Games' budget was confirmed, the decision having been made according to the principle of first outlining a rough estimate of expenditure and on this basis, seeking a variety of potential sources of revenues to balance the expense. The first draft of the total budget was estimated up to 16m Euros but the final conclusion following modification was that the total final expenditure would be 14.8m Euros (excluding the construction expenses of the main stadium). As can be seen from the following Table 3.10, the central government and city government provided a high proportion of total revenues, at around fifty per cent (49.32%), with a further one-third (31.21%) comprising the Duisburg marketing company, Duisburg companies and other sponsors and product sales. Ticket sales account for 9.47% of revenue. What is already shown in the Table is a relatively rough outline based on a limited data set. The actual spend by each department, according to DOC, differs somewhat from the proposed budget (see Table 3.11).

However, as indicated by the DOC interviewees, the cost of hosting the Games exceeded total planned revenues, the added spend being attributed to a need for more security guards (increased from 300 to 700) and other unanticipated expenses. The total income from ticket sales was higher than expected and will be used to balance the cost. Under the circumstances, if this is not the case, then the shortage of revenue will need to be covered by revenues from either city government or central government.

Table 3.10 Budget for 2005 Duisburg World Games

Sources	Revenues (Unit: Ten thousand Euros)	Revenues (%)
State government	230	15.54%
Federal government	200	13.51%
Duisburg city government	300	20.27%
Duisburg marketing company	200	13.51%
Duisburg companies	300	10.27%
Ticket sale	140	9.47%
Other sponsors and products	100	7.43%
Total	1480	100%

Source: adapted from Finance Bureau Kaohsiung City, 2006, p.59; 蕭元哲 *et al.*, 2006. p.61

Table 3.11 The distribution of budget to each department (Unit: Ten thousand Euros)

Items	1	2	3	4	5	6	7	Total
Amount	59	328	367	302.4	162.4	81.7	179.5	1480
Per cent	3.99%	22.16%	24.80%	20.43%	10.97%	5.52%	12.13%	100%

Note: 1. Management; 2. Administration; 3. Sport; 4. Service; 5. Marketing; 6. Media; 7. Culture.

3.3.3.6. 2009 Kaohsiung World Games

3.4.3.6.i Application Timeline

The bidding process was presented in Table 3.12 to outline the decision-making process. This is important to this research for further examination.

Table 3.12 2009 Kaohsiung World Games Application Timeline

Timeline	Event
July 2002	The National Council on Physical Fitness and Sports invited the International World Games Association (IWGA) President, Ron Froehlich, to Taiwan, to begin the process of applying and evaluating hosting rights for the "World Games 2009".
7th June, 2003	Kaohsiung City Mayor, Frank Hsieh, announced that the 2009 World Games application team would be assembled and led by Deputy Mayor, Yao Kao-Chiao.
June 11th, 2003	Through the Taipei Sports Federation Building, the Vice Chairman of the National Council on Physical Fitness and Sports, Jhu Shou-cian, organized the first preparatory meeting for the 2009 World Games application. Crucial plans for necessary construction as well as lines of actions were debated.
18th June, 2003	The first meeting was held in Kaohsiung City by the World Games 2009 application team when various questions for the City Evaluation Questionnaire were considered.
22nd August, 2003	The City Evaluation Questionnaire was delivered to the International World Games Association, and officially attained candidacy in the bid to host the 2009 World Games.
6 – 16November, 2003	The Municipal Government, together with the Central Government, formed a team of six people who initiated and prepared detailed documentation to help promote and advertise Kaohsiung's capability to host the World Games 2009.
12th May, 2004	The National Council on Physical Fitness and Sports was unofficially notified that the 2009 World Games will be held in Kaohsiung.
14th June, 2004	IWGA President, Mr. Ron Froehlich and Kaohsiung Mayor, Frank Hsieh officially co-signed the 2009 World Games hosting contracts.
July, 2005	After the 2005 Duisburg World Games finished the start of the 2009 World Games was announced.

Source: Adapted from Kaohsiung Organising Committee (http://www.worldgames2009.tw/ourcity/ourcity_01.asp)

3.3.3.6.ii Kaohsiung World Games Organising Committee

The Kaohsiung Organising Committee was set up on 31st October 2004 after the Kaohsiung City Government contracted with IWGA in June 2004 to host the 2009 World Games. As with previous the World Games Organising Committee, the KOC has undergone great changes since it was established, and the total staff will be increased to fifty-eight by January 2009 (KOC News, 27 December 2007). However, to date, the KOC has had three different Chief Executive Officers, as this in part has delayed the organising process and has attracted criticism from the IWGA. The budget for setting up the KOC was shown and discussed in Chapter Four (Section 4.1.3.1).

On the other hand, all departments of the KOC have been involved in the process. A similar situation occurred in organising 2001 Akita World Games. Charts 3.4 and 3.5 show the initial and latest structure of the KOC. The Finance Department was separated from a previous department (Administration and Finance) while the Technology Department, Security Department and CEO Office were added. Table 3.13 illustrates the sports and their locations in the 2009 World Games.

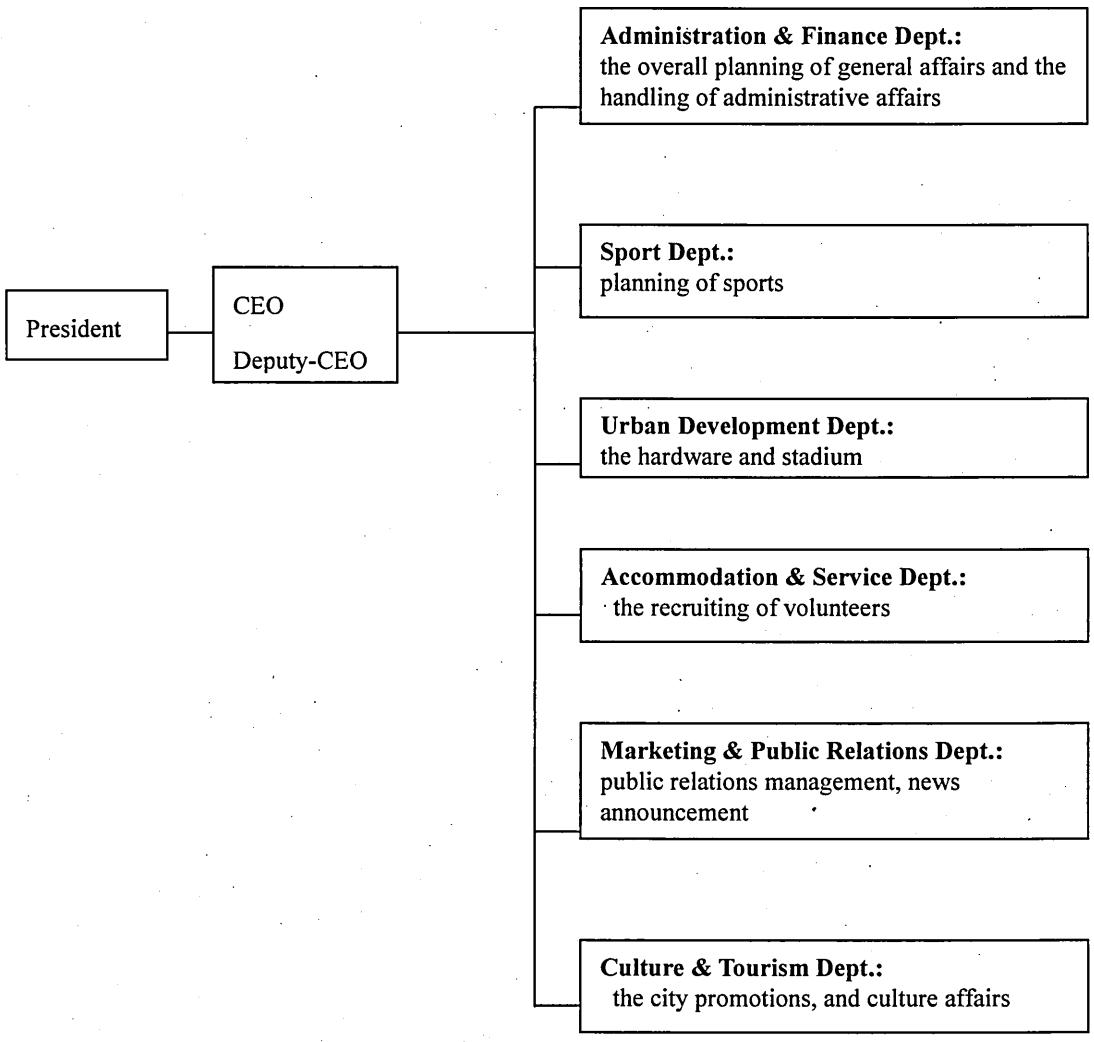


Chart 3.4 Kaohsiung Organizing Committee (KOC): Initial Chart

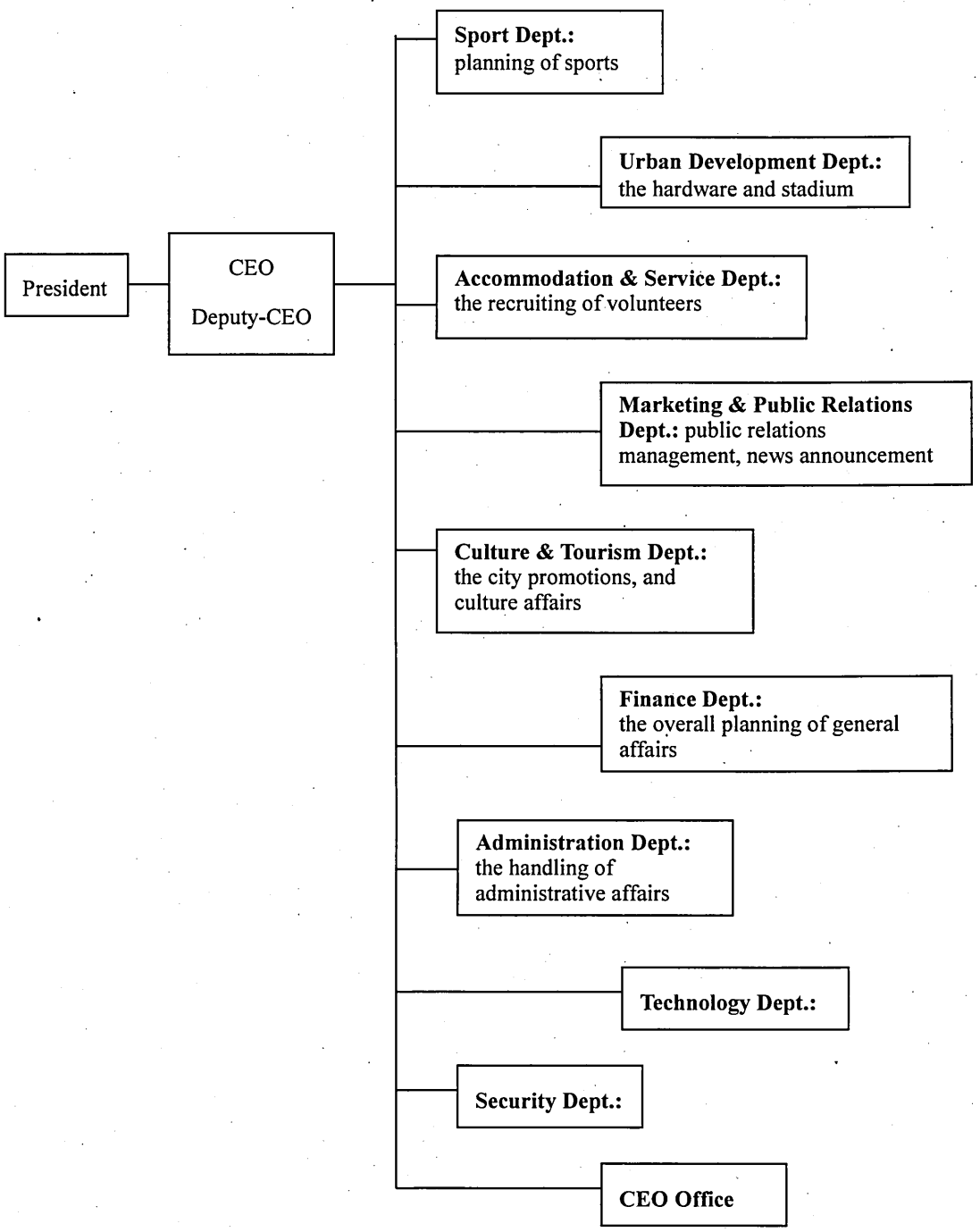


Chart 3.5 Kaohsiung Organizing Committee (KOC): Final Chart

Table 3.13 32 Items of sports held in 2009 World Games and Venues

Ball sports (8 items)	**Water sports (4 items)**	**Indoor sports (7 items)**	**Outdoor sports (7items)**
Billiards (Martial Arts Stadium)	Canoe Polo (Lotus Lake)	Dance Sports (Latin, Rock 'n' Roll, Standard) (Kaohsiung Dome)	Air Sports (Metropolitan Park)
Boules Sports (Boule Lyonnaise, Pétanque, Rafle) (Jenai Park)	Underwater Sports (Fin Swimming) (International Swimming Pool)	Body Building (Cultural Centre Chi-Teh Hall)	Archery (Cheng Chin Lake)
Bowling (Happy Bowling Centre)	Life Saving (Beach and Pool) (International Swimming Pool and Si-Tsu)	Gymnastics (Kaohsiung Dome)	Flying Disc (Main Stadium)
Fistball (Kaohsiung City Stadium)	Water Ski (Lotus Lake)	Ju-Jitsu (YSYSU Gymnasium)	Climbing (Shou-shan Junior High School)
Korfball (National Kaohsiung Normal University Gymnasium)		Karate (YSYSU Gymnasium)	Orienteering (Cheng Chin Lake)
Racquetball (Martial Arts Stadium)		Roller Sports (Yang Ming Skating Rink)	Power Lifting (NSYSU Sun Yat-Sen Hall)
Rugby 7s (Main Stadium)		Sumo (Exhibition Centre)	Tug of War (NSYSU High School Gymnasium)
Squash (Martial Arts Stadium)			
Invitational Sports: Dragon Boat (Lotus Lake), Softball (City Baseball Stadium), Indoor Hockey (NSYSU High School Gymnasium), Beach Handball (Si Tsu Bay),Wushu (Kaohsiung County Stadium), and Tchoukball (NKNY Gymnasium)			

3.3.4. Sampling design

Sample size is highly dependent on research questions and objectives, particularly collecting qualitative data (Saunders *et al.*, 2007). The validity of a research project is then more to do with data collection and analysis than with sample size (Patton, 2002).

3.3.4.1. Purposive sampling

When using interviews as a means of collecting data in qualitative research, *purposive sampling* is recommended. This approach, as noted by Bryman (2004), entails an attempt to build up a good correlation between research questions and sampling, so ensuring that the interviewees are relevant to the research questions. Further, the sampling method is usually adopted in circumstances where small samples are involved, such as in case study research and when the researcher intends to select information-rich cases (Neuman, 2000).

3.3.4.2. Snowball sampling

In terms of in-depth qualitative research the focus is typically on a relatively small sample. For this study, in turn, to draw on the probability sampling approach is unfeasible, since at least two assumptions must be satisfied: a sufficiently large number of examples selected and their random selection (Denscombe, 2003). Consequently, the criteria that are applicable to the discussion of representativeness in large samples are not suitable for this case. One justification for qualitative research for adopting non-probability sampling techniques is that the research process is intended to discover rather than to test hypotheses (Glaser and Strauss, 1967). Denscombe (2003:26) mentioned that, in qualitative research, sample size is unlikely to be known with precision or certainty at the initial stage of a research as it will generally be relatively small. In this study it is intended to use the "purposeful sampling" technique as outlined in the above discussion, as it is believed that its logic and power lies in selecting information-rich cases (Patton, 2002) and so, by studying information-rich cases, further insights and an in-depth understanding (rather than empirical generalisation) results.

Through desk research, several categories of targeted cases are identified, including public and private sectors, non-governmental organisations and local community representatives. First, the public sector refers to the KOC and KCG, which are set up for operation of the 2009 World Games - these comprise the President, the CEO and 6 departments that are responsible for planning and implementing the event, with an estimated 21 staff. Second, the private sector involves individuals or tourism-related associations (an uncertain sampling group to be contacted by means of the snowball sampling technique). Third, the non-government associations are those involved in the World Games themselves (23-28 being targeted). Fourth, local community representatives (an estimate of 4 cases). The identified cases totalled approximately 47-52.

Though the total number of samples to be included in the research will be roughly determined at the initial stage (mainly based on the time and resources available), additionally, as Yin (2003) suggested, the selection of cases may require people who are knowledgeable about each case. At the practical stage, sampling flexibility should be considered as the initial number of samples might be adjusted when targeted cases are not viable or are expected to provide only limited information. If efforts were made to arrange interviews with informants, fieldwork might work well but if, for whatever reason, certain selected cases have to be replaced, then substitutes will be selected from those previously recognised as targeted cases. Based on the above factors, it was agreed to set at 30 the number of people to be interviewed in the four sectors.

3.3.5. Interview schedule

Conducting a good interview is described as hard, creative and active work (Holstein and Gubrium, 1995 in Mason, 2002). Compared with structured questionnaire surveys (see Section 3.3.9.), it is a much more complex and exhausting task (Mason, 2002) and interviews require a great deal of planning to ensure that they are running smoothly. The whole interview schedule is discussed in detail as follows.

3.3.5.1. Interview questions

The interview questions were posed principally on the basis of specific criteria of sustainable development in sports mega-events, which were outlined in Section 2.3.4 (Table 2.12), to explore diverse sustainable development issues with specific respect to economy, society and environment. The total number of questions was finalised at 46, and these are presented in Table 3.14, including introductory and concluding questions. The questions were to adequately cover issues within the three pillars of sustainable development. Coupled with this, two forms of generic and specific questions were designed into the interview question list to achieve breadth and depth. Considering the above, there were eight questions pertaining to three economic themes, fourteen questions linking to five social themes, and twenty questions concerning eight environmental themes.

The design of the interview questions needed to ensure that the wording was fully understood by the respondents. To distinguish issues concerned between different levels from policy-makers to event executive and from central officials to local ones as well as to generate relevant data, some slight variation in the questions was needed to ensure that all of the interviewees could understand them and that the issues discussed were relevant to their duties. However, it was necessary to compare responses from different interviewees whose duties were similar. Two introductory questions were also included, to elicit information on the interviewees' background regarding their involvement with the host of the World Games. Almost all interviews were intended to begin with both questions as warm-up questions to set the interviewees at ease. Since this study was conducted in Taiwan, careful attention was also paid to ensuring that the translation into Chinese was able to accurately represent the original meaning when they are initially developed in English. Assistance was sought from two bilinguals of Chinese and English to double-check the translation.

Table 3.14 The interview questions

Introductory questions

1. How long have you and your department been involved in planning the Games?
2. Could you explain what you and your department are in charge of in the planning?

Economy

Changing consumer habits

3. As far as you know, are there any policies/action plans in place to promote 'green consumption' in Kaohsiung City? (Follow-up question: If yes, have these policies/action plans been put into practice? If not, why?)
4. In what ways will the central/Kaohsiung City government encourage people to cultivate the habits of 'green consumption' where possible in the event planning?

Investment

5. To what extent do you know about the short, medium, and long-term management plans for the Sports and Recreational Park and other sports infrastructure built for the Games?
6. In what ways do the event governing bodies manage to attract investment in Kaohsiung City from hosting the Games?
7. In what ways do the event planners incorporate related industries into hosting the Games in order to promote them?

Employment objective

8. Has the city government made any commitment to the improvement of employment opportunities when bidding for the Games?
9. Do you think that the Games will offer a considerable amount of job opportunities, both full-time and part-time, to Kaohsiung residents in the pre-event phase and after?
10. What practical approaches has the central/Kaohsiung government taken to improve the employment prospects in Kaohsiung City from hosting the Games?

Society

Accommodation and settlements

11. What is the plan for accommodation provided for athletes and participants in the Games?
12. How the decision has been made to locate the sports facilities at the present venue?
13. In what ways are these sports infrastructures designed and built in consideration of the needs/development in the local area?

Combating social exclusion

14. What plans or projects associated with the Games will be or have been developed to assist specific groups that are possibly excluded from participating in the sport?
15. To what degree have the event governing bodies taken into account the marginalised regions when setting up sports infrastructures and facilities?

Integrating the concept of sustainable development into sport event policies

16. Do you think that the organising bodies have considered sustainable development in line with the Games policies? (Follow-up question: If yes, in what aspects are the Games policies associated with the sustainable development concept? If not, why?)

Health protection

17. Have any health programmes been set up in the planning process of the Games to prevent the participants, particularly the youth, from doping/drug abuse in sports?
18. Have any programmes been introduced in the Games planning to enhance the health of local host communities in each event?

Community-wide participation

19. How is the Games information delivered to the host communities?
20. How can the host communities take part in the activities associated with the Games?
21. Has your organization come up with any projects to engage local people in voluntary service for the Games?
22. How will the host communities be consulted during the pre-event phase?
23. In terms of long-term benefits, how are the host communities able to benefit from participation in the Games?
24. Are there any action plans relevant to the Games to be taken to enhance citizens' interests in sports participation?

Table 3.14 (*Cont.*)

Environment

Protection of conservation areas and countryside

25. To what degree have efforts been made to ensure that cultural heritage and natural resources are free from damage possibly caused by construction?
26. Have any Environmental Impact Assessments been performed, where necessary, before and during the construction associated with hosting the Games?

Sports facilities

27. How has the evaluation impacted on the decision to create new sport facilities?
28. To what degree have the sports facilities been designed to fit in with the surrounding natural/man-made landscape?

Transport

29. To what extent has your organization considered to decreasing the travelling distance between the athletes' village and the various sport venues?
30. Are there any projects designed to encourage 'clean travelling' during the period of hosting the Games?
31. Are there any milestones set in the planning phase to encourage the use of public transport after the Games in Kaohsiung as a whole?

Energy

32. Do you think that the message of reducing energy consumption will be put across effectively to city residents before and during the Games?
33. Do you think the Games will promote the use of new technologies, equipments, facilities and practices that encourage energy savings and utilise renewable energy sources? (Follow-up question: If so, to what aspects will they be applied? If not, why?)
34. Are there any energy-efficient measures to be taken in hosting the Games? (Follow-up question: If yes, please give examples. If not, why not?)

Accommodation and catering at major sports events

35. Are there any waste reduction and management plans developed for the athletes' village? (Follow-up question: If yes, what aspects will the plan address? If not, why?)
36. In terms of food services, how is waste reduction encouraged?
37. Are there any possible projects for reducing energy consumption in the athletes' village? (Follow-up question: If yes, then how will you do it? If not, why not?)

Water management

38. To what degree has the water resource been protected from pollution when new infrastructures are being created or the existing venues are undergoing renovation?
39. Will the event organisers plan to reduce water consumption during the Games and continue to promote water conservation afterwards? (If yes, in what ways do you plan to do it? If not, why?)
40. Are there any 'sustainable water resource management programmes' to be included in the Games planning? (Follow-up question: If yes, please explain. If not, why not?)

Management of hazardous products, waste and pollution

41. How will the waste, pollutants, or hazardous products be treated when new infrastructures are being created or the existing facilities are undergoing renovation?
42. Has your organization implemented any measures to minimise the volume of waste to be disposed of and treated during the Games?

Quality of the biosphere and maintenance of biodiversity

43. Are there any measures to be taken to preserve the quality of the biosphere and to maintain biodiversity that might be impacted by the event planning? (Follow-up question: If yes, what is the plan? If not, why?)
44. In your opinion, what efforts can be made to help enhance the quality of biodiversity from hosting the Games?

Concluding questions

45. In your opinion, do you think that the Games are organised to improve sustainable development in Kaohsiung City?
46. What challenges have you and your department faced so far?

3.3.5.2. The interviews

The semi-structured interviews were carried out in the study, together with participant observation. Steps taken in the interviews were the following: pilot interviews and the full interviews.

3.3.5.2.i Pilot interviews

Since the interviewees were targeted at a variety of levels of organisations in Taiwan, it is important to carry out pilot interviews to ascertain whether the questions to be asked were suitable for the targeted participants. Two interviews were undertaken with Taiwanese citizens prior to targeted participants (an experienced coach who has been involved in the host of a series of national events, and a professor who has worked in a National Training Centre for over years). The interviews lasted over thirty minutes, and the feedback of comments obtained from them on the interview questions, both in terms of their sequence or of the content, was very helpful and was further used to refine the interview questions. Since the use of semi-structured interviews needs a skilled investigator (Bryman, 2001), this step was considered of importance not only in improving the quality of the interview questions but also in enabling the interviewer to be more skillful before conducting the main interviews.

3.3.5.2.ii The formal interviews

Desk research was carried out on an initial sampling pool of people targeted for interview. Some were consistently followed up and others were contacted via the "snowball sampling" technique, so reaching as many as possible of those people often missed by researchers and non-specialist personnel (Atkinson and Flint, 2001). These started in the end of December 2006 and some responses were returned in January 2007. Upon arriving at Kaohsiung City, two pilot interviews were undertaken to assist in getting semi-structured interviewing skills for the formal interviews. Though some people refused to become involved in the interviews, replacements were considered according to their suggestions or their colleagues.

Issues related to the process of a series of the interviews in this research were noted. Since the interviews involved officials from local and central levels and further information was associated with confidential documents, the participants were informed by sending them two covering letters, as included in Appendices. This was done not only to win interviewees' trustworthiness but also to encourage them to disclose core issues openly and frankly. Almost all the interviews were conducted in offices and arranged by secretaries beforehand. On entering the office, the researcher started a short but tactical conversation in order to put the participants at ease, to introduce the researcher's background, to reiterate the purpose of the research, to explain how important they are in this research and to re-assert the confidentiality issues to be dealt with. Notes were also taken during the interview and others were completed soon after each interview. As based on Patton (2002), the notes taken during interviews comprised key phrases and key terms or words, to help formulate new questions and facilitate later analysis and to serve as a back-up should devices malfunction or a tape be erased inadvertently during transcription. Although notes were taken of the interviews, observations, circumstances and other concerns raised, this was a critical time for reflection and elaboration and was critical to the rigor and validity of the qualitative inquiry. As far as the field trip was concerned, the importance of negotiating access for the interviews was realised. Since over half of the participants were governmental officials (e.g. chiefs of bureaux), without a "gatekeeper" this research was running a risk of failure owing to their tight schedules. Only one participant consented to the interview but they somehow took an adverse attitude towards the researcher and also prohibited any digital recording. Several non-governmental organisations or event experts were invited to join the interviews but sometimes they kept the interviewers waiting for long periods for "unavoidable" private reasons or unexpected communication problems.

In some cases, once the recorder was switched off and the interview was closing, the interviewees continued to develop the topic. Bryman (2004: 332) noted that such "*unsolicited accounts*" can often be more informative than those in the interview itself (Parker, 2000:236). Notes on this kind of research data were made as soon as possible after the interview and these unsolicited accounts were further utilised to improve the quality of the interview questions. Thus, as shown in Doncaster's (2006) research, the whole research process can greatly benefit from a refinement of the interview process.

3.3.5.2.iii Overall implementation of the interview

Although the fieldwork schedule was confirmed in accordance with the research proposal, some unavoidable but time-consuming situations were anticipated, for example the Chinese New Year and the fact that some key informants were heading for the bid of the 2011 Universiade. Of those contacted, four refused to attend a face-to-face interview for reasons such as "too sensitive to be disclosed at this stage" or "too busy to be interviewed". The total number of the interviewees was 32 during the field trip, with 26 interviews conducted face-to-face and 4 by telephone. Two participants provided an e-mail response and investigation reports and conference papers relevant to the 2009 Kaohsiung World Games and the 2001 Akita World Games. All but six of the interviews were carried out in person with digital recording, with the interviews being stored into computer and transcribed verbatim soon after the interview. Notes were taken during the interviews that were conducted without digital recording. Two participants were interviewed via telephone when a face-to-face interview was not possible.

At the beginning of the fieldwork, the researcher tried to contact City government officials via telephone, but this was refused. Reasons were given that they are "too busy to be interviewed" or "it might be better to ask someone else or a bureau within the City government". Therefore, as suggested by Mr. Lee (the researcher's tennis coach), the researcher sought help from the secretary of the mayor of Kaohsiung City, and the interviews then made great progress. Before each interview was arranged, two covering letters were provided, explaining the purpose of the study, the issues concerned in the research and requesting consent to the interview. Using this suggested approach for the fieldwork, a detailed résumé of the researcher was sent to each interviewee via email, together with two covering letters, and after the information was sent out, phone calls were made to double-check its receipt. In most of the cases in this research, the confirmation of the setting-up of the interviews was often through a secretary.

Devices prepared for the interviews included a digital recorder, a back-up tape recorder, two blank tapes and two new batteries. Document sheets, the guide to the interview questions and a preamble were also ready for each interview. Document sheets were important, for detailing each case with a specific date, place and time and any other information that might occur in the course of the interview (Flick, 1998). The

use of the interview guide for the interviews ensured that "the same basic lines of inquiry were pursued with each person interviewed" (Patton, 2002), and thus the questions were regarded as adequately suited to the duties and experience of the targeted interviewees (Rilla, 2004). The interview preamble served to get the interviewees well on track, and provided them with an opportunity to express their initial thoughts on the issues to be addressed. At the end of the interview a gift was given to the interviewee, as it was considered an appropriate way of thanking them to some extent for their time during office hours.

The fact that the fieldwork finished during the first three months of 2007 did not mean that the data collection procedure was complete. Instead, the researcher had six telephone interviews with community leaders during August 2007 when more attention was given to community participation. Again notes were made for further data analysis. A total of 38 interviews were undertaken. Table 3.15 details the organisations contacted, and the place, time and method for each interview.

Table 3.15 Details of final respondents and organisations

No.	Organisations	Place	Date/Time	Method	Note
1	Facility management expert	Office	05/01/2007 10.00~11.30	In person	Recording
2	Councillor of Kaohsiung County	Office	09/01/ 2007 9.30~11.00	In person	Recording and document
3	Former Mayor of Kaohsiung City and former Premier	Office	14/01/ 2007 18.00~18.40	In person	Recording
4	CEO of KOC	Office	24 /01/ 2007 15:00~15:35	In person	Refused to be recorded
5	Professor of Cheng Shiu University	Office	26/01/ 2007 13:00~13:35	In person	Unstructured interview
6	Staff of Public Works Bureau, KCG	Office	26/01/ 2007 10:00~10:25	In person	Document obtainment
7	Supervisor, Education Bureau, KCG	Office	1 March 2007 16:20~16:45	In person	Recording
8	Member of Kaohsiung City Parliament	Office	15/02/2007 18:30~19:00	In person	Recording
9	Chief Secretary, Urban Development Bureau	Office	14/03/2007 9:30 ~10:20	In person	Recording
10	Member of Marketing & Public Relations Dept., KOC	Office	07/03/2007 15:00~16:00	In person	Recording
11	Chairman of Kaohsiung City Sustainable Development Network (KCSDN)	Office	14/03/2007 14:30~15:40	In person	Recording
12	Staff of Education Bureau, KCG	n/a	16/01/2007 15:30~15:40	Telephone Email	Document obtainment and follow-up contact
13	Lee, Community Leader 1	Office	05/02/2007 10:20~10:35	In person	Recording
14	Lin, Community Leader 2	Office	05/02/2007 11.00~11.15	In person	Recording and document
15	Supervisor of Social Affairs Bureau, KCG	Office	09/03/2007 14:00~15:00	In person	Recording and document
16	Bureau of Cultural Affairs, KCG	Office	20/03/2007 17:40~18:30	In person	Recording and document
17	Sport Department, KOC	Office	27/02/2007 10:40~11:20	In person	Recording
18	Bureau of Human Resource Development (BHRD), KCG	Office	16/02/2007 9:00~9:30	In person	Recording
19	A Supervisor of Education Bureau	A hall of elementary school	14/02/2007 14:00~16;30	In person	Presentation, recording and document
20	Department of Information Office, KCG	Office	02/03/2007 10:0~10:20	In person	Recording
21	Chief Secretary, Department of Information Office, KCG	Office	07/03/2007 15:00~16:00	In person	Recording and document
22	Secretary, Kaohsiung Tourism Association	n/a	08/03/2007 15:20~15:50	Telephone	Key note made
23	Supervisor of the Main Stadium, Public Works Bureau, KCG	Office	14/03/2007 9:40~10:20	In person	Recording and report
24	Director of Public Works Bureau, KCG	Office	23/03/2007 15:00~15:45	In person	Recording
25	Officer of Finance Bureau	Office	19/03/2007 11:00~11:40	In person	Key note made, follow up contact and budget report
26	Chinese Petroleum Corporation (CPC), Taiwan	Office	14/02/2007 9:30~10:10	In person	Key note made Snowball
27	Chief Secretary, Kuo-Kwang High School, Laboratory School	Office	15/02/2007 10:00~10:40	In person	Unstructured interviews Key note made Snowball

Table 3.15 (*cont.*)

No.	Organisations	Place	Date/Time	Method	Note
28	Manager of CPC, Taiwan	Home	26/02/2007 9:00~9:40	In person	Unstructured interview Key note made
29	Professor of I-Shou University	n/a	27/04/2007	Email	Paper and reports provided
30	Staff member of Kaohsiung Commerce & Trade Development Association (KCTDA)	n/a	27/04/2007 8:50~9:10	Telephone	Note made
31	Association of Hotel, Kaohsiung City	n/a	27/04/2007 8:30~8:45	Telephone	Note made
32	Staff of Roller Skating Association, Taiwan	n/a	27/04/2007 9:15~9:30	Email	Questions delivered Note made
33	Community Leader 3	n/a	22/08/2007 15:00~15:15	Telephone	Note made
34	Community Leader 4	n/a	23/08/2007 11:00~11:20	Telephone	Note made
35	Community Leader 5	n/a	23/08/2007 10:35~10:54	Telephone	Note made
36	Community Leader 6	n/a	24/08/2007 11:40~12:00	Telephone	Note made
37	Community Leader 7	n/a	27/08/2007 11:10~11:30	Telephone	Note made
38	Community Leader 8	n/a	27/08/2007 10:50~11:10	Telephone	Note made

3.3.6. Other research activities

As the target issues for those involved in the pre-event process, various potential sources of evidence (materials in either written or non-written form), were gathered. Along with the interviews, these facilitated triangulation of the findings and data, thereby making quality analysis possible. They also helped familiarise the researcher with the 'Kaohsiung case study' context.

3.3.6.1. Sites visit as a source for gaining documentation

Documents were collected including official documents, minutes of meetings, proposals, progress reports, formal studies and local and national newspaper articles. Most were obtained during the period of fieldwork (Table 3.16), with an enquiry made during the interviews for access to additional data. A further useful official website (i.e. Official Publications Echo Network, OPEN) was pointed out, that provided abundant observations completed by those who had received government funds. Daily news sources were also searched with respect to the latest progress of the World Games.

Table 3.16 List of Units and Organisations visited during the fieldwork

No.	Organisations	Notes
1.	SHU-TE University, Department of Leisure, Recreation and Tourism Management	Formal Study
2	Secretariat, Kaohsiung County Government	Official Report
3	Kaohsiung Organising Committee	Pamphlet
4	Public Works Bureau, Kaohsiung City Government	Official Reports (Main Stadium)
5	Elementary School	Document
6	Education Bureau	Reports, Progress of Proposal
7	The Head of Neighbourhood, Nanzih District	Minutes of Meetings, Proposals (Local Area Regeneration)
8	Social Affairs Bureau, Kaohsiung City Government	Documents
9	Office of Bureau of Cultural Affairs, Kaohsiung City Government	Progress of Proposal
10	Office of Bureau of Human Resource Development, Kaohsiung City Government	Pamphlet
11	Superintendent of Schools, Kaohsiung City Government	Data
12	Secretariat, Department of Information ,Kaohsiung City Government	CDs, Brochures
13	Construction Office, Public Works Bureau, Kaohsiung City Government	Reports
14	Finance Bureau, Kaohsiung City Government	Report
15	Secretariat, Kuo-Kwang High School, National Sun Yat-Sen University Affiliate	Documents
16	I-Shou University	Official Reports

3.3.6.2. Sites visit as a source for observations

Observational evidence was obtained direct during the field visit. Though this was not the principal technique for collecting data, it did help provide visual evidence for the issues and activities being studied.

Observations at the Lantern Festival and others were undertaken (see Figures 3.5, 3.6, and 3.7). During the period of the Lantern Festival period, observational visits were carried out at three different times: daytime, nighttime and during the progress of the Festival. Other fieldwork involved taking photographs at Games sites and on the routes constructed for the Games. A series of observational activities such as those on Zhongshan Road, Formosa Boulevard and Bo-ai World Games Boulevard, were then used as a practical method of focusing on key activities.

Figure 3.5 The entrance of World Games Zone in Lantern Festival

Figure 3.6 The reception of World Games Zone in Lantern Festival

Figure 3.7 Climbing -- An example of experiencing corner in Lantern Festival

3.3.7. Quantitative research methods

The quantitative research methods addressed here are concerned with a series of important aspects in conducting a survey (for elaborating issues for data collection and processing). The following Sections, from 3.3.8 to 3.3.12, deal with sampling techniques, questionnaire surveys, investigative processes and assessment instruments.

3.3.8. Survey research: Sampling techniques

In social research two kinds of sampling techniques are frequently used, i.e. probability and non-probability sampling. The option that a researcher selects predominantly depends upon a variety of needs within each study.

3.3.8.1. Probability sampling

In social survey research, sampling techniques are used for various reasons including making inferences from a sample to a wider targeted population. Indeed, it is achievable by applying probability sampling, according to Denscombe (2007). Sufficiently large numbers as well as representative sample cases are selected at random and therefore, based on assumptions about the population and the targeted samples to be studied, it is felt that representativeness can be expected in the research sample (Bryman, 2001, 2004). In line with this are commonly suggested sampling techniques: random, systematic, stratified and quota sampling techniques. Random sampling involves the selection of sample cases at random; comparatively systematic sampling adopts the same principles, but systematically selects cases from the targeted population chosen by the researcher (Denscombe, 2007; de Vaus, 2002). The stratified and quota sampling techniques bear some similarities, both by establishing certain strata and by including the number of sample cases within these strata in proportion to the wider population (Denscombe, 2007). However, attention should be paid to 'quota' sampling technique as some researchers (Bryman, 2004; de Vaus, 1991, 2002; Robson, 2002; Gilbert, 1993) do not agree with the classification made by Denscombe. It is suggested to be a form of non-probability sampling.

3.3.8.2. Non-probability sampling

Non-probability sampling may often be introduced in social research, where probability sampling is either not feasible or is regarded impractical for the research. In other words, non-probability sampling may be include sampling techniques that are not conducted according to probability sampling principles. This particularly relates to the requirement for randomness. It is, therefore, described as an "*umbrella term*" (Bryman, 2004: 100). In comparison to probability sampling, non-probability sampling researchers have limited information about the population, and precise sampling frames are unavailable. This is also apparent in the current study, largely owing to ambiguous boundaries between host and non-host zones. This non-probability sampling technique is to a large extent chosen with a specific purpose in mind, relevant not only to the research topic but also to the quality of sample cases selected (Denscombe, 2007). On this basis, a technique appropriate to the current study is introduced and discussed (this is purposive sampling).

3.3.8.3. Survey sample techniques adopted: The use of non-probability, purposive sampling

Purposive sampling was selected to be the sampling technique for the research with practical considerations. Delivering face-to-face questionnaires to targeted regions in which households were based enabled the research objectives to be met. This addressed the objectives to explore the attitudes taken by citizens towards various impacts within a variety of host sites. Saunders *et al.* (2007) note the suitability of this technique for a case study. The specific subject knowledge was explored and allowed to catch elements that would be most likely to inform the research (Denscombe, 1998:15). Though such samples cannot be statistically representative of the total population (e.g. the whole Kaohsiung City residents) (de Vaus, 1991; Saunders *et al.*, 2007), the approach can provide great benefits by minimizing the collection of extraneous data and thereby facilitating analysis and focusing the research. Selection of this sampling approach related to the research question and objectives.

3.3.9. Questionnaire survey

This Section presents an overview of the types of questionnaires, the merits and limitations of questionnaire methods and the type of questionnaire survey adopted in the current study. This is followed by general description of the distribution questionnaire.

3.3.9.1. Questionnaires: advantages, disadvantages, ordering of questions and layout of questionnaires

In comparison to qualitative approaches that are reliant on diverse data-gathering techniques (e.g. interview, document, observation *etc.*) to extract meaning from the research (Denzin, 1994; Rossman and Rallis, 1998), the use of questionnaires allows the collection of numerical and standardised data and written information given directly by respondents (Denscombe, 1998, 2007; Robson, 2002). According to Denscombe (2007), information includes two categories: 'facts' and 'opinions'. Factual information relates to data such as gender, age, marital status or education level, whereas with respect to opinions, respondents are required to make a judgment about issues prepared in the questionnaires and thus attitudes, views, beliefs, preferences and the like are possibly being surveyed.

The format of the response is another aspect for consideration when designing a questionnaire. Two types of question are predominantly referred to: 'open' and 'closed'. In wording either type of question, important principles are involved in ensuring the quality of the information. As noted by Veal (2006), a questionnaire should avoid jargon, ambiguity, multi-purpose questions and leading questions whilst at the same time simplifying the task wherever possible. In a well-developed closed question, respondents are forced to answer by selecting from a range of two or more options established in advance, making it easy and quick for a respondent to answer, and for a researcher the data obtained are easily analysed (Denscombe, 2007; de Vaus, 2002). However, the closed question allows less scope for respondents to fully reflect their feelings on a topic and thus provides less subtlety in the answers (Denscombe, 2007). On the other hand, by comparison, open questions allow the possibility of revealing the richness and complexity of the respondent's perspectives that might otherwise have been restricted to the scope of a closed question (Denscombe, 2007; Veal, 2006). The

disadvantages of open questions are: firstly, from the point of view of respondents, they require more effort and time to complete (which might deter them from taking part in the research); and secondly, these might provide quite 'raw' data requiring considerable time for analysis before useable data can be achieved (Denscombe, 1998, 2007).

3.3.9.2. Type of questionnaire survey

According to Veal (2006), questionnaire surveys in the leisure and tourism field include six types, i.e. household, street, telephone, mail, on-site and captive group surveys. As noted by Veal, much of the quantified data in leisure and tourism surveys are household-based because they are generally representative of the community and a complete geographical area. The household questionnaire surveys are normally interviewer-completed and thus can involve lengthy questionnaires and interviews. Despite this, it is acknowledged that household surveys are usually the most expensive. The range of costs accruing to this sort of survey depends on the 'potential length of interviews', the 'problems of contacting representative samples', and the 'wide geographical spread of the study area' (Veal, 2006:237).

3.3.9.3. Distribution of survey questionnaires

Distribution of face-to-face questionnaires was undertaken over four sites and throughout the first three months of 2007. This period was decided as much by the research schedule as by the timing of the Games (and is still under careful consideration). Care was taken to avoid compromising the reliability of the study. Although some of the identified regions and locations were targeted before fieldwork, each location was double-checked in advance and thus a slight adjustment of the final locations was determined to take account of the final plans and minor changes. Table 3.17 details the timing and the number of questionnaires distributed at each location where the preparatory stage of the World Games has had most impact. Table 3.18 provides the number of households in the survey regions.

The timings and locations for the distribution of questionnaires were determined two weeks before being handed directly to households. However, there was a need for careful consideration. Variations in the numbers of members of each household dependent upon the day of the week, the weather and also the residential proximity (i.e. in a tourism or non-tourism zone) were allowed for in the formal questionnaires in order to minimise any potential bias from such factors. Site visits to survey locations were scheduled to help reach as many members of each household as possible. Questionnaires were distributed on weekdays and at weekends, after office hours, and factors such as residential proximity were considered. So most of the questionnaire distributions were completed at weekends in the tourism zone whilst in the non-tourism zone most were undertaken after office hours on weekdays.

With the plan elaborated for questionnaire distribution, Table 3.18 highlights the results of sampling and the profile of the feedback achieved.

Table 3.17 Questionnaire distribution by region and timing

Date and Time	Locations Quantity of questionnaires distributed	Valid Questionnaires	Useable Return Rate
19/01/07: 4.00~6.30pm	Main stadium & Cueihua Road (154)	121 non-tourism zone	**78.57%**
20/01/07: 10.00am~1.00pm	Lotus Lake (178)	165 tourism zone	**92.70%**
20/01/07: 3.00~6.00pm	Kaohsiung Dome (198)	173 non-tourism zone	**87.37%**
01/02/07: 3.00~6.00pm. 11/03/07: 10.00am ~1.00pm & 3.00~7.00pm	Love River (170)	147 tourism zone	**86.47%**
Total questionnaire distribution and return rate	700	606	**86.57%**

Table 3.18 Profile of questionnaire distribution region

Region (neighbourhood)	Samples	Households	Valid percentage (sample/ total household)
Main stadium & Cueihua Road (2)	121	3937	3.07%
Lotus Lake (6)	165	1864	8.85%
Kaohsiung Dome (1)	173	5288	3.27%
Love River (6)	147	4244	3.46%
Total	606	15333	3.95%

Sources: Zuoying and Cianjnn District Household Registration Office of Kaohsiung City

3.3.10. Practicalities of investigative process

3.3.10.1. Preparatory work for questionnaire distribution

On arriving at Kaohsiung City and before distributing the questionnaires, a concern was to ensure a high useable return rate. There was a particular difficulty for an investigation conducted in public places in Taiwan, because of a series of financial frauds that have reduced trust amongst people. It was felt that this would adversely affect feedback success, and so to prevent this, a local university (Cheng Shiu University) was visited and permission was obtained from the Dean of the University to distribute the questionnaires on behalf of Cheng Shiu University and Sheffield Hallam University. Therefore, the front cover of each questionnaire included a covering sheet that not only explained the purpose of the research but also provided the researcher's contact information - this was important to make the investigation possible. Participants were encouraged to answer the questions openly, to ensure data validity.

3.3.10.2. Investigators and training activity

Targeted locations were confirmed by the researcher and one of the research assistants one week prior to the practical investigation, and training was conducted for the other four investigators. These were university students studying health and leisure-related courses at a local private university. Following consent from the Dean of the University, training work was carried out three days before the investigation. Items such as *grouping, choosing a leader from each group, the quantity of questionnaire distribution for each one, the locations and the route for each group, the timing of distributions, issues of safety and special awareness on preventing bias*, were announced and explained at the training meeting. The investigators were then driven to each survey location, and on-the-spot discussions were held as to the practical strategy or any ideas that might adjust the original plan.

Training meeting issues were helpful to the investigation in several respects. Setting a "maximum and minimum" quantity for distribution of questionnaires by each surveyor in each area allowed for proportional deliveries. The timing of the questionnaire distribution was intended to maximise the number of successfully

completed questionnaires within a limited period. During weekdays, investigative activities were carried out after 4 pm when most of the targeted subjects returned home. Investigators were advised to have no bias during distribution of the questionnaires (i.e. related to sex, age, *etc.*). Last but not least, as the survey was undertaken in Kaohsiung City, measures were needed to ensure traffic safety and, for this, each investigator needed insurance. Anything that might cause interruption to the investigation was reduced to a minimum.

3.3.10.3. Questionnaire distribution

Through the experiences learnt from the pilot study and the subsequent visits to potential targeted sites, the survey sites were finalised (see Table 3.17). The first area includes two sites: 1) the residential area around the main stadium site area; and 2) the Cueihua Road, which is now under the process of improvement to welcome the participants at the 2009 World Games. The second area, Lotus Lake, is recognized as a tourism zone and hosted the pre-event in 2006. The citizens who reside close to the lake were considered as possible questionnaire distributors as they are seen to be more exposed to impacts. In the Kaohsiung Dome site area, most apartment buildings situated around it are as high as thirty storeys, which made reaching potential subjects very difficult to access since the investigators were unable to enter without permission. Therefore, instead of directly sampling the apartment units, the investigators made more effort to reach as many independent households as possible close to the Kaohsiung Dome, which was time-consuming and incurred an increased cost. The last good site for sampling was the Love River area, which is a traditional tourism zone that has been successfully regenerated in recent years. It has also hosted many large-scale (international and national) sports events and many "attraction" festivals (music, sports, art, movies, politics, *etc*). In terms of the 2009 World Games it is one of the Games sites as well as a showcase for the organizing committee and City Government to advertise the 2009 World Games. Residents along Love River area and in the crowded districts around were considered as a priority. The questionnaires were designed to be completed on the spot, either with the assistance of investigators or through self-completion (thereby encouraging a high return rate and good useability).

3.3.10.4. Tourism zone questionnaire distribution

With many possible Games sites in tourism zones, the Lotus Lake and the Love River areas were selected as the final sites for distribution of questionnaires. During site visits, reactions and complaints from residents as well as members of households about hosting a series of warm-up games were noted. The covering sheet helped win the trust of respondents and enhanced their willingness to respond. However, a certain number of respondents did not complete questions on their income, thus potentially limiting the quantity of useable questionnaires. In turn, thanks to the conduct of face-to-face manner, investigators could remind respondents of double-checking whenever completing questionnaire and thus a high useable return rate was achieved.

During site visits, three groups of investigators spread across the region as planned. With financial support from the Faculty of Development and Society, each respondent received a pen as a reward, thereby encouraging completion. However, with limitations of time and cost available for the research, three hours (before the lunch break and at sunset) were set to have a certain number of questionnaires completed for each group. Furthermore, the process of investigation did not just focus on delivering the questionnaire itself. Each group also received two notebooks that were used to document the specific issues that concerned the respondents. These were either questions to be asked or complaints against the Kaohsiung City Government. Notes like these were taken to assist in the triangulation of data analysis. The timing of questionnaire distribution was determined so as to reach as many as households as possible located close to the Games site. It was hoped to avoid any bias that might arise from any failure to contact the targeted sample population.

3.3.10.5. Non-tourism zone questionnaire distribution

Questionnaires were distributed in non-tourism zones such as Kaohsiung Dome, the Main Stadium and Cueihua Road. During the construction period, impacts on these neighbourhoods were inevitable and thus further investigation of residents' attitudes were necessary. It was also considered appropriate to have more understanding of non-tourism zones because impacts associated with the 2009 World Games might be considerable and relatively new to such areas, compared to tourism zones where many

small-scale events and associated construction have already occurred even without the Games.

In respect of the site visits to the neighbourhoods of the Main Stadium, two locations were targeted. These were the staff dormitory in Kaohsiung Refinery Chinese Petroleum Corporation and residential communities in the neighbourhood next to the Main Stadium. For the community of the staff dormitory (729 households), they are next to the construction site of the Main Stadium with only a high wall between them. Regarding the distances between households and the main stadium site, questionnaires were distributed as a priority to those closer to the main stadium site. However, owing to the diversity of living quarters and the irregular distribution of streets, this survey took more time to administer and required more investigators than for the staff dormitory. Most of the households visited were stores so to avoid disturbing them, the survey timing was set for after four o'clock in the afternoon, and thus high return rate was achieved within a short period of time.

Questionnaires distributed to Cueihua Road area were principally to explore attitudes towards the facilities and other constructions associated with the Games. One group was assigned to the targeted area, where most households visited were inside apartments and for which extra permission from security guards was not needed. At the same time the survey was conducted close to the Main Stadium in order to prevent bias from limited respondents. Questionnaire survey notes were also taken during site visits.

The other non-tourism site selected to distribute questionnaires was the Kaohsiung Dome region. Of these selected sites, experience in pilot study and site visits before the investigation confirmed that it was difficult to reach those living in high apartments (as high as 30 storeys). Instead of directly surveying households inside apartments, a flexible but practicable strategy was adopted and independent houses and households on the ground floor of apartments were visited. In terms of timing, questionnaires were distributed during the weekend when most people were not at work. It was found that a high proportion of subjects surveyed in the Central City area wanted to complete the questionnaires by themselves.

3.3.10.6. Questionnaires completion and other activity

Whenever questionnaires were completed, they were immediately put into a large envelope by the respondent, who was then given a pen as a reward. Additionally, several briefing meetings were held during lunch and dinner time right after a site was visited. The purpose of these was to review the process of investigation for each group. Any drawbacks could be recognised and then swiftly improved before carrying out the next investigation. Issues raised in the meetings were, for example, difficulties emerging during the process, effective ways for the next site visit, and any concerns in the notes. Though these activities increased research costs, it was worthwhile in saving time and ensuring the quality of the investigation.

Questionnaires to be completed were stored separately for each region. Each copy of the questionnaire was marked with a coding number on the corner of its cover soon after the site visit. A double check was made to ensure that there were enough useable questionnaires to be collected.

3.3.11. Construction of assessment instrument and Questionnaire Pilot Test

A survey instrument for face-to-face questionnaires was designed, comprising three sections:

(1) Tourism Impact Attitude Scale;
(2) Views regarding hosting the World Games; and
(3) Demographic Questions.

(1) Tourism Impact Attitude Scale

Statements in the tourism impact attitude scale were mainly derived from the initial TIAS (Lankford and Howard, 1994) and compiled from previous published papers (Getz, 1977, 1991; Hall, 1989, 1992; Ritchie, 1984; Shultis *et al.*, 1996, Twynam and Johnston, 2004). The overall alpha scale coefficient of the initial TIAS was 0.964 (27 items, two factors). A further test conducted by Rollins (1997) on this scale showed the α-value of 0.92, with four factors produced. Based on TIAS, a modified form was used

by Twynam and Johnston (2004) to explore residents' attitudes related to 1995 Nordic World Ski Championships and the overall reliability of 0.921 in the modified TIAS was obtained. These studies suggest that this instrument is reliable.

A pilot study of 130 Kaohsiung city residents (valid N=120) was carried out in June 2006 for the purposes of testing and refining the instrument. Questions relating to the tourism impact attitude required respondents to react to a series of statements connecting to aspects of event tourism on a five-point Likert Scale (from 1=strongly agree to 5=strongly disagree). In calculating process five point Likert scale has been reversed (1→ 5, 2→ 4, 3→ 3, 4→ 2, 5→ 1), except 7 negatively-worded statements. In terms of the total score on ITAS, the higher the respondent got, the larger impacts he or she would perceive. There were five sections: economic impacts, political impacts, social and psychological impacts, physical and environmental impacts and total impacts.

In order to have fewer and accurate questions to be answered in the main survey, several techniques need to be applied. These are Independent-Samples T Test (critical ratio, CR), exploratory factor analysis (construct validity) and reliability analysis.

A) Independent-Samples T Test

This step is done for obtaining 'critical ratio' on each statement. By ranking each subject's total score from the highest to the lowest on TIAS, 27 per cent of both the highest and the lowest rankings are assigned to group one and group two in respect. With the assistance of SPSS for Windows, the result of the significant test of equality of means on each item between two groups was produced. If the item reaches significant level ($p<.05$ or $p<.01$), this means the item is able to effectively explore the level of reaction made by each respondent. During this step, items not reaching a significant level were dropped from the instrument, these being '*the World Games has created a financial burden for Kaohsiung*' (p=.06) and '*visitors to the World Games will interfere with my daily life*' (p=.381). The results are presented in Table 3.19.

B) Construct validity (Exploratory factor analysis)

When the first step finished, factor analysis technique can be applied to test the 'construct validity' on this scale. The function of this technique is to reduce or summarise a set of data by using a smaller set of factors or components (Pallant, 2001). A principal components analysis with varimax rotation was conducted to enable major dimensions of variation in the responses of respondents to be recognised. Twenty-two items were left and their factor loadings are shown in Table 3.20. Three items were removed after three analyses because each of them covered only one item (3 to 7 items are proper). This means that it is hard for it to be seen as a factor to account for something meaningful (Wang, 1991). They are '*the World Games will cause further congestion on roads*', '*the local area has better transportation systems thanks to the World Games*', and '*it is important to provide recreation facilities for local people rather than tourists*'.

C) Reliability analysis

It is important to know the reliability of the scale we are using when doing the study. According to Pallant (2001), the internal consistency refers to the degree to which the items that measure the same underlying construct. Cronbach alpha coefficient is one of the most commonly used indicators of internal consistency. Drawing upon the data (N=120) collected from pilot study, each factor's Cronbach alpha was presented in Table 3.20. The five factors accounted for 57.9% of the variance (α=.855). Ideally, it is recommended that the Cronbach alpha coefficient of a scale should be above .70 (Nunnally, 1978). DeVellis (1991) suggested that .65 is the minimum coefficient that can be accepted; those scales with Cronbach alpha below .60 will need to be revised. However, the reliability of a scale is quite sensitive to the sample that it is drawn upon. For example, in this study, the lower Cronbach's α coefficient of factor 4 (α=.667) and factor 5 (α=.637) may result from the statements having less to do with the respondents who are affected by the World Games at this stage. Another reason may be attributable to the small sample size at this stage of pilot study. If both factors are decided to be retained, further consideration and verification are needed by discussion with the supervisory team.

(2) Views regarding hosting the World Games and (3) Demographic Questions

The survey instrument also aimed to investigate residents' view regarding the hosting of the World Games (i.e. residential proximity, period of residence, involvement in tourism, expect to attend, support for hosting the event, interested in event, age, and perceived level of preparation) and their demographic information (i.e. gender, marital status, age, occupation, the highest education, and annual personal income) as well. Questions asked to respondents were identified in the event and tourism impact literature. A pilot study was conducted to get important information about how the questionnaire can be improved before the main survey. This was especially for the opinion obtained from target residents. During the pilot study, valuable comments were made on the wording and appropriateness of the questions to be answered by the target group. For instance, the question of 'the area you live in now belongs to a tourism zone or a non-tourism zone' was removed (decided by the researcher before carrying out the distribution). Suggestions were made to verify the questions to be asked.

Results shown in Table 3.20 through the pilot study stage are labelled with 5 factors and the final 22 items are left on the scale. The researcher subjectively categorised them with reference to the statements in the questions. This categorisation procedure generally identifies the potential impacts including economic, social and environmental dimensions on the host community before the Games. According to the results, they allow the main survey to accurately explore the residents' concerns and this helps meet the Specific Objective Two of this study.

Table 3.19 Critical ratio (CR) of each item and Cronbach's Alpha if Item Deleted on the verified TIAS

Items	CR	Cronbach's Alpha if Item Deleted (The last 22 items)
The World Games will provide a short-term boost to the economy in this area	5.063***	.845
The World Games will provide a long-term boost to the economy in this area	4.399***	.853
The World Games will provide jobs for local people	4.665***	.847
[a] The World Games has created a financial burden for Kaohsiung	1.910	
Visitors to the World Games will contribute a sizeable revenue to the local economy	3.401**	.852
The World Games will draw national and international attention to this area	5.330***	.847
The World Games has caused political turmoil in this area	3.055**	.857
City residents' pride has increased because of the World Games	6.104***	.846
The World Games will increase local people's interest in participating in sports	7.558***	.842
The World Games will increase the crime rate in the local community	4.777***	.856
Hosting the World Games will leave Kaohsiung with a negative image	3.806***	.852
Because of the World Games I will have more recreational opportunities	7.841***	.843
I support the World Games because of its vital role in our community	6.108***	.847
It is important to provide recreation facilities for local people rather than tourists	3.339**	
The World Games will negatively impact the environment	3.034**	.859
I believe the World Games should be actively supported in the local area	5.935***	.846
The local area has better transportation systems thanks to the World Games	3.586**	
The benefits of hosting the World Games will outweigh any of its negative impact	5.894***	.846
Hosting the World Games will make Kaohsiung more of a tourist destination	5.276***	.848
The World Games will cause further congestion on roads	2.209*	
The city government made the right decision on hosting of the World Games	5.106***	.847
I felt I could take part in the decision-making process to improve the World Games' development	4.235***	.854
The city government listens to residents about their concerns with the World Games	4.204***	.854
[b] Visitors to the World Games will interfere with my daily life	1.006	
Hosting the World Games will give Kaohsiung more opportunities to host other sporting events	4.329***	.850
I would like to see the city government to host mega-sport events like the World Games	6.092***	.844
Overall I believe my standard of living will be increased because of the World Games	6.218***	.845

*P<.05, **P<.01, ***P<.001

[a] The item was removed because of failing to reach significant level

[b] The item was removed because of failing to reach significant level

Table 3.20 Factor Analysis of the verified TIAS for Kaohsiung

Factor	Loading	Variance (Total = 57.896%)	Eigenvalue
Factor 1: Event Support (α=0.829)		15.441%	3.397
I would like to see the city government hosting mega-sport events like the World Games	0.729		
Hosting the World Games will give Kaohsiung more opportunities to host other sporting events	0.711		
The city government made the right decision on hosting of the World Games	0.684		
Because of the World Games I will have more recreational opportunities	0.618		
City residents' pride has increased because of the World Games	0.599		
I believe the World Games should be actively supported in the local area	0.566		
The World Games will increase local people's interest in participating in sports	0.423		
Factor 2: Economic and Image Benefits (α=0.762)		12.411%	2.730
Visitors to the World Games will contribute a sizeable revenue to the local economic	0.813		
The World Games will provide a short-term boost to the economy in this area	0.729		
The World Games will provide jobs for local people	0.687		
The World Games will draw national and international attention to this area	0.633		
Factor 3: Community Involvement (α=0.719)		10.871%	2.392
The city government listens to residents about their concerns with the World Games	0.799		
I felt I could take part in the decision-making process to improve the World Games' development	0.790		
I support the World Games because of its vital role in our community	0.603		
Factor 4: Local Development Benefits (α=0.667)		10.051%	2.211
The benefits of hosting the World Games will outweigh any of its negative impact	0.700		
Overall I believe my standard of living will be increased because of the World Games	0.652		
Hosting the World Games will make Kaohsiung more of a tourist destination	0.647		
The World Games will boost this area's long-term economy	0.447		
Factor 5 : Negative Impacts (α=0.637)		9.121%	2.007
The World Games has caused political turmoil in this area	0.762		
The World Games will negatively impact the environment	0.691		
The World Games will increase the crime rate in the local community	0.647		
Hosting the World Games will leave Kaohsiung with a negative image	0.586		

3.3.12. The formal questionnaire

Through the pilot study stage the questionnaire was refined to make it more suitable for its purpose and therefore it was better able to gather useful data. The comments obtained during the pilot test were drawn on to re-phrase some questions, whilst two statements in the revised TIAS were added, and the respondents were also asked about *whether they are aware that some games will be hosted in their local area in 2009*, with practical situations being considered during the field trip. Moreover, the layout of the questionnaires was adjusted to include illustrations both in the coverage of the questionnaire and in the revised TIAS. This provided a more understandable questionnaire for respondents and thus the required data quality and a high useable return rate were accomplished.

A total of 700 questionnaires were delivered to respondents, resulting in 606 useable questionnaires. The Cronbach alpha coefficient of all sub-scales on the revised TIAS ideally ranged from .711 ~ .857 (see Table 3.21), along with .887 on the total scale. It is recommended that it should be above .70 (Nunnally, 1978). In other words, it revealed the degree to which the items that measure the same underlying construct (Pallant, 2001). The construct of revised TIAS was believed that content validity was achieved by compiling enough relevant literature (e.g. tourism, mega-event), by receiving professional suggestions from the supervisory team and other experts and obtaining practical information during the pilot study. After the pilot study stage a discussion with the supervisory team was held and minor modifications were made to the scale. Thus the scale was prepared and applicable to the main investigation, and the content confirmed as valid.

Table 3.21 The reliability analysis of verified TIAS

Factors	Items	Cronbach α
Event Support	7	.857
Economic and Image Benefits	5	.738
Community Involvement	3	.711
Local Development Benefits	5	.730
Negative Impacts	4	.734
Total Scale	24	.887

3.4.0. Section Four: Data analysis

Deductive and inductive considerations are taken into account in this research design with a mixed-method approach to data collection. This, therefore, leads to applicability of data analysis strategies. Specifically, it is partly inductive and partly deductive processes that shaped this research. Data collected through questionnaires and interviews were analysed with the following procedures.

3.4.1. Approach to qualitative analysis

Qualitative data analysis started with verbatim transcription, with extra efforts to translate and transcribe into English. The accuracy of parts of troublesome translation from Chinese into English was double-checked with a Chinese-English interpreter who has been involved in the field for over ten years.

The approaches of data analysis involved with a series of procedures were intended to adopt content analysis and thematic analysis. Based on Ezzy (2002), the use of content analysis enables data analysis according to predefined categories, whereas in thematic analysis the categories into which themes will be identified are not predetermined before coding the data. Ezzy (2002) specifically added that for thematic analysis, general issues that are recognised are decided prior to the analysis, but categories and themes to be explored are not.

When the categories are placed into analytical units that are defined before analysis, the researcher is able to review each unit of analysis and further to categorise it, and the next stage is to interpret results and to draw a conclusion. On the other hand, thematic analysis involves a series of steps, and finishes when the researcher finds no new information in the data. The first stage - usually described as 'open coding' (Crisp, 2000 in Ezzy, 2002: 88) - involves thorough examination and then manually categorises important themes. The following step is to check and compare those general codes so as to identify any potential of them that could be differentiated or merged together. The next step, as Strauss and Corbin called 'axial coding' (1990), involves the integration of codes on the basis of the axes of central categories. In this stage, the relationships between codes were checked and entailed re-visiting data to reorganise the previous codes and to rename them where necessary. The last step, which is called 'selective coding' (Strauss and Corbin, 1990), needs to identify the core category. The whole analysis process involved such lengthy work as to enable the researcher to familiarize himself with the text and thus facilitate a more precise analysis of the data. In short, by applying both analytical approaches it was possible to draw out robust conclusions. But these processes were not absolute, and some modifications during the processes were required to ensure their accuracy and appropriateness.

Though findings can be made by using both approaches to the analysis, to some extent there are limiting boundaries between them. Content analysis partly confines the data to "*speak*" to the researcher, i.e. "*other's*" voice as part of the research process is limited. Other kinds of data analysis combined with content analysis are then suggested (Ezzy, 2002). The content analysis was also undertaken with the help of the computer software package, NVivo. However, it should be stressed that for qualitative data analysis, NVivo did provide the researcher with an efficient method to manage and retrieve data. It facilitated the drawing out of meanings and conclusions (Bazeley and Richards, 2000), but the main analysis, coding and reorganizing them into sub-themes, was dependent on the researcher himself. Regardless of this, as researchers observed (Robson, 2002), during data analysis, the process of interpretation of results usually occurs. The chance of a key finding could be missed in a situation of complete dependence upon technological assistance. Besides, Weaver and Atkinson (1995, in Bryman, 2004) and Askham (2005) also commented that computer-based analysis might cause risk to qualitative data analysis, in that the analysts work on a fragmentation as

well as disengagement of the textual materials. Taking these as a reminder, for this research, qualitative data analysis was primarily undertaken manually. The print-outs of data such as 'node' and coded sentences allowed checks on accuracy and context and by this, transcripts of raw data could then be linked to them.

3.4.2. Approach to quantitative analysis

Numerical data gathered through questionnaires was entered into SPSS, except written responses to one open-ended question. The coding of responses to this open-ended question was not considered. In the research design it has already been treated as one source of information to triangulate data and thus it was not necessary to test in analytical procedure with statistical techniques. Information data of this kind was to identify the respondents' main incentives either to support or to oppose the staging of the Games. The use of SPSS allowed the statistical reliability of results to be tested as detailed in Sections 3.3.11 and 3.3.12. Overall, the approach to quantitative analysis was underpinned by the framework as shown in Figure 3.8.

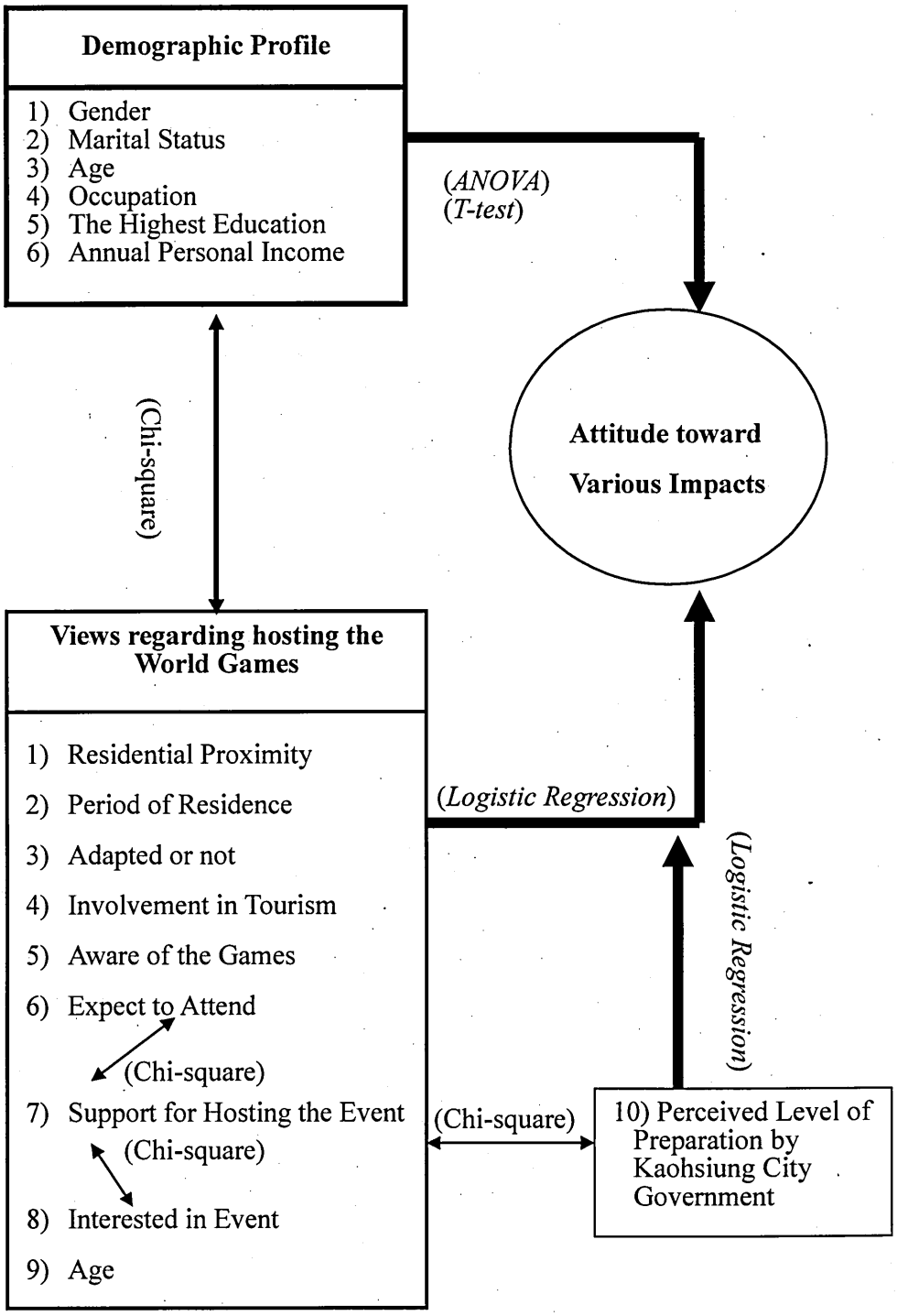


Figure 3.8 The framework for quantitative data analysis

3.4.2.1. Issues related to the selected statistical techniques

Two statistical techniques were applied to specifically explore how the attitudes were reacted to the event impacts on the targeted areas, which are depicted as follows:

1. *T-test and One-way analysis of variance*

The importance of general assumptions was discussed in Section 3.4.2.2. One of them is the normal distribution of the populations from which subjects are taken. Theoretically, normally-distributed populations would obtain a skewness and kurtosis value of 0 as well as are shaped in bell-like curve. As shown in Graph 3.1, values with respect to assessing normality were presented, with skewness at -.564 and kurtosis at .921.

In Section 5.1.0 (Chapter Five), descriptive statistics have produced details of demographic profiles. What is concerned with application of T-test and One-way analysis of variance would be valid frequency within each group. Since the '*power*' of a test like techniques used in this research relies much on the sample size (Stevens, 1996), 30 or more samples are suggested within group size in order to avoid the possibility of a non-significant result because of insufficient sample size. As such, within variables of the highest education, a group of no formal qualifications (n=7) is combined with a primary school (n=26) to form a new group labelled '*no formal and primary*', whilst a master and above group (n=23) is added into a group of university/college, to form a new group labelled '*university/college and above*'. Those subjects with an annual income exceeding NT$ 720, 000 are re-coded into a new group labelled as '*720, 001 and above*' (n=61).

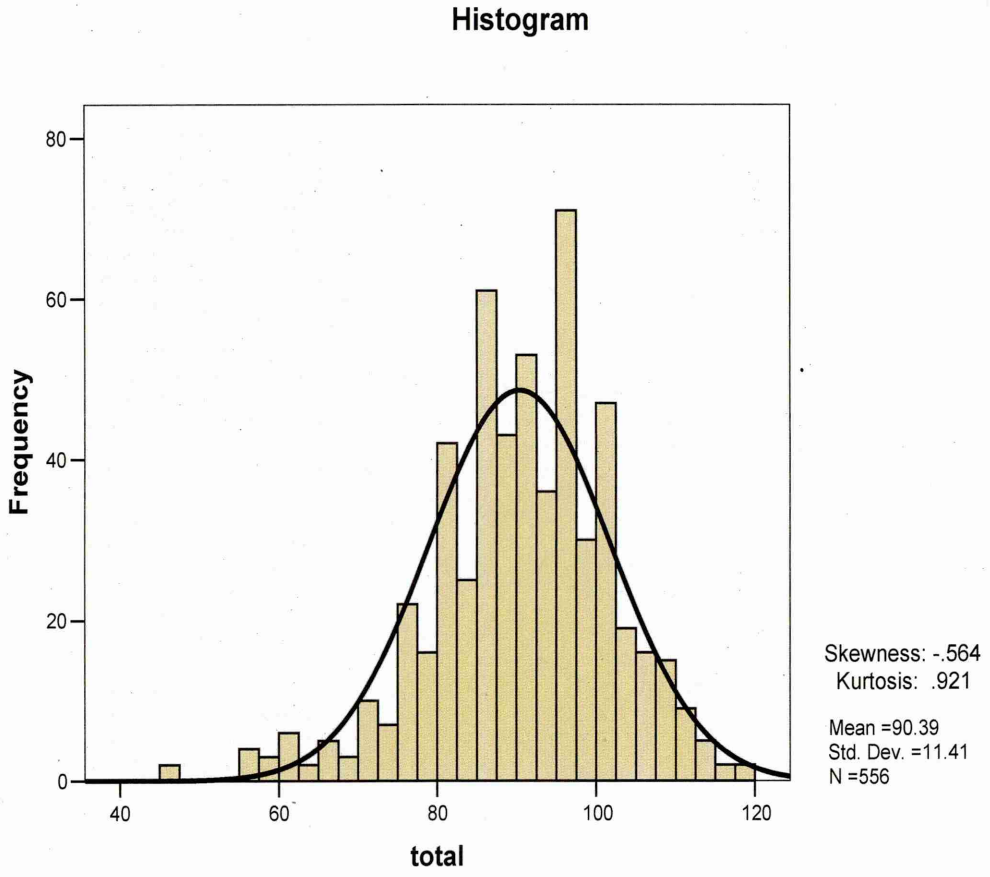
Factorial one-way ANOVAs were utilised to analyse related hypotheses, followed with Tukey HSD post hoc tests being done when significant results were found through the ANOVAs.

The *'effect size'*, as known as '*strength of association*' (Pallant, 2001:175) is also taken into consideration when evaluating the results. It should be noted that the results of statistical significance usually occur with quite small differences between groups

when a large sample is applied. Thus effect size was provided for the judgment of final results along with one-way ANOVAs. One of the most adopted effect size statistics is eta squared. The formula is put as:

$$\text{Eta squared} = \frac{\text{Sum of squares between groups}}{\text{Total sum of squares}}$$

The strength of this value, based on Cohen (1988), is interpreted to be '*small effect*' (.01=small effect; .06=moderate effect; and .14=large effect).



Graph 3.1 The distribution of total impacts

2. *Logistic Regression*

Logistic regression is used to test the related hypotheses raised in this research. This technique can test models to predict categorical outcomes with two or more categories, either dichotomous or ordinal. Though there is a family of logistic regression

techniques available, 'Binary Logistic Regression' is utilised in this research based on research design and hypotheses. A 'Forced Entry Method' is selected in order to "test theory", rather than to "carry out exploratory work" (Studenmund and Cassidy, 1987, in Field, 2005:226).

3.4.2.2. Assumptions for comparing groups and Chi-square

Before starting statistical analysis, a number of assumptions associated with techniques adopted need to be explored. They are generally addressed as follows.

1. *Random sampling*

Theoretically, though, it is ideal for the scores to be obtained using a random sample from the population, as pointed out by Pallant (2001), but this does not always happen in the real world, especially in real-life research. For this research, a purposeful sampling technique was adopted for its research aim, and the influences of violating the assumption on validity was concerned and thus raised.

2. *Normality*

Again, in social sciences, samples are not often taken from populations that are normally distributed. In these circumstances, most of the techniques used are quite 'robust', with more tolerance of violations of this assumption. This means that the violation of this assumption might not be a serious situation when each group is assigned over 20 or more samples.

3. *Independence of observations*

What is really meant by 'independence' of observations? Assuming a sample was collected in a research. In this case, the sample the researcher observed or measured is not allowed to be influenced by any other sample. If this is violated, the results a researcher obtained will be doubtful. Should there be any suspicion of violating this assumption it is suggested that a researcher needs to set a more stringent alpha value (e.g., $p<.01$).

4. *Homogeneity of variance*

It is assumed that subjects within each group are obtained from '*populations of equal variances*'. For analysis of variance, it is robust enough under three conditions-- First, the size of each group is similar; second, populations from which the subjects are selected are normally distributed; and third, the ratio between the largest and the smallest variances, according to Stevens (1996:249), is restricted to less than 1.5.

5. *The minimum expected cell frequency*

It should be 5 or greater (at least 80 per cent of cells have expected frequencies of 5 or more).

6. *Issues related to assessing normality*

Many scales used in the social sciences have scores that are skewed, but this does not necessarily indicate a problem with the scale because it reflects the underlying nature of the construct being measured. This skewed data might be 'transformed' statistically (Pallant, 2001).

The issue of kurtosis can result in an underestimate of the variance; however this risk is also reduced with a large sample of over 200 (Tabachnick and Fidell, 1996:73). In considering the issue, it is too sensitive with large samples. In response to this, Tabachnick and Fidell (1996) suggested that inspecting the shape of the distribution is appropriate.

3.4.2.3. Assumptions for logistic regression

Logistic regression has little impact on distribution of the explanatory variables, and allows a variety of measurement levels. Regardless of this, three assumptions need to be examined before analysing:

1) Sample size

In terms of sample size, if there are too few cases with a large number of explanatory variables, problems might occur with analysis. Low cell frequencies is particularly a problem, and this might produce extremely large 'parameter estimates' and

'standard errors' and possibly failure to converge. Solutions to this problem are considered to collapse or delete the offending categories (or variable). As suggested by Tabachnick and Fidell (1996), the rule of thumb, it is best if all expected frequencies exceed one and no more than 20% of cells have expected frequencies less than 5.

2) Multicollinearity

Ideally, the explanatory variables should be strongly associated with outcome variables but not strongly related to each other. Solutions to this included removing all but one of the highly inter-correlating variables, or to combine the related variables.

3) Outliers and influential cases

Cases that are not well explained by the presented model need to be inspected. These cases can be recognised by checking the residuals, which is a step of particular importance during model criticism if there are problems with the goodness of fits of the presented model. These outlying cases or influential cases, within analysis of logistic regression, may be well '*predicted by the model to be one category but be classified in the other category*' (Pallant, 2005: 161).

3.5.0. Summary of the Methodology

With the mixed methods and case study approaches adopted, and the data collection described, the research methodology was considered appropriate to explore the phenomenon of staging the World Games. This chapter demonstrates the logic behind the research design and clarifies how the research was conducted, and where semi-structured interview and questionnaire surveys were used.

With respect to the qualitative research method, purposive and snowball sampling were adopted. Forty-six interview questions were developed and applied to thirty-eight interviews, including face-to-face interviews, telephone interviews and e-mail. Official documents, minutes of meetings, proposals, progress reports, formal studies and local and national newspapers were collected and analysed. Observations in carefully-selected areas of Kaohsiung City were undertaken to provide visual evidence.

For quantitative research, purposive sampling was selected as the technique for the survey since an accurate sampling frame was unavailable. This was largely due to ambiguous boundaries between host and non-host zones. The subsections of the questionnaire survey detailed the results of sampling, reporting 606 valid questionnaires and 86.6 per cent useable return rate. The description of the practicalities of the investigative process covered the preparation for questionnaire distribution, the training activity before the main survey, and importantly, the selection of sites for the main survey. The last two subsections involved construction of the assessment instrument. The questionnaire pilot test helped to ensure a good quality of the formal assessment instrument. Tests on the formal questionnaire revealed that the VTIAS achieved an ideal standard on reliability analysis (Cronbach alpha coefficient), construct validity (exploratory factor analysis) content validity (relevant literature, professional suggestions and practical information during pilot study).

The data analysis section covers approaches to quantitative and qualitative data analyses. Numerical data gathered via questionnaires were analysed using SPSS 14.0 and this is underpinned by the framework for analysis. Issues related to the selected statistical techniques, such as T-test, One-way analysis of variance, Logistic regression, and Chi-square, are discussed. Data analysis adopted for the qualitative study used content analysis and thematic analysis. The limitations of using the computer software package such as NVivo are discussed.

Informed by the research methodology and the data collecting, the analyses of findings are presented in Chapters Four and Five. The key points from this chapter are as follows:

- A mixed-methods approach is adopted in this research due to seeking information with multiple techniques and collecting data from different situations in the study context.
- The adoption of pragmatism as research philosophical approach is considered appropriate because it can lead to mixed methods research.
- Research process undertaken in this research is illustrated in Figure 3.1.
- Three key qualitative techniques adopted in this research are semi-structured

interviews, documentation analysis, and observation.

- The 2001 Akita World Games and the 2005 Duisburg World Games are introduced as necessary because their experiences are borrowed by the 2009 Kaohsiung World Games.
- Purposive sampling was utilised in both qualitative and quantitative research.
- the interview questions (Table 3.14) are developed on the basis of specific criteria of sustainable development in sports mega-events, as shown in Table 2.12.
- For VTIAS, it was derived from the initial TIAS and compiled from previous studies.
- In terms of data analysis, approaches to qualitative analysis include content analysis and thematic analysis, and approaches to quantitative analysis are T-test, One-way analysis of variance, Logistic regression and Chi-square.