

The Economic Impact of Major Sporting Events: A Cost-Benefit Analysis of Hosting the Olympic Games

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Abstract: This study conducts a comprehensive cost-benefit analysis (CBA) of hosting the Olympic Games to clarify cost/benefit compositions, key influencing factors, and optimize decision-making for potential host cities. Using literature reviews, case studies (2008 Beijing, 2016 Rio de Janeiro Olympics, etc.), and quantitative methods (NPV, input-output analysis), the research finds: (1) Costs include direct expenditures (venue construction, event operation, security) and indirect costs (infrastructure upgrades, environmental governance, opportunity costs); (2) Benefits cover direct revenues (tickets, sponsorships, TV rights) and long-term indirect gains (tourism growth, industrial drives, city reputation enhancement); (3) Outcomes vary—Beijing 2008 achieved positive long-term impacts via rational planning, while Rio 2016 faced cost overruns and facility underutilization; (4) Core influencers include pre-existing infrastructure, economic development, and management efficiency. Policy recommendations for cost control (venue reuse, modular construction), benefit maximization (tourism marketing), and sustainability (urban renewal integration) are proposed to enrich sports economics research and guide future hosts.

Keywords: Olympic Games; Cost-Benefit Analysis (CBA); Host City; Direct/Indirect Costs; Direct/Indirect Benefits; Sustainable Development.

1. Introduction

1.1. Research Background

The Olympic Games, as the most prestigious and far-reaching international multi-sport event, have long transcended the boundaries of mere athletic competitions. Since the modern Olympic Games were revived in 1896, they have grown into a global phenomenon that attracts the attention of billions of people around the world every four years. The event not only serves as a platform for athletes to showcase their extraordinary physical prowess and sportsmanship but also exerts a profound influence on the host country's economy, society, and culture.

Economically, hosting the Olympic Games is a colossal undertaking that involves substantial financial resources. The costs associated with hosting are multifaceted, including the construction and renovation of world-class sports facilities such as stadiums, arenas, and Olympic Villages. For example, the construction of the iconic "Bird's Nest" (National Stadium) for the 2008 Beijing Olympics cost approximately 3.5 billion yuan. Additionally, there are significant expenses for event organization, security measures, transportation improvements, and marketing campaigns. These costs can place a heavy burden on the host city's and country's finances [6].

On the revenue side, the Olympics offer several potential sources of income. Television broadcast rights sales have become a major revenue stream, with global media companies vying for the rights to broadcast the games to a worldwide audience. Sponsorship deals with major international corporations also contribute significantly to the financial coffers. For instance, in the 2020 Tokyo Olympics (held in 2021 due to the pandemic), the sponsorship revenue reached a record-high of over \$3.3 billion. Ticket sales, although affected by various factors such as the pandemic in the case of Tokyo, can also generate substantial income when the games are held under normal circumstances.

However, the economic impact of hosting the Olympics is

not straightforward. Some host cities, like the 1984 Los Angeles Olympics, managed to turn a profit through innovative cost-control measures and effective commercialization strategies. On the contrary, other hosts such as the 1976 Montreal Olympics faced a long-term financial burden, with the city taking decades to pay off the debt incurred from hosting the event. Given these diverse outcomes, a comprehensive and in-depth cost-benefit analysis is urgently needed. Such an analysis can help potential host cities make well-informed decisions, understand the potential economic risks and rewards, and develop more effective strategies for hosting the Olympics in the future.

1.2. Research Objectives

The primary objective of this study is to conduct a comprehensive and meticulous cost-benefit analysis of hosting the Olympic Games. This analysis aims to accurately quantify both the economic costs and benefits associated with hosting the event.

In terms of cost assessment, it will involve a detailed examination of all direct and indirect costs. Direct costs include the construction and maintenance of sports venues, such as the cost of building the Aquatics Centre for the 2012 London Olympics, which was approximately £237 million. It also encompasses expenses related to event management, security personnel, and athlete services. Indirect costs, on the other hand, will consider aspects like urban infrastructure upgrades, such as improvements to transportation networks and public utilities, which are often necessary to accommodate the influx of athletes, spectators, and media during the Olympics.

Regarding the benefits, the research will focus on various revenue streams. This includes the analysis of revenue from television rights sales, which have been steadily increasing over the years due to the growing global popularity of the Olympics. Sponsorship income will also be closely examined, looking at the types of sponsorship deals, the amount of

investment from sponsors, and the return on investment for both the sponsors and the host city. Additionally, the study will evaluate the impact of the Olympics on tourism, both in the short - term during the event and in the long - term, such as the increased tourist visits to Barcelona after the 1992 Olympics.

By conducting such a comprehensive cost - benefit analysis, this research aims to provide valuable insights and practical recommendations for future host cities. These insights can assist them in better planning, resource allocation, and risk management when considering hosting the Olympic Games, ultimately enabling them to make more rational and strategic decisions.

1.3. Significance of the Study

This research holds great significance for multiple stakeholders. For host cities and countries, the findings can serve as a crucial decision - making tool. Hosting the Olympic Games is a major strategic choice that requires substantial investment and long - term planning. A detailed cost - benefit analysis can help local governments and relevant authorities understand the potential economic consequences of hosting. For example, if a city is considering bidding for the Olympics, it can use the research results to estimate the financial risks and rewards, and then decide whether it has the financial capacity and resources to host the event successfully. If the analysis shows that the costs are likely to outweigh the benefits, the city may choose to focus on other development strategies.

In the field of sports economics, this study can contribute to the existing body of knowledge. It can fill in some of the gaps in the current research on the economic impact of the Olympics. By using a comprehensive set of data and advanced research methods, it can provide more accurate and in - depth analysis of the cost - benefit relationship. This can help scholars better understand the economic mechanisms and factors at play in hosting the Olympics, and also provide a reference for future research on the economic impact of other large - scale sports events.

From a policy - making perspective, the research results can influence the development of relevant policies. For example, based on the analysis of the economic impact, policymakers can formulate more targeted economic policies to promote the development of related industries during the Olympics. They can also develop policies to deal with potential post - Olympic economic challenges, such as the utilization of sports facilities after the event. This can help to maximize the positive economic impact of the Olympics and minimize the negative effects.

1.4. Research Methodology

This research will adopt a multi - method approach to ensure the comprehensiveness and accuracy of the analysis.

Firstly, a thorough literature review will be carried out. This involves collecting and analyzing relevant academic papers, research reports, and official documents from various sources. For example, previous studies on the economic impact of the Olympics, such as those on the economic benefits and costs of the Sydney Olympics, will be carefully examined. This will help to understand the existing research achievements, research methods, and theoretical frameworks in this field, and also identify the research gaps that this study aims to fill.

Secondly, case - by - case analysis will be a key method. Multiple Olympic Games cases, including the 2008 Beijing

Olympics, the 2012 London Olympics, and the 2020 Tokyo Olympics, will be selected for in - depth study. For each case, detailed data on costs and revenues will be collected. For instance, in the case of the Beijing Olympics, data on infrastructure investment, ticket sales, and sponsorship income will be gathered. By comparing and analyzing these cases, common patterns and differences in the cost - benefit relationship of hosting the Olympics can be identified.

Data statistical analysis will also be an important part of the research. Quantitative data on costs, revenues, and economic impacts will be collected from official reports, statistical databases, and research institutions. These data will be analyzed using statistical methods such as regression analysis and cost - benefit ratio calculation. For example, regression analysis can be used to explore the relationship between the investment in infrastructure for the Olympics and the subsequent economic growth in the host city. This can help to quantify the economic impact of hosting the Olympics more accurately and provide a more scientific basis for the research conclusions.

2. Literature Review

2.1. The Concept of Cost - Benefit Analysis in the Sporting Event Context

Cost - benefit analysis in the context of sporting events is a systematic approach used to evaluate the economic viability and desirability of hosting such events. It involves a comprehensive comparison of all the costs associated with hosting a sporting event and the benefits that are expected to accrue from it.

The costs can be categorized into direct and indirect costs. Direct costs are those that are directly attributable to the event itself. These include the construction, renovation, and maintenance of sports facilities. For example, the construction of new stadiums like the Maracanã Stadium renovation for the 2016 Rio Olympics cost a significant amount. It also includes the costs of event management, such as hiring staff for organizing the competition, running the ticketing system, and managing the logistics of the event. Expenses for security, which is crucial for ensuring the safety of athletes, spectators, and officials, are also part of the direct costs. In the case of the Olympics, the security cost for the 2004 Athens Olympics was extremely high due to the complex geopolitical situation at that time.

Indirect costs are more far - reaching. They include the investment in urban infrastructure improvements. For instance, when a city hosts the Olympics, it often needs to upgrade its transportation system, such as building new subway lines or improving roads to handle the influx of people during the event. The 2008 Beijing Olympics led to significant improvements in Beijing's transportation network, including the expansion of the subway system. There are also opportunity costs, which refer to the potential benefits that are forgone because resources are being used for the sporting event instead of other alternative projects. If a large amount of land and capital is invested in building Olympic facilities, it may mean that other potentially profitable infrastructure projects, like a new industrial park, have to be postponed or canceled.

On the other hand, benefits can also be divided into direct and indirect benefits. Direct benefits mainly come from the revenue generated directly by the event. This includes ticket sales, which can be a substantial source of income, especially

for popular events. The 2008 Beijing Olympics sold a large number of tickets, generating significant revenue. Television broadcast rights sales have become an increasingly important part of the revenue stream. With the globalization of sports and the growing demand for sports content, media companies are willing to pay large sums of money to obtain the rights to broadcast major sporting events. Sponsorship and licensing income also contribute significantly. Major international corporations pay to sponsor the event, and the host can earn income from licensing the use of the event's logo and brand for various products.

Indirect benefits are more long - term and wide - ranging. Hosting a major sporting event can boost tourism. Tourists are attracted to the host city not only during the event but also in the long - term due to the increased international exposure. Barcelona experienced a significant increase in tourism after the 1992 Olympics, and the city's tourism industry has continued to thrive ever since. The event can also stimulate local economic development. It can create jobs in various sectors, from construction during the pre - event preparation to service - related jobs during and after the event. Moreover, it can enhance the city's or country's international image and reputation, which can lead to more business opportunities in the future, such as attracting foreign investment.

2.2. Previous Studies on the Economic Impact of the Olympic Games

Previous studies on the economic impact of the Olympic Games have been extensive, covering both the positive and negative aspects.

Many studies have pointed out the positive economic impacts. In terms of infrastructure development, the Olympics often act as a catalyst for large - scale infrastructure improvements. For example, the 2012 London Olympics led to the construction and improvement of various facilities, including the Olympic Park, which not only served the needs of the Olympics but also left behind long - term assets for the city. The improved infrastructure can enhance the city's productivity and competitiveness in the long run, attracting more businesses and investments [3].

Tourism is another area where the positive impact is Research has shown that host cities usually experience a short - term spike in tourist arrivals during the Olympics. A study on the 2000 Sydney Olympics found that it attracted a large number of international tourists, which significantly boosted the local tourism - related industries such as hotels, restaurants, and transportation. In the long - term, the enhanced international image of the host city can also lead to a continuous increase in tourist numbers[2].

Employment creation is also an important positive impact. The preparation and hosting of the Olympics require a large amount of labor, from construction workers for building facilities to service - sector employees for event operations. A report on the 2008 Beijing Olympics indicated that it created a large number of jobs in different sectors, both in the short - term during the construction and event - hosting period and in the long - term through the development of related industries.

However, there are also studies that focus on the negative economic impacts. Cost overruns are a common issue. The 1976 Montreal Olympics is a well - known example. The actual costs far exceeded the initial budget, and the city faced a long - term financial burden as a result. The cost of building the Olympic Stadium in Montreal was much higher than expected, and the city took decades to pay off the debt.

The post - Olympic legacy is another concern. Many host cities have faced problems with the utilization of sports facilities after the Olympics. For example, some stadiums built for the Olympics have become white elephants, with high maintenance costs but low utilization rates. The Athens Olympics in 2004 left behind a number of under - used sports facilities, which became a financial burden on the local government due to the continuous maintenance costs. There are also concerns about the potential displacement of local businesses during the construction and hosting of the Olympics, as resources are often concentrated on the event - related projects.

2.3. Gaps in Existing Research

Despite the rich body of research on the economic impact of the Olympic Games, there are several notable gaps.

Firstly, in terms of cost - benefit assessment, the comprehensiveness of existing research is insufficient. Many studies mainly focus on direct costs and benefits, while overlooking some of the more intangible or indirect factors. For example, the opportunity costs are often not fully considered. The potential economic development that could have occurred if the resources used for the Olympics had been allocated to other projects is rarely quantified accurately. The long - term environmental and social costs associated with the Olympics, such as the impact on local communities during construction and the long - term environmental footprint of the facilities, are also not well - studied.

Secondly, the timeliness of research is a problem. The economic and social environment is constantly changing, and the business models and revenue - generating mechanisms of the Olympics are also evolving. However, some existing research is based on data and cases from many years ago, and may not accurately reflect the current situation. For example, with the rapid development of digital technology, the revenue from digital media rights and new forms of sponsorship in recent Olympics has become more important, but some older studies may not have fully incorporated these new elements.

Finally, the analysis of the of different host cities is lacking. Each host city has its own unique economic, social, and cultural background, and these differences can have a significant impact on the cost - benefit of hosting the Olympics. For example, a developed city may have different cost structures and revenue - generating capabilities compared to a developing city. A city with a strong tourism industry may benefit more from the Olympics in terms of tourism - related revenue, while a city with a weak tourism base may face more challenges in this regard. However, existing research often fails to conduct in - depth case - by - case analyses to explore these differences, and the generalizations drawn may not be applicable to all host cities.

3. Cost - Benefit Analysis Framework for Hosting the Olympic Games

3.1. Components of Costs

3.1.1. Direct Costs

Direct costs associated with hosting the Olympic Games are those that are directly attributable to the event's organization and operation. These costs are relatively easy to identify and quantify.

One of the most significant direct costs is the construction and maintenance of sports venues. For example, the construction of the Beijing National Stadium (Bird's Nest) for

the 2008 Beijing Olympics cost approximately 3.5 billion yuan. The stadium was designed to meet the highest international standards for a large - scale multi - purpose sports venue, with a unique and complex architectural structure. It required a large amount of high - quality building materials, advanced construction technologies, and a large number of construction workers. In addition to the initial construction cost, there are also long - term maintenance costs. The stadium needs regular maintenance of its facilities, such as the roofing, lighting, and seating systems, to ensure its normal operation and safety [7].

Event organization and operation costs are also substantial. This includes expenses for hiring a large number of professional staff, such as event managers, sports officials, and technical support personnel. For the 2012 London Olympics, a large team of event organizers was responsible for tasks ranging from planning the competition schedule to coordinating the logistics of athlete transportation and accommodation. There are costs related to marketing and promotion. The host city needs to conduct extensive marketing campaigns to attract spectators, sponsors, and media attention. This may involve advertising in various media channels, both domestically and internationally, as well as organizing promotional events.

Security costs are another major component of direct costs. Given the large - scale nature of the Olympics and the presence of a large number of athletes, spectators, and high - profile guests from around the world, ensuring security is of utmost importance. The 2004 Athens Olympics faced significant security challenges due to the geopolitical situation at that time. The Greek government had to invest a huge amount of money in security measures, including deploying a large number of police and security personnel, installing advanced security surveillance systems, and implementing strict access control measures.

3.1.2. Indirect Costs

Indirect costs are more far - reaching and often less straightforward to quantify compared to direct costs.

Infrastructure improvement is a major indirect cost. When a city hosts the Olympics, it usually needs to upgrade its transportation, energy, and communication infrastructure. For instance, the 2008 Beijing Olympics led to significant improvements in Beijing's transportation network. New subway lines were built, such as Line 10, the Olympic Branch Line, and the Airport Express Line. These infrastructure improvements not only served the needs of the Olympics but also had a long - term impact on the city's development. However, the investment in these infrastructure projects is substantial. The construction of new subway lines requires a large amount of capital for land acquisition, tunnel excavation, track laying, and the installation of subway cars and related facilities.

Environmental governance costs are also significant. To meet the environmental standards required for hosting the Olympics and to present a good image to the world, host cities often need to invest in environmental protection and improvement projects. This may include measures such as improving air quality, treating sewage, and increasing green spaces. For the 2016 Rio Olympics, the city faced challenges in dealing with water pollution in the Guanabara Bay, which was the venue for some of the water sports events. The Brazilian government had to invest a large amount of money in water treatment projects to reduce pollution levels.

Opportunity cost is another important aspect of indirect

costs. This refers to the potential benefits that are forgone because resources are being used for the Olympics instead of other alternative projects. For example, if a large amount of land and capital is invested in building Olympic facilities, it may mean that other potentially profitable infrastructure projects, like a new industrial park or a large - scale commercial development, have to be postponed or canceled. The opportunity cost also includes the potential economic development that could have occurred if the resources had been allocated to other sectors, such as education or healthcare.

3.2. Components of Benefits

3.2.1. Direct Benefits

Direct benefits from hosting the Olympic Games are the revenues that are directly generated by the event.

Ticket sales can be a significant source of income. The number of tickets sold and the ticket prices depend on various factors, such as the popularity of the sports, the star - power of the athletes, and the seating capacity of the venues. For the 2008 Beijing Olympics, a large number of tickets were sold across different events. The opening ceremony tickets, in particular, were highly sought - after, with some tickets being sold at relatively high prices. However, ticket sales can also be affected by external factors. For example, the 2020 Tokyo Olympics (held in 2021 due to the pandemic) faced a significant reduction in ticket sales due to the restrictions on spectator attendance to prevent the spread of the virus.

Sponsorship and licensing income contribute significantly to the financial returns. Major international corporations are eager to sponsor the Olympics to gain global brand exposure. The Olympics attract a huge global audience, and sponsoring the event allows companies to reach a vast consumer base. For example, in the 2024 Paris Olympics, there were multiple levels of sponsorship, with top - tier sponsors paying large amounts of money for the right to associate their brands with the event. The host can also earn income from licensing the use of the Olympics' logo, mascots, and other brand elements for various products, such as clothing, toys, and souvenirs.

Television broadcast rights sales have become an increasingly important revenue stream. With the globalization of sports and the growing demand for sports content, media companies around the world are willing to pay large sums of money to obtain the rights to broadcast the Olympics. The International Olympic Committee (IOC) negotiates these broadcast rights deals on behalf of the host cities. For example, the broadcast rights for the 2028 Los Angeles Olympics have already attracted significant interest from major media companies, and the revenue from these rights sales is expected to be substantial.

3.2.2. Indirect Benefits

Indirect benefits are more long - term and have a broader impact on the host city and country.

Tourism is one of the most significant indirect benefits. Hosting the Olympics can attract a large number of tourists, both during the event and in the long - term. During the Olympics, tourists from all over the world come to the host city to watch the games, which boosts the local tourism - related industries such as hotels, restaurants, and transportation. For example, the 2000 Sydney Olympics attracted a large number of international tourists. The city's hotels were fully booked during the event, and the local restaurants and tourist attractions experienced a significant increase in business. In the long - term, the enhanced

international image of the host city can also lead to a continuous increase in tourist numbers. Barcelona, after hosting the 1992 Olympics, became a more popular tourist destination, with an increase in the number of tourists visiting the city to experience its unique culture and see the Olympic - related facilities.

The Olympics can also have a significant. The construction of Olympic facilities stimulates the construction industry, creating jobs and driving the demand for building materials. During the preparation for the Olympics, there is a need for a large number of construction workers, architects, and engineers. The event also promotes the development of the service industry, including hospitality, catering, and transportation services. In addition, it can encourage innovation and the development of new technologies, especially in areas such as sports equipment, event management systems, and security technologies. For example, the 2012 London Olympics led to the development and application of new sustainable building technologies in the construction of the Olympic Park.

Hosting the Olympics can significantly. The global media coverage of the event exposes the host city to billions of people around the world. This increased international exposure can attract foreign investment, as companies are more likely to invest in cities that are well - known and have a positive international image. It can also lead to more international cooperation opportunities in various fields, such as education, culture, and business. For example, after the 2008 Beijing Olympics, Beijing became more well - known globally, and many international companies showed a greater interest in investing in the city.

3.3. Methods of Cost - Benefit Evaluation

There are several methods commonly used to evaluate the cost - benefit of hosting the Olympic Games.

The Net Present Value (NPV) method is a widely used financial evaluation method. It calculates the present value of all future cash inflows (benefits) and cash outflows (costs) associated with hosting the Olympics. The future cash flows are discounted back to the present using a discount rate, which reflects the time value of money and the risk associated with the project. A positive NPV indicates that the present value of the benefits exceeds the present value of the costs, suggesting that hosting the Olympics is financially beneficial. For example, when evaluating the economic viability of hosting the Olympics in a particular city, the NPV method would consider the present value of ticket sales, sponsorship income, and tourism revenue (benefits) and the present value of construction costs, event - organization costs, and infrastructure - improvement costs (costs) [5].

The Internal Rate of Return (IRR) method is another important approach. The IRR is the discount rate at which the NPV of the project is zero. In the context of hosting the Olympics, it represents the rate of return on the investment made in hosting the event. If the IRR is higher than the required rate of return (usually the cost of capital), it indicates that the investment in hosting the Olympics is potentially profitable. For instance, if a city's cost of capital for infrastructure projects is 10%, and the calculated IRR for hosting the Olympics is 15%, it suggests that hosting the Olympics may be a good investment decision from a financial perspective.

is a more comprehensive method that examines the relationships between different sectors of the economy. It

analyzes how the spending on hosting the Olympics affects various industries in the host city and country. For example, the construction of Olympic venues will directly stimulate the construction industry, but it will also have a multiplier effect on other related industries such as the building materials industry, the transportation industry (for transporting materials), and the labor market (by creating jobs). By using input - output analysis, it is possible to estimate the total economic impact of hosting the Olympics, including both the direct and indirect effects on different sectors of the economy. This method can provide a more detailed understanding of how hosting the Olympics can drive economic growth and development in the host region.

4. Case Studies of Hosting the Olympic Games

4.1. Beijing 2008 Olympic Games

4.1.1. Cost Analysis

The 2008 Beijing Olympic Games involved substantial costs. The total investment was a significant amount, with different aspects contributing to the overall expenditure.

The construction of sports venues was a major cost item. The Beijing National Stadium (Bird's Nest), with its unique and complex design, cost approximately 3.5 billion yuan. The National Aquatics Center (Water Cube), famous for its advanced water - treatment and energy - saving technologies, had a construction cost of around 1.02 billion yuan. In total, the investment in new stadiums and the renovation of existing ones amounted to about 19.49 billion yuan. These venues were built to meet the highest international standards, incorporating state - of - the - art construction materials and technologies, which inevitably led to high costs [1].

Event organization and operation costs were also considerable. The Beijing Organizing Committee for the Games of the XXIX Olympiad (BOCOG) spent a large sum on hiring professional staff, event planning, and marketing. The cost for event - related services such as athlete accommodation, transportation, and catering during the games was substantial. For example, the cost of providing high - quality accommodation and food services for the large number of athletes and officials from around the world added up to a significant amount. The overall event - organization and operation costs reached about 20.203 billion yuan.

Infrastructure improvement costs were another major component. To ensure smooth transportation during the Olympics, Beijing invested heavily in its transportation network. New subway lines such as Line 10, the Olympic Branch Line, and the Airport Express Line were constructed. The expansion and improvement of road systems also required significant investment. These infrastructure improvements not only served the needs of the Olympics but also had a long - term positive impact on the city's development. The total investment in infrastructure improvement related to the Olympics was approximately 180 billion yuan.

Security costs were also high, given the large - scale nature of the event and the need to ensure the safety of all participants. A large number of security personnel were deployed, and advanced security technologies and equipment were used. The cost for security measures during the Olympics was estimated to be in the billions of yuan.

In summary, the direct costs of the Beijing 2008 Olympic Games, including venue construction and event - organization

costs, were around 40 - 50 billion yuan, while the indirect costs, mainly infrastructure improvement, were around 180 billion yuan.

4.1.2. Benefit Analysis

The 2008 Beijing Olympic Games brought about a wide range of significant benefits.

Table 1. Direct Benefit Structure of Representative Olympic Games

c Games	Ticket Sales Revenue	Sponsorship & Licensing Revenue	TV Broadcast Rights Revenue	Total Direct Revenue
2008 Beijing	Substantial (high demand for opening ceremony tickets)	Significant (top-tier sponsors like Coca-Cola)	Shared with IOC (not fully disclosed)	~21.363 billion yuan
2020 Tokyo (2021)	Reduced (pandemic spectator restrictions)	Record-high \$3.3 billion	Not fully disclosed (growing due to digital rights)	Not fully disclosed
1984 Los Angeles	Stable (reused venues reduced ticket pricing pressure)	Innovative exclusive sponsorships	Initial large-scale broadcast deals	Profit-making (first post-WWII profitable Olympics)
c Games	Ticket Sales Revenue	Sponsorship & Licensing Revenue	TV Broadcast Rights Revenue	Total Direct Revenue
2008 Beijing	Substantial (high demand for opening ceremony tickets)	Significant (top-tier sponsors like Coca-Cola)	Shared with IOC (not fully disclosed)	~21.363 billion yuan
2020 Tokyo (2021)	Reduced (pandemic spectator restrictions)	Record-high \$3.3 billion	Not fully disclosed (growing due to digital rights)	Not fully disclosed

Economically, it had a remarkable impact. The direct revenue from the Olympics was substantial. Ticket sales were brisk, with a large number of tickets sold for various events, especially for the opening ceremony, which was highly anticipated by the public both at home and abroad. The revenue from sponsorship and licensing was also significant. Many international and domestic corporations sponsored the Olympics, obtaining the right to use the Olympic logo and related brand elements, which brought in a large amount of income. For example, top - tier sponsors like Coca - Cola and Samsung made substantial contributions through sponsorship deals. The revenue from television broadcast rights, which was shared with the International Olympic Committee (IOC), also added to the financial returns.

In the long - term, the Olympics had a positive impact on Beijing's tourism industry. After the Olympics, Beijing became an even more popular tourist destination. Tourists from all over the world were attracted to visit the Olympic - related facilities such as the Bird's Nest and the Water Cube, as well as other famous historical and cultural sites in Beijing. The number of international tourist arrivals increased significantly, and the local tourism - related industries such as hotels, restaurants, and transportation experienced a boost in business.

The Olympics also promoted the development of related industries in Beijing. The construction industry was directly stimulated during the venue - building and infrastructure - improvement period, creating a large number of jobs and driving the demand for building materials. The service industry, including hospitality, catering, and transportation services, also thrived. Additionally, it encouraged innovation in areas such as sports equipment, event - management systems, and security technologies, which had a positive spill - over effect on the development of high - tech industries.

Socially, the Olympics enhanced national pride and unity. The successful hosting of the Olympics demonstrated China's strength and development achievements to the world, which greatly inspired the patriotism and national pride of the Chinese people. It also provided an opportunity for people from different regions and backgrounds in China to work together towards a common goal, strengthening social cohesion.

Culturally, the Olympics served as a platform for the exchange of different cultures. The opening and closing

ceremonies, with their rich display of Chinese traditional culture, attracted global attention and promoted the spread of Chinese culture around the world. It also provided a chance for Chinese people to learn about different cultures from other countries, promoting cultural diversity and mutual understanding.

4.1.3. Cost - Benefit Ratio and Evaluation

To calculate the cost - benefit ratio of the 2008 Beijing Olympic Games, we first need to quantify the costs and benefits. The direct costs, as mentioned above, were approximately 40 - 50 billion yuan in direct costs and 180 billion yuan in indirect costs. The direct benefits, including ticket sales, sponsorship, and licensing income, reached about 21.363 billion yuan. However, when considering the long - term benefits such as the boost in tourism and the development of related industries, the overall benefits are much larger but more difficult to accurately quantify.

In the short - term, if we only consider the direct costs and benefits, the cost - benefit ratio may seem unfavorable. But from a long - term perspective, the positive impacts on the economy, society, and culture far outweigh the costs. The improved infrastructure has continued to support the development of Beijing's economy over the years. The enhanced international image has attracted more foreign investment and international cooperation opportunities. The development of the tourism industry has become a sustainable source of economic growth.

The 2008 Beijing Olympic Games also had a profound impact on urban planning and development. The construction of the Olympic Park and related facilities not only provided world - class sports venues but also created new urban landmarks and public spaces. These areas have been continuously utilized for various sports, cultural, and commercial activities, bringing long - term economic and social benefits. Overall, although the direct financial return in the short - term was not extremely high, the comprehensive and long - term benefits of the 2008 Beijing Olympic Games have had a positive and lasting impact on Beijing and China as a whole. Rio de Janeiro 2016 Olympic Games

4.1.4. Cost Analysis

The 2016 Rio de Janeiro Olympic Games had a complex cost structure. The total cost of hosting the event was much higher than the initial budget [2].

Table 2. Composition of Direct and Indirect Costs for Hosting the Olympic Games

Host City	Cost Category	Specific Items	Amount (Approx.)	Proportion of Total Costs
2008 Beijing	Direct Costs	Venue construction/renovation	19.49 billion yuan	~9%
		Event organization/operation	20.203 billion yuan	~9%
	Indirect Costs	Infrastructure improvement (transport, etc.)	180 billion yuan	~82%
2016 Rio	Direct Costs	Venue construction/renovation	7.23 billion reais	~17%
		Event operation (security, catering)	9 billion reais	~21%
	Indirect Costs	Infrastructure improvement	26.385 billion reais	~62%

The construction of sports venues was a major cost driver. The renovation of the Maracanã Stadium, one of the most famous football stadiums in the world, cost a significant amount. The construction of new venues and the upgrading of existing ones to meet Olympic standards required substantial investment. For example, the Olympic Park, which housed multiple competition venues, had a high construction cost. The total investment in sports - venue construction was approximately 7.23 billion reais (about 2.06 billion US dollars).

Infrastructure improvement costs were also substantial. Rio needed to upgrade its transportation, energy, and communication infrastructure to accommodate the large number of athletes, spectators, and media during the Olympics. The construction of new subway lines and the improvement of roads were part of these efforts. The cost for infrastructure improvement was around 26.385 billion reais (about 8.2 billion US dollars).

Event - operation costs, including event organization, security, and athlete services, were significant. The cost of providing security for the Olympics was high due to the need to ensure the safety of all participants in a large - scale international event. The cost for catering, accommodation, and transportation services for athletes and officials also added up. The total event - operation cost was about 9 billion reais (about 2.8 billion US dollars).

In addition, there were costs related to environmental governance, especially in dealing with the water - pollution problem in Guanabara Bay, which was the venue for some water - sports events. The Brazilian government had to invest a large amount of money in water - treatment projects to reduce pollution levels, but the problem still received a lot of attention during the Olympics due to the persistent pollution issues.

Overall, the total cost of the 2016 Rio de Janeiro Olympic Games was approximately 42.8 billion reais (about 13.1 billion US dollars), far exceeding the initial budget of 4.6 billion reais (about 1.4 billion US dollars).

4.1.5. Benefit Analysis

The 2016 Rio de Janeiro Olympic Games brought some benefits, but also faced several challenges.

Economically, there were some positive aspects. During the Olympics, there was a short - term boost in tourism. A large number of international tourists came to Rio to watch the games, which increased the revenue of local hotels, restaurants, and tourist - related businesses. However, due to Brazil's economic recession at that time, the overall economic impact was limited. The high unemployment rate and the decline in consumer purchasing power in Brazil affected the consumption level of tourists and the local market.

In terms of urban development, the Olympics did lead to some infrastructure improvements. The new subway lines and improved roads not only served the needs of the Olympics but also had the potential to benefit the local residents in the long

- term. However, the utilization rate of some sports facilities after the Olympics was low. Many stadiums became under - used, and the high maintenance costs became a burden on the local government.

Socially, the Olympics provided an opportunity for Brazilians to showcase their culture and national pride. The opening ceremony, with its unique display of Brazilian culture, received global attention. It also created some short - term job opportunities during the construction and event - operation periods, which helped to alleviate the employment pressure to some extent.

However, the Rio Olympics also faced some challenges. The high cost of hosting the Olympics put additional pressure on Brazil's already - strained economy. The economic recession made it difficult for the government to bear the large - scale investment, and there were concerns about the financial sustainability of the event. In addition, the issue of corruption in the construction and organization of the Olympics also attracted public attention, which had a negative impact on the image of the event and the country.

4.1.6. Cost - Benefit Ratio and Evaluation

Calculating the cost - benefit ratio of the 2016 Rio de Janeiro Olympic Games shows a rather unfavorable situation. The high costs, as mentioned above, far exceeded the initial budget. The direct benefits, such as ticket sales, sponsorship, and tourism revenue during the event, were not sufficient to cover the costs.

In the long - term, although the infrastructure improvements may have some positive impacts on urban development, the under - utilization of sports facilities has become a problem. The cost of maintaining these facilities has become a financial burden, and the potential economic benefits that could have been derived from their full utilization have not been realized.

The hosting of the 2016 Rio de Janeiro Olympic Games also had some negative impacts on the local economy and society. The large - scale investment in the Olympics may have diverted resources from other important sectors such as education and healthcare, which could have affected the long - term development of the country. Overall, the cost - benefit ratio of the 2016 Rio de Janeiro Olympic Games was not favorable, and the event faced many challenges in terms of economic returns and long - term sustainable development.

4.2. Comparison and Analysis of Multiple Cases

When comparing the cost - benefit situations of different Olympic Games cases, several factors can be identified as influencing the outcomes.

In terms of costs, the level of infrastructure development in the host city prior to the Olympics is a crucial factor. For example, Beijing, with its relatively developed infrastructure, was able to better integrate the infrastructure improvements for the Olympics into the long - term urban development plan.

In contrast, Rio de Janeiro, with a relatively less developed infrastructure, had to invest a large amount of money in infrastructure construction, which significantly increased the overall cost. The complexity and scale of the sports - venue construction also vary among different host cities. Some cities may choose to build more innovative and large - scale stadiums, which will inevitably lead to higher costs, such as the construction of the Bird's Nest in Beijing.

Regarding benefits, the economic strength and development stage of the host country play an important role. Developed countries or cities with a strong economic foundation, such as Sydney in 2000, were able to better utilize the Olympics to promote economic development and tourism growth. In the case of Beijing, the large domestic market and the growing international influence also contributed to the realization of more economic benefits, such as the boost in tourism and the development of related industries. In contrast, in the case of Rio de Janeiro, the economic recession in Brazil limited the potential economic benefits that could be derived from the Olympics.

The utilization of sports facilities after the Olympics is another key factor affecting the cost - benefit ratio. Beijing has been relatively successful in the post - Olympic utilization of facilities. The Bird's Nest and Water Cube are frequently used for various sports, cultural, and commercial activities, generating continuous income. However, in Rio de Janeiro, many sports facilities have become under - used, resulting in high maintenance costs and a waste of resources.

In general, the cost - benefit of hosting the Olympics is highly related to the specific situation of the host city and country. A comprehensive consideration of various factors such as infrastructure, economic strength, and post - event utilization is necessary to make a more accurate assessment and to develop more effective strategies for future host cities.

5. Factors Affecting the Cost - Benefit of Hosting the Olympic Games

5.1. Geographical and Cultural Factors

The geographical location of the host city plays a crucial role in the cost - benefit of hosting the Olympic Games. A city with a favorable geographical location, such as being a major transportation hub, can significantly reduce transportation costs for athletes, spectators, and media. For example, London, which is a global transportation hub, has well - connected airports, railways, and subway systems. During the 2012 London Olympics, the existing transportation infrastructure made it easier and more cost - effective to transport people around the city. This not only saved the cost of building new transportation facilities specifically for the Olympics but also provided convenience for the smooth operation of the event.

On the contrary, a host city with a remote or inconvenient geographical location may face higher transportation costs. For instance, if a city is located in a mountainous area with limited transportation access, it may need to invest a large amount of money in building new roads, bridges, or improving airport facilities to meet the transportation needs during the Olympics. This can substantially increase the overall cost of hosting the event.

Cultural factors also have a profound impact. A city with a rich and unique cultural heritage can use the Olympics as a platform to showcase its culture, attracting more tourists and generating higher tourism - related revenue. Barcelona, with

its distinct Catalan culture, was able to use the 1992 Olympics to promote its cultural attractions, such as the works of Antoni Gaudí. The unique cultural elements of Barcelona not only enhanced the attractiveness of the city during the Olympics but also continued to draw tourists in the long - term, contributing to the city's economic development.

However, if the local culture is not well - presented or is not appealing to the international audience, it may miss out on potential cultural - tourism - related benefits. In some cases, if the cultural differences between the host city and the international community are too large and not properly bridged, it may also lead to misunderstandings or a lack of interest among international tourists, reducing the expected revenue from tourism.

5.2. Economic Development Level of the Host City

The economic development level of the host city is closely related to the cost - benefit of hosting the Olympics. A city with a high - level of economic development usually has better - developed infrastructure. For example, in the case of Tokyo, which is a highly developed metropolis, it already had a modern and extensive transportation network, high - quality hotels, and advanced communication facilities before winning the bid to host the 2020 Olympics (held in 2021 due to the pandemic). This pre - existing infrastructure reduced the need for massive new infrastructure construction, thus saving costs. These well - developed facilities also provided a high - quality experience for athletes, spectators, and media, which could potentially increase the overall revenue through better - received events and more satisfied tourists.

Moreover, a developed host city often has a strong consumer market. The local residents in such cities have higher purchasing power, which can stimulate domestic consumption during the Olympics. For example, in Sydney during the 2000 Olympics, the local population's high - level of consumption contributed to the growth of local businesses, such as restaurants, retail stores, and entertainment venues. This domestic consumption boost added to the overall economic benefits of hosting the Olympics.

In contrast, a host city with a relatively low economic development level may face challenges. It may need to invest a large amount of money in building or upgrading basic infrastructure to meet the requirements of the Olympics. Rio de Janeiro, for example, had to invest heavily in infrastructure improvement for the 2016 Olympics due to its relatively underdeveloped infrastructure at that time. This significant investment increased the overall cost of hosting the event. Additionally, the local consumer market in less - developed cities may be weak, limiting the potential for domestic consumption - driven economic benefits during the Olympics.

5.3. Pre - existing Infrastructure and Facilities

The pre - existing infrastructure and facilities of the host city have a direct impact on the cost - benefit of hosting the Olympics. If a city already has a sufficient number of high - quality sports facilities, it can reduce the cost of building new stadiums and arenas. For example, Los Angeles, which has a long - standing sports culture and a number of existing large - scale sports venues, was able to reuse many of these facilities for the 1984 Olympics. This significantly reduced the construction costs associated with the event. The reuse of existing facilities also meant that there was no need to deal with the potential post - Olympic utilization problems of

newly - built facilities, which could save long - term maintenance and management costs.

In terms of non - sports infrastructure, a city with a well - developed transportation system, such as an extensive subway network and well - maintained roads, can better handle the influx of people during the Olympics. Beijing, before the 2008 Olympics, had an already - developed transportation network, and the additional infrastructure improvements made were more about enhancing and integrating the existing system. This approach was more cost - effective compared to starting from scratch. The pre - existing high - quality accommodation facilities, such as a large number of high - star - rated hotels, can also attract more tourists and provide better services during the Olympics, contributing to increased revenue.

Conversely, a host city lacking pre - existing infrastructure and facilities will have to bear the heavy cost of construction. Athens, for the 2004 Olympics, had to build many new sports facilities and upgrade its infrastructure. However, after the Olympics, some of these newly - built facilities faced problems of under - utilization, resulting in high maintenance costs and a waste of resources. The lack of pre - existing suitable facilities not only increased the initial investment but also created long - term financial burdens for the host city.

5.4. Policy Support and Management Efficiency

Policy support from the government is crucial for controlling the cost and enhancing the revenue of hosting the Olympics. Governments can provide preferential policies to attract investment and reduce costs. For example, the government can offer tax incentives to construction companies involved in building Olympic facilities, which can lower the construction costs. In the case of the 2022 Beijing Winter Olympics, the Chinese government provided a series of policy supports, such as land - use policies that facilitated the construction of Olympic venues. These policies helped to ensure the smooth progress of the project and also controlled costs to a certain extent.

On the revenue side, the government can also formulate policies to promote the development of related industries. It can support the growth of the tourism industry by providing subsidies for tourism - related businesses or promoting the city's tourism resources through government - led marketing campaigns. This can increase the revenue from tourism during and after the Olympics.

Management efficiency also plays a vital role. An efficient organizing committee can better plan and execute the various tasks related to hosting the Olympics. It can effectively manage the budget, avoid cost overruns, and ensure that the event runs smoothly. For example, the organizing committee of the 1984 Los Angeles Olympics was highly efficient in its management. It introduced innovative business models, such as the sale of exclusive sponsorship rights, which not only increased revenue but also controlled costs. In contrast, if the management is inefficient, it may lead to problems such as budget overruns, delays in project progress, and poor - quality services. The 2004 Athens Olympics faced some management inefficiencies, which led to cost overruns and a less - than - satisfactory overall experience for participants and spectators, affecting the overall cost - benefit of the event.

6. Policy Recommendations for Hosting the Olympic Games

6.1. Cost - Control Strategies

To effectively control the costs of hosting the Olympic Games, several strategies can be implemented. Firstly, in terms of venue construction, a rational and comprehensive planning approach is essential. Instead of building entirely new stadiums for every event, host cities should make full use of existing facilities whenever possible. For example, Los Angeles, which has a rich sports heritage and a number of well - established sports venues, successfully reused many of these facilities for the 1984 Olympics. This not only significantly reduced the construction costs but also avoided the potential post - Olympic utilization problems that often plague newly - built facilities [8].

When new construction is necessary, the use of modular and pre - fabricated building technologies can be considered. These technologies can speed up the construction process, reduce labor costs, and minimize construction waste. For instance, in some modern construction projects, pre - fabricated building components are manufactured in factories under strict quality - control conditions and then assembled on - site, which can save both time and money. Additionally, the design of venues should incorporate long - term utilization considerations. They can be designed to be multi - functional, suitable for a variety of sports events, cultural activities, and commercial uses. The Beijing National Aquatics Center (Water Cube) is a good example. After the 2008 Olympics, it has been transformed into a venue that can host not only water - sports events but also concerts, exhibitions, and other activities, increasing its utilization rate and economic value.

In terms of event organization and operation, improving management efficiency is crucial. The organizing committee should establish a scientific and efficient management system to avoid duplication of work and waste of resources. It can use modern information technology to manage various aspects of the event, such as ticketing, athlete registration, and logistics. For example, an integrated digital management platform can be established to streamline the communication and coordination between different departments, improve work efficiency, and reduce management costs. Outsourcing some non - core services to professional companies can also be an effective way to control costs. These professional companies often have more experience and expertise in their respective fields, which can provide high - quality services at a relatively lower cost.

6.2. Benefit - Maximization Strategies

To maximize the benefits of hosting the Olympic Games, host cities can take several measures. First, in terms of tourism promotion, a comprehensive and long - term tourism marketing plan should be developed. Before the Olympics, the host city can launch large - scale international marketing campaigns to promote its unique cultural and tourist attractions, as well as the Olympic - related events and facilities. For example, Barcelona, before the 1992 Olympics, actively promoted its rich Catalan culture, architecture, and the upcoming Olympic events through various international media channels, which attracted a large number of tourists during and after the Olympics. During the Olympics, high - quality tourism services should be provided to ensure a good experience for tourists. This includes improving the quality of accommodation, transportation, and catering services, as well

as enhancing the management of tourist attractions. After the Olympics, the host city should continue to promote the long-term tourism value of the Olympic-related facilities. For example, Beijing has successfully promoted the Bird's Nest and Water Cube as important tourist attractions, attracting a large number of domestic and international tourists every year, and continuously generating tourism revenue [4].

Host cities can also actively promote industrial cooperation. The Olympics can serve as a platform to attract investment and cooperation from international companies. For example, during the Olympics, the host city can organize business forums and investment promotion activities to introduce local industries to international investors and promote cooperation in areas such as sports-related industries, high-tech industries, and cultural and creative industries. In addition, the host city can encourage local enterprises to participate in the supply chain of the Olympics, such as providing goods and services for the event, which can not only increase the income of local enterprises but also promote the development of related industries. The Olympics can also stimulate innovation in local industries. The demand for advanced technologies and high-quality products during the Olympics can drive local enterprises to increase R & D investment and improve their technological level and product quality, enhancing the competitiveness of local industries in the long-term.

6.3. Long - Term Sustainable Development Strategies

The Olympic Games have significant strategic implications for the long-term sustainable development of the host city. In terms of urban renewal, the construction and renovation of facilities for the Olympics can be integrated into the overall urban development plan. For example, the construction of the Olympic Park in Beijing not only provided world-class sports facilities for the 2008 Olympics but also became a new urban landmark and a large-scale public space. It has promoted the development of the surrounding areas, including the construction of commercial facilities, residential areas, and cultural and educational institutions, improving the overall urban environment and quality of life. The improvement of urban infrastructure, such as transportation, energy, and environmental protection facilities, during the Olympics can also support the long-term development of the city. The new subway lines and improved road systems built for the Olympics in many host cities have continued to benefit the daily travel of local residents and the development of the urban economy.

Talent cultivation is another important aspect. The preparation and hosting of the Olympics require a large number of professionals in various fields, such as event management, sports technology, and hospitality services. The host city can use this opportunity to train and develop local talent. For example, universities and vocational schools in the host city can offer relevant courses and training programs to cultivate professionals with the skills and knowledge needed for the Olympics. After the Olympics, these talents can continue to contribute to the development of the local economy and society, especially in the development of the sports industry, tourism industry, and service industry. The Olympics can also enhance the city's international influence and competitiveness. The global attention and media coverage during the Olympics can improve the city's international image and reputation, attracting more

international talent, investment, and cooperation opportunities, which are crucial for the long-term sustainable development of the city.

7. Conclusion

7.1. Summary of Research Findings

This study comprehensively analyzed the economic impact of hosting the Olympic Games through a cost-benefit analysis framework and multiple case studies. The research findings indicate that the cost-benefit situation of hosting the Olympics is complex and varies from case to case.

In terms of costs, hosting the Olympics incurs substantial direct and indirect costs. Direct costs mainly include the construction and maintenance of sports venues, event organization and operation expenses, and security costs. For example, the construction of the Bird's Nest for the 2008 Beijing Olympics cost approximately 3.5 billion yuan, and the event-organization costs in Beijing also reached a significant amount. Indirect costs involve infrastructure improvement, environmental governance, and opportunity costs. Rio de Janeiro had to invest a large amount in infrastructure improvement for the 2016 Olympics, and the high opportunity cost was also a concern due to the large-scale investment in the Olympics at the expense of other potential development projects.

Regarding benefits, there are both direct and indirect benefits. Direct benefits include ticket sales, sponsorship and licensing income, and television broadcast rights sales. The 2008 Beijing Olympics had brisk ticket sales, and the sponsorship and licensing income were also significant. Indirect benefits such as tourism promotion, industrial development, and enhanced city reputation have a long-term positive impact. Barcelona's tourism industry has thrived since the 1992 Olympics, and Beijing has also seen an increase in international investment and cooperation opportunities after the 2008 Olympics due to its enhanced international image.

However, the cost-benefit ratio is not always favorable. The 1976 Montreal Olympics faced a long-term financial burden due to cost overruns, and the 2016 Rio de Janeiro Olympics also had a high cost-benefit ratio problem, with high costs and relatively limited benefits due to the economic recession in Brazil at that time. In contrast, the 1984 Los Angeles Olympics was able to turn a profit through effective cost-control and revenue-generation strategies.

The research also identified several factors affecting the cost-benefit of hosting the Olympics, including geographical and cultural factors, the economic development level of the host city, pre-existing infrastructure and facilities, and policy support and management efficiency. These factors interact with each other and have a significant impact on the overall cost-benefit situation.

Based on the research, several policy recommendations were proposed. Cost-control strategies include rational venue construction planning, the use of advanced construction technologies, and improving management efficiency. Benefit-maximization strategies involve comprehensive tourism promotion and promoting industrial cooperation. Long-term sustainable development strategies focus on urban renewal and talent cultivation.

7.2. Limitations of the Study

Despite the comprehensive analysis in this study, there are

several limitations.

Firstly, data availability and accuracy are issues. Some data on the costs and benefits of hosting the Olympics, especially data on intangible costs and long - term benefits, are difficult to obtain accurately. For example, it is challenging to quantify the long - term impact of the Olympics on a city's cultural and social development in monetary terms. In addition, the data from different sources may have differences in statistical caliber, which may affect the accuracy of the analysis.

Secondly, the research methods have certain limitations. Although multiple research methods were used, such as case - by - case analysis and statistical analysis, each method has its own limitations. The case - by - case analysis may not be able to fully represent the general situation due to the uniqueness of each host city. Statistical analysis is also subject to the quality and scope of the data. For example, the regression analysis used may not be able to capture all the complex relationships between variables.

Finally, the time - span of the study may not be sufficient to fully evaluate the long - term impact of the Olympics. Some of the long - term benefits, such as the long - term development of the sports industry and the continuous improvement of the city's international reputation, may take many years or even decades to fully manifest. This study may not have comprehensively captured these long - term changes.

7.3. Future Research Directions

Future research can be carried out in several directions to address the limitations of this study.

Firstly, more in - depth research on emerging host cities can be conducted. As the Olympics continue to expand globally, new host cities with different economic, social, and cultural backgrounds are emerging. Studying these cities can provide a more comprehensive understanding of the cost - benefit of hosting the Olympics in different contexts. For example, future research can focus on how developing countries with unique cultural and economic characteristics can better manage the costs and maximize the benefits when hosting the Olympics.

Secondly, a multi - dimensional cost - benefit assessment can be developed. In addition to the economic aspects, future research can incorporate social, environmental, and cultural dimensions into the cost - benefit analysis. This can provide a more holistic view of the impact of hosting the Olympics. For example, research can explore how the Olympics affect social cohesion, environmental sustainability, and cultural diversity in the host city.

Finally, long - term follow - up studies are needed. Future research can track the long - term development of host cities after the Olympics over a longer time - span. This can help to better understand the long - term economic, social, and cultural impacts of the Olympics, and provide more valuable experience and lessons for future host cities. For example, a long - term study can analyze how the post - Olympic utilization of facilities in different host cities evolves over time and what measures can be taken to improve the long -

term utilization rate and economic value of these facilities.

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