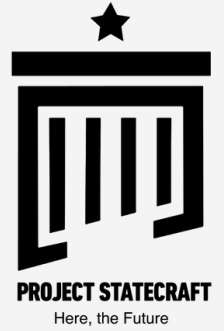


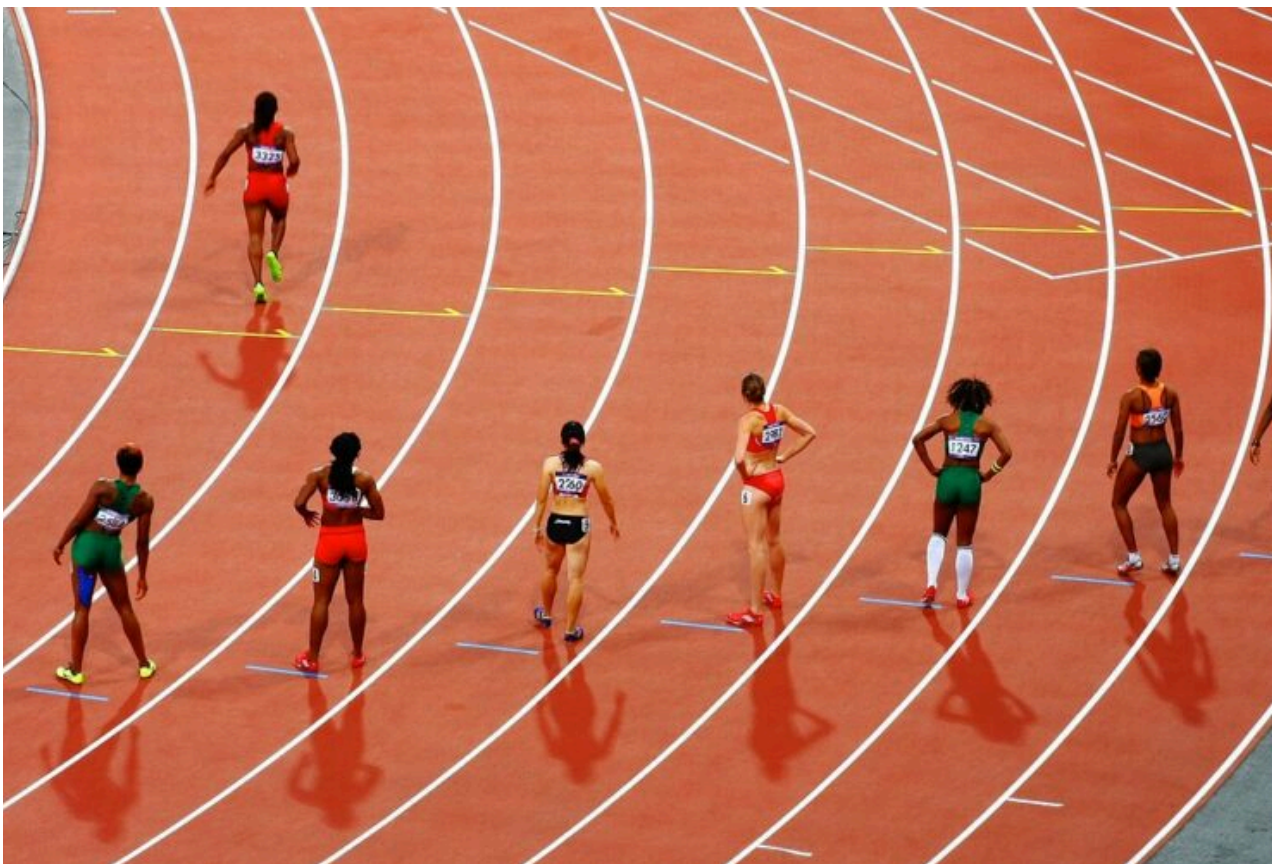
RESEARCH PAPER

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ECONOMICS OF OLYMPICS, ENVIRONMENTAL BENEFITS AND LEGACY:

A CASE STUDY OF LONDON
2012 AND RIO 2016





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Economics of Olympics, Environmental Benefits and Legacy : A Case Study of London 2012 and Rio 2016

Abstract:

This collaborative paper reviews the literature and secondary data on the evaluation of the economics of the Olympic Games, within the extensive framework of their relevance as cultural assets and opportunities. The main objective of the paper is to dissect the economics of the Olympics through analysing the economic costs, costs of hosting and short and long term effects along with negative and positive impacts. The literature reviewed consists of some methodologies carried by economists to support the data.

Keywords- Economic costs, economic benefits, London Olympics, Rio Olympics, host cities

Introduction

In addition to the purely economic facet, the cities which possess the Olympic aura add to the celebration of this all-inclusive cultural event an array of natural elements such as the topography of the venues, climate, accessibility of the venue location. The addition of cultural features like historical and tourist sites, art and culture with region inclusive social behaviour, add up to the aura.

Whilst the Olympics stand as a representative of an intercontinental interest, the preparedness of the host cities depends on an additional, equally significant local detail. This detail concerns the planning and structuring of the Games as a cultural event jointly by local institutions and private investors. This is usually seen as a demonstration of the sense of inclusion and belonging, a separate social identity on the part of a fragmented community within the complex society. Moreover, the local context incorporates the place in which there are exceptional opportunities of viewing the Olympics as a tool of cultural policy to equate with the development of the community. The cultural and physical assets which are developed and utilized under the aegis of the Olympic Games, include the tangible domains such as sports facilities and the intangible domain- cultural ceremonies which serve as the status in terms of competition and social diversity.

Shoval (2012) divides the history of the Olympics mega-events such as the Olympic Games into four periods. The first two periods continue from 1851 to 1939 and from 1948 to 1984, which witnessed the rise and fall of the World's Fair, an important mega-event organizer. The third phase began with the Los Angeles Olympic Games in 1984 and ended in 2000 with the Sydney Games, and was characterised by the arrival of TV companies and private enterprises for organising and managing the event. The fourth phase is the present and ongoing event, which is seen as a fresh vision of the Olympics where games are associated with the cultural heritage for the future: the main objective is to encourage long-term growth and the basic principle of keeping costs minimal remains intact. Over the course of time, notwithstanding the lavish expenditure reputation, a few games have been an exception such as Beijing and to an extent, London, expenditure of the Olympics have been under \$10 billion.

Every Olympics since 1972, the Local Organizing Committee for the Olympic Games (OCOG) have winded up with an operational surplus, Preuss (2004). Aspects such as cost overruns and expenditure have taken into account infrastructure costs. The International Olympic Committee (IOC) has recommended new management that aims at broadening the options of cities to bid for hosting the event, however, more emphasis on financial costs, construction of temporary rather than permanent sports facilities and focus on local resources.

The objective of this paper is to examine the economics of the Olympics, with special emphasis on comparative analysis on Olympics hosted by developing and developed countries, along with a study of the negative and positive effects of hosting it. Our main aim is to examine the Summer Olympics, which is a rather more glamorous event than the winter games.

Costs of Hosting

The costs involved with hosting the Olympic Games are decided and forecasted before actual planning for the games and begin with the bidding process which starts seven years before the Olympic Games. Potential hosting cities interested in hosting the Olympic Games must create a National Organizing Committee (NOC) and submit an appropriate bid to the International Olympic Committee (IOC). Astoundingly, the first-round application fee per city was \$100,000 in which eight cities applied for. Following this, four teams were then chosen for the second round, in which they had to pay another \$500,000 fee.

It was estimated that the bidding process would amount to \$13 million (Burton, 2003). According to the Federal Reserve Bank of St. Louis, "Interested cities spend up to \$100 million to "woo" the delegates of the International Olympic Committee (IOC) to vote for their city." On being chosen as the host city by the IOC, they started spending to construct the massive sized infrastructure needed for new venues and Olympic Village (Ricketts, 2012). Extra costs also arise from needing to improve the existing infrastructure of the host city such as roads, bridges, maintenance and cleanup, etc. resulting in massive amounts being spent to host the Olympic Games.

Additionally, the final cost incurred for infrastructure is impacted by the host cities existing infrastructure, money invested by private investors into Olympic facilities, and the government's proclivity towards investing in the Olympic project. This investment by the government signifies the hope that earning back the revenues bought by the games, will exceed the cost needed to host them. The investment by the government is funded in two ways: 1) increasing taxes 2) cutting down spending on government programs, leading to lost opportunity costs as that revenue could have been spent on sectors such as public health, education and development.

Another opportunity cost that many cities fail to take into account is that the development of Olympic venues would 'crowd out' other construction projects in the local economy. Additionally, cities make the organizing committees for the Games whose task is to stage the games, and not take up infrastructure projects. Additionally, maintenance of Olympic facilities and their purpose and benefits dwindle with time as a result of not being utilised the post-games period is not economic. (PWC-The economic impact of the Olympic Games, 2004).

These factors serve as evidence of cost overburdening and it leads to many host cities experiencing cost overruns, which is the increase in total cost due to unexpected expenditures incurred more than budget due to underestimation. Furthermore, additional costs that must be considered while hosting a mega-event like an Olympics include- operational costs, ceremony costs, medical service costs, food costs, transportation costs, security costs, administration, among many 'other' costs (Kang, 2008).

The Impact of the Games: Positive and Negative Effects

According to Furrer (2002), hosting the Olympics cannot be either negative or positive, rather has mixed outcomes. Organising the Olympics has its benefits and costs on the host city which may occur from economical, physical, social, cultural, and political effects. Whilst some of these benefits and costs can be identified and measured as they correspond to ‘tangible’ effects (for instance, increase in employment, increase in expenditure etc.). The intangible effects correspond to distinct economic variables, such as various forms of external factors (overcrowding, pollution). Other effects are both intangible and ambiguous, such as the hype of ‘Olympic Aura’ increases in pride and prestige.

The following types of benefits and costs have been identified as having an impact on the games:

1. **‘Intangible’ economic benefits:** The universally popularised economic benefit directly comes from hosting the Games and the prestige of the city that organizes it. A report commissioned by the Government of New South Wales (NSW) revealed that the Sydney Olympics (2000) acted as a catalyst for an increase in domestic and international tourism and spurred the enhancement of Australia’s as a brand (PWC, 2002). A gamut of benefits are thus linked with the growth-catalytic nature of the games and the trustee of investment, such a mega event creates confidence in the city, accelerating successive investment (Metropolis Commission, 2002).

In this respect, Morphet (1996) has argued that the role of the media is largely significant for creating awareness of the host city. For instance, in 1996, throughout the 17 days of the Centennial Olympic, it was reported two million people visited Atlanta and 3.5 billion people saw the city on global television coverage across 214 countries, leading to the dramatic growth of the tourist industry of the region (Stevens and Bevant, 1999).

2. **‘Tangible’ economic effects:** The host city is given a contribution from the International Olympic Committee, (for instance the summer Olympics fetch over one billion dollars) , for covering the operating costs. This boost in revenue attracts other public or private investment that enables the city to enhance the standards of its infrastructure. From a macroeconomic aspect, the Olympics are an attempt by the host city to draw investment or establish trade relations. The Games also create employment opportunities and thus contribute to economic growth. (Essex and Chalkley, 1998; State of Utah, 2000; Ference Weicker & Co 2002; Avison Young, 2003).

The jobs generated by the Olympics, are not only directly associated with the organising of the event but also for the tourism and hospitality retail sector due to the increased volumes of tourists who come as spectators. The construction industry is also heavily involved in staging the event which requires infrastructural development. For Instance, in the 1996 Atlanta Olympic Games, a \$2 billion investment was made for the Olympic projects between 1990 and 1997 along with the creation of new jobs in the same period and there was a cumulative economic impact of \$5.1 billion (Stevens and Bevant, 1999).

3. Infrastructural and urban regeneration benefits: Hosting cities undergo a tremendous long-term transformation, such as construction or revamping of sports facilities and multipurpose arenas, infrastructure such as roads and healthcare facilities, energy supply etc.

Additionally, the hospitality facilities go through significant improvements to promote a valuable legacy for local, and national tourism, raising the quality of infrastructures to a compatible level with international tourism (Essex and Chalkley, 1999, pp. 196–197). Chalip (2006) argues that such mega-events improve tourism infrastructures and spots such as parks, sports facilities, public transportation, roads, local heritage and airports. Hence, it has become a common method to use mega sporting events as a factor for large-scale urban improvisation (Kitchen, 1996).

4. Social benefits: Olympics can provide a unique opportunity for the host city to utilise and improve the host city's planning and execution capacity. For Instance, the planning organisation enhanced their organising capacity after playing its part in designing state-of-the-art facilities for the 2000 Sydney Olympics and over 100,000 people were imparted specialized training (Roper, 2002).

Olympics have also proven to focus on the practice and diffusion of sports in the host population and foster interest and knowledge in sport and Olympic values among the host country's youth. Studies have suggested Olympics aid in popularising values such as respect, tolerance, fair play, the balance between body and mind and the pursuit of excellence (Furrer, 2002). Whilst other studies prove that hosting and staging the Olympics have long-term social benefits on the host city (Gratton and Dobson, 1999) including reinforcing local values (Hall, 1992), stirring up patriotism and cultivating a sense of community belonging (Wait, 2003).

Cultural events during the Olympics promote global interest and contribute to the reviving history and culture of the host city (Humphreys and Plummer, 1993) while encouraging inclusion for diverse groups. Nonetheless, it is important that these events maintain their authenticity rather than being tourist-oriented to provide an insight into its local identity and community (Raj, 2003).

5. **Political benefits:** Pleasing effects at the political level have been witnessed, for instance, in South Korea, the 1998 Seoul Olympics brought the country on the international stage and established its position among the Asian tigers (Metropolis Commission, 2002).

The Games may prove to be beneficial at the local political level, for example, by encouraging public-private partnerships to complete large scale Olympics projects and accelerate public investment decisions through such recognised opportunities.

Negative Impacts

These benefits, however, must not overlook the associated risk and financial overburden that comes with the nature of the Olympics as a somewhat unpredictable event. Regarding this aspect, Preuss (1998) analysed the main arguments concerning the unfavourable effects of the Olympics hosted by Munich, Montreal, Los Angeles, Seoul, Barcelona and Atlanta in the period from 1972 to 1996.

1. The Olympics may leave the host city in **excessive debt if the development of sports facilities and transport infrastructures essential, are almost non-existent and need to develop from scratch**, especially if there is negligible demand by the inhabitants post the completion of the games.
2. The investment could be put to better use by funding projects more receptive to the social needs, or finish the pending projects
3. The Games are meant to benefit the whole hosting population, in the employment aspect and lead to an increase in income. However, they may give rise to **gentrification, which favours the wealthy classes over others and unequal distribution of wealth**.
4. **Environmental impacts:** Miller (2002) noted that overcrowding during the games leads to an increase in demand for infrastructure and services, which in turn demand housing, water, energy and transport and an increase in production of waste. Miller also noted the building of new infrastructure pressure during the games included the use of public transportation. For example, in Munich, a 20-km extension of the subway was added for improved public transportation and in Los Angeles 1984, a new 20-bus transit station was built.
5. **Overbuilding.** This is the case of the so-called **'white elephants'**, a term describing the facilities (including Olympic villages) of excessive size. White elephants may arise from ambitious projects by architects and city planners. This may be too massive and costly to maintain and harmonize with long-term urban planning.

Comparative analysis of Olympic games hosted by a developed country and a developing country

London Olympics, 2012

Economic Benefits of London Olympics

The London Olympics held in 2012 was one of the grandest Summer Olympic Games in terms of total costs standing at a massive 18 Billion Dollars than the expected cost of 12 Billion Dollars. The Economic Benefits reaped from London have been very significant and long-lasting. The London Games created employment opportunities, redeveloped the Eastern part of the city, brought about new influential business contracts, additional sales, and foreign investments in addition to the development of infrastructure.

The Olympic Games in London was seen as a chance to revitalize East London, which was notorious for being the most neglected, and poverty-stricken area of London (Michael P. Overmyer, 2017). While The British Government did produce a substantial five-year-long report prepared by a team of respected consultants that professed Britain had earned around 16 Billion Euros from the Games, This Report was later dismissed as untrue through some counter – studies. Nonetheless forecasts initially expected that the games would inject billions of dollars into the city even after several years.

1. Immediate Short Term Effects

Ken Livingstone, the Mayor of London at the time of the winning bid 10 years earlier had pronounced that the 2012 Olympics would bring the single biggest transformation to the city since the Victorian Age (Kieron Monks, CNN 2016). The 2012 Games brought a fair share of revenue to the city. More considerably, in August 2012, more than 3 Million Overseas tourists had visited the city. While these numbers were not a record high, The London Games managed to keep tourism intact within the country. Before the Olympics, Great Britain was on the cusp of a major unemployment crisis with this rate soaring from 4.8% in 2005 to 8.2% in 2012 (Danielle Rossingh, Forbes 2018). The country was combating major budget cuts since the 2nd world War and with the economy shrinking, these games were unofficially also dubbed as the ‘Recession Games’.

In 2013, The British government had announced that the economy had seen a GBP 9.9 billion trade and investment boost. With the initial target kept for a four-year program of activities and events on capitalizing for the successful conduct of games, this impact was seen only a year later (International Olympic Committee, 8 Aug 2013). As talked about, the Olympic Games in London helped create the most number of jobs in around a Sexagenary. An Oxford Economics study estimated in 2013 that by about 2017, the Games would have generated GBP 16.5 billion for the British economy that was heavily facilitated through pre-Games construction and other early Games-related economic activity (Oxford Economics with Lloyds Banking Group, 2012 & Michael P. Overmyer, 2017).

An Independent report did approximate the total economic benefits to culminate up to GBP 41 Billion by 2020. It eventually underlined the affirmative impacts that the games had on the substantial business contracts and foreign investments. After the Games, The costs had paid the most profitable benefits for the construction industry. A report commissioned by the UK government revealed that construction projects for London in 2012 had given the UK economy a £7.3 billion boost (International Olympic Committee, 8 Aug 2013). The best example of this was seen in the regeneration of the eastern part of the city. Costing 9.3 billion pounds, a 500-acre (200-hectare) area of mostly toxic wasteland was transformed into an Olympic Park, where most events were held. The Park was later made into a locality of 11,000 homes after the Games ended.

The surge in tourists and visitors during the games also extended aid to lift up the economy of Great Britain. The data released by the Office of National Statistics had shown that the 590,000 people who visited the city for the Games or attended a ticketed event had spent an average of GBP 1,290 during their visit, compared with GBP 650 by other visitors. (Office for National Statistics, UK, 2012). In Early 2013, the unemployment rate had been reduced a 1.2 percent from 8.2. Official Data showed that more than 46,000 people worked on the Olympic Park and village of which 10 percent had been previously unemployed. This data also showed that at the peak of the Games about 40 percent of people directly employed by The Organizing Committee of London Games were unemployed prior to their involvement in the Games, with schemes put in place to improve the professional skills of the unemployed and their employment prospects after the Games (International Olympic Committee, 8 Aug 2013). In between 2005 and 2014 the employment rate stood at +0.47% per year on average, while London's employment rate grew at a rate of +2.25% during the same period. Eventually, the Games were expected to create around 18,000 jobs for the next 4 Years.

The report released by the UK Trade and Investment department (UKTI) professed that around £2.5bn "additional inward investment", 58% of which were outside London had been made with £5.9bn additional sales following Olympic-related promotions by the Foreign Office and UKTI and £1.5bn high-value overseas contracts - such as helping to design venues in other host-nations (UK Trade & Investment UKTI, UK, 2012)

In computation, foreign direct investments (FDI) into the United Kingdom had increased consequentially before and the period after hosting the games from £10.276 billion in 2003 to a high of £96.81 billion in 2005 and then at a stabilized amount at £43.273 billion following the Olympics in 2013 (Michael P. Overmyer, 2017). During the games, there was a decline in manufacturing due to the number of infrastructure projects, with the construction industry falling 2.3% in the UK in 2012 and rising 1.5% in London (Michael P. Overmyer, 2017). These numbers were accredited to heavy infrastructure projects taken around the capital. In the short term, employment and tourism had seen a huge boost. It had been observed that most reports that had been published by the Government Agencies had a contrasting report to it through another source.

Various reports, counter reports, studies were published and done yet none could eventually ascertain an overall effect of Games on the GDP of London. The Numbers did provide some lucidity and a prediction of net 0.4 % by economists had ended up being 0.6 %. Per a report from the Economic and Social Research Council, the London Organizing Committee of the Olympic Games had in total received revenues of £2.314 billion pounds which had consisted of incomes as £971 million from sponsorships, £673 million from ticket sales, and hospitality income, £378 million contributed by the IOC, £111 million from a Paralympic subsidy, £84 million from licensing, and other miscellaneous sources. (ESRC, UK, 2010 & Michael P. Overmyer, 2017).

2. Immediate Short Term Reactions

The Mayor of London at that time, Boris Johnson had hailed the impacts of the London Olympics. He exclaimed in 2013 that London had seen a great surge in overseas investment in billions from Croydon to Battersea to the Royal Albert Docks and also a unique transformation of East London (International Olympic Committee, 8 Aug 2013). Additionally, the then Prime Minister of the UK David Cameron had said that "a lot of deals were done" around the time of the Olympics and that it was a thrilling chapter (BBC UK, 19 July 2013).

The National Council for Voluntary Organisations (NCVO) in a statement exclaimed that The Games had an encouraging boost for volunteering efforts all around the World however severe funding cuts to this sector had left a "question mark" over the Games legacy (BBC UK, 19 July 2013). The International Olympic Committee president at that time Jacques Rogge had also shared his viewpoint when he said that "The London 2012 Games have definitively served as a catalyst for development and improvements, both tangible and intangible, which would otherwise have taken decades to achieve." (London Gov.UK, 2013).

3. Long Term Effects

6 years later in 2018, a report published stated that the Olympic Games still generated around \$180 Million (Forbes). The greatest long-term economic benefits were all intangible and hence did not include a noteworthy monetary aspect in comparison to the short-term effects. Passed on to the legacy of London, Public renovations of the underground Metro (commonly known as Tube) and the renovation of East London were the most impactful of public projects.

Before the games, five main areas were identified wherein the organizing committee needed to invest in order to develop its long-term legacy. (Higgins 2008)



Image depicting the Five Main Areas where investments were needed for the long term legacy
(Image Courtesy – uksagepub.com, Higgins 2008)

The London Games had its long-term impacts in various other arenas apart from the sporting sector. In the social sphere, the games sought to bring Long-term recognition for Great Britain as a successful sporting nation. Moreover, the games would have been used as a historical tool to educate the youth about the social past (International Olympic Committee, 2018).

Urban Regeneration in the city boosted the global stature of the city and led to a greater affinity for the citizens amid new developmental projects, especially for East London. The most substantial impacts were felt in the sporting sector, where the developmental projects for various new stadiums, velodromes, or indoor training centres reaped economic benefits through the continuity of time. Statistical Data showed us that various events held in London after the Olympic Games generated huge net profits through the utilization of stadiums created for the Olympic Games. The IAAF World Athletics Championships held in 2017 in the Olympic Park in east London created 79 million pounds followed by Para-athletics World Championships, also held in the same year, which generated 28 million pounds (Danielle Rossingh, Forbes 2018). The 2013 Triathlon World Grand Final in Hyde Park created an economic impact of 8 million pounds, while the 2016 UCI Track Cycling World Championships hosted at the Lee Valley VeloPark produced 3 million pounds, and the 2016 European Aquatics Championships at the London Aquatics Centre generated 5 million pounds (Danielle Rossingh, Forbes 2018).

In Addition to this, London developed itself into a global sporting hub as different sporting agencies went on to invest huge amounts to bring some of the greatest sporting events of the World to London. UK Sport invested around £30m in its current major events program (2017-2025) and was able to bring tournaments like the 2018 Boccia World Championships, the 2019 Netball World Cup, the 2019 World Road Cycling Championships, and the 2022 World Gymnastics Championships (International Olympic Committee, 2018).

The London Games developed a great sporting affinity for citizens and over time, there were also continuous huge of foreign investments and business deals. Londoners would flock to support their athletes and most of the events past the Olympics generated huge revenue through broadcasts, ticketing sales and had a 100 per cent turnout of spectators. Even though Londoners still flock to major sporting events today, there has been some criticism on its part. The London soccer club for example West Ham pays 2.5 million pounds only in rent per year as occupants of the converted Olympic Stadium leading to a loss of 140 million pounds in public money over the next decade (BBC Sport, 2018).

The Covid – 19 Pandemic in 2020 did have its major shares of spoils for every country in the world and the impacts on this for a long-term legacy of the games were severe. As all sporting events had been shut for most parts of 2020 and with continuous lockdowns, London bared a huge brunt. There is no evidence to suggest how much did the pandemic hamper the legacy of the games yet it led to a loss of existing jobs and volunteering activities with regards to the Olympic Games. With the advent of 2021 and the recovery of the Economy, major things had returned to normal. The Olympic Games did enhance a huge international reputation for London and Great Britain in the economic and sporting sphere. These arguments were once also remarked by Esther Britten, UK Sport Head of Major Events had remarked in 2018. She said that “London 2012 established the UK as a world-leading host of major sporting events and, as the government’s specialist major events agency and with support from the National Lottery, we will continue bringing some of the world’s top sporting events to London and the rest of the UK.” (International Olympic Committee, 2018).

Attracting about 3 Million Visitors during the games, Most of these short-term benefits had been in the form of trivial increases in GDP, compact surges in Tourism, modest increments in rates of employment, and a minor increase in Foreign Direct Investments. The long-term benefits did include an intangible aspect in the form of employment opportunities, global recognition, sporting dominance, and infrastructure development yet most of the profits and injections were hence short-lived and could not provide any sustainable boost to the economy of Great Britain as a whole. In comparison to many others, The London Games did perform economically better and provide greater long-term benefits.

Economic Costs

Planning and organising the 2012 London Olympics, demanded new sports facilities and improvisation in the infrastructure and services of the host city, which resulted to be very costly. Before the actual games began, the total costs of hosting were estimated to be £3 billion but escalated to £9 billion, before reaching £8.5 billion in July 2012 (Goldman Sachs-The Olympics and Economics).

Final budget estimates of the London Olympics incurred a total cost of £9.325 billion. The Oxford Olympics study (2016) revealed the estimates of total expenses of the London Games to be £9.3 billion along with a cost overrun of 76%, resulting to be the costliest Summer Games in history as the final cost of the Beijing Olympics is disputed.

The London Organising Committee of the Olympic Games (LOCOG) resulted in the incurring staging expenditures totalling £2.61 billion which comprised- venue expenditures, technology costs, security costs, and marketing. The Olympic Development Authority (ODA), which was in charge of delivering the sports facilities, infrastructure, and legacy of the London Olympics, recorded its total costs being £6.641 billion.

Breaking down the amount into different areas, £709 million was spent on Athletes Village, £1.09 billion on Olympic Park, £3.272 billion on infrastructure, £290 million on improving community sports, £475 million on security, and the remaining amount went to public works (ESRC, 2015). The £9.3 billion investment was majorly made by the Central Government of Britain, which provided £6.25 billion in funding, rest £2.18 billion came from the national lottery, the Greater London Area (GLA) Olympic Precept (tax particularly for Olympic funding) afforded £625 million, and the rest £250 million was funded by the London Development Authority (LDA), a functional body of the GLA.

Additionally, it was likely that London underwent the displacement effect on their tourism industry during the months the Olympics took place. For instance, several tourist attractions saw a drop in the visitor numbers, such as the Adelphi Theatre in London, which received 137,000 fewer visitors in August 2012 than they did in August 2011 (Appelbaum, 2014). This was due to the overcrowding effect.

Analysis and Inference

London went through an immediate positive economic impact by hosting through an increase in consumer spending, economic output, and UK residents' incomes. The effort put into developing East London led to an increase in the houses being constructed through the revamping of Olympic Park, the development for a new commercial district, the employment rate had risen, and the infrastructure was improved.

Nonetheless, the final cost was extremely high. The residential developments around Olympic Park have lost their original purpose of low-cost housing at affordable rates for lower-income individuals. The Olympic stadium was sold at a lower price to Premier League soccer club West Ham United for just £15 million, a huge downfall in price from the initial cost of £700 million, many venues were either under-utilized or left unused after 2012, London Olympics.

Rio Olympics, 2016

Economic Benefits of Rio Olympics

Brazil was a large economy that was highly instrumental in connecting nations between South America. Hosting an Olympics by any city leads to increased trade openness to help with the economic recovery (Ross and Spiegel, 2005). This increased trade and services during the Olympics were meant to aid Brazil in its economic recovery. Around 2013, Brazil had also signed an agreement with the United States for the importation of fresh beef (Andrew). In addition to this, Brazil had also agreed to a science-based rulemaking with the US that would formulate greater expansion of trade and help in its economic expansion. Among its major economic Benefits, the one that stood out tall was trade openness. Brazil had not only expanded its trade with the US but with several superpowers in Latin America, Europe, and Asia. Hosting the Olympics means imports of food, building materials, and other necessary goods that are services used during the Olympics. During the Olympics, there is an increased trade than normal. A study concluded that the host nation experiences a 30 per cent increase in trade and it ultimately has a net positive impact on national exports. (Ross & Spiegel, 2009). Thus, these extended trade agreements before and after the Rio Olympics had a long-lasting economic benefit.

Initial Expectations

The University Of Sao Paulo Institute Of Administration conducted a study in 2009 to approximate a rough figure of jobs that could be created by the Olympics. The study showed that by 2016, 120,000 jobs would be generated with a potential for this figure to rise to 130,000 for the next 10 years hence. (Rio 2016, Andrew). This study not only showed that jobs would be generated during the Olympics but also estimated a foresight for potential growth in the coming decades. Brazil received heavy injections of investments and that had aided the creation of more jobs in the market. These training opportunities that workers received were expected to benefit the creation of a sustainable job-growth environment in the country. These training opportunities were provided to allow for the advancement of opportunities to workers and increase their interview-building skills. It was also noted that around 1 Million English lessons were made available for local volunteers and service providers like taxi drivers (Olympic.org).

Short Term Impacts

The Rio Olympics were very prosperous in generating employment opportunities in comparison to the other host cities. These Opportunities were however short-lived. The Olympics hosted in Brazil were inherently different from other host cities as Brazil was still a developing country and many Citizens were actively looking for jobs. Compared to a developed nation hosting the Olympics like London, the Rio Games did provide more significant job opportunities for the ' blue coloured jobs ' during the time of the Olympics. These job creations in the short run also helped citizens get acquainted with job training in preparation for the Olympics.

The unemployment rate for Brazil in the economy of Brazil had been rising steadily since 2015. This had led to many debates of whether the Olympics had caused a net positive impact on the economy. However, this figure was basically due to an economic downturn that was caused due to the impeachment of the president of Brazil in 2015 (Andrew). On the contrary, the unemployment rate had gone down from 8 % in 2008 to 4.8 % in 2012 (Andrew). One of the possible reasons for such figures was due to the catalyst effect of joy as Brazil was announced as the host city during the 121st IOC Session held in 2009 at Copenhagen.

Brazil was famous for being a hub for tourist attractions. The city of Rio houses the famous statue of Christ the Redeemer, which is among the 7 New Wonders of the World. Natural destinations such as the Copabanca beach were met with huge visitors and many events in the games hosted around the beaches of Rio added to the tourist influx. While there were several concerns regarding the outflow of the Zika Virus in Brazil during the Olympics, yet it didn't dampen the heavy surge in tourists. It was reported that around 434,000 foreign visitors spent around 2 Billion Brazilian Real (617.24 Million \$) during the games (Miami Herald). This amount was directly injected into various businesses within the city. Furthermore, Rio received a 98.7 % Approval rating from International Tourists as a result of the warm hospitality received by the citizens. These figures were very higher in comparison to other host cities. (Andrew). It can be said that the Olympics did have a boost to the tourism industry of Brazil in the Short Run.

The infrastructure created to host the Olympics has mostly been seen as the least beneficial economic benefiting factor for a developing country like Brazil. The venues were created in such a fashion to utilize them to their maximum potential. Out of 34 venues, 18 had already existed, 9 were constructed for permanent usage and 7 had been constructed for temporary usage (Andrew). Most of the venues created already created had been used in the 2014 FIFA World cup or the 2007 Pan Am Games. The biggest advantage for Rio had been already full-constructed Maracana stadium which was used to host the opening and closing ceremonies. It has been seen that some cities like Montreal had to spend a huge chunk of the sum to build a new central stadium. Being the most famous stadium of Brazil and amongst the biggest in Latin America, Maracana's usage had helped cut some amount of money into building stadiums or arenas.

The organizers had also planned an outline for these infrastructures after the conclusion of the Games. Most of these were meant to uplift the social community and aid in the welfare of the society as they would be used for other purposes and not athletic events. Few examples were seen like the Handball Centre would provide with most of the material for the construction of 400-500 student primary schools in the Jacarapegua Neighborhood (wired). The International Broadcast Centre would also serve as a dormitory for a local high school. While Rio had around 50 per cent of sporting infrastructure already developed, it lacked transport facilities. Most of the streets in Rio weren't well furnished and it had difficulties in coping with other host countries like London with transport infrastructure.

Several New Roads, subways had to be constructed to connect sporting arenas with residential and centre locations. These roads had also to be constructed through many hills and within the complex landscape of Rio de Janeiro. The commute routes in Rio although were inefficient during the times of the bid, they had turned better during the Games. The one-term amount spent on the construction of transport infrastructure boosted the transport network of Rio and provided it with a great long-term economic benefit. There was a greater investment in the Rapid Transit System of Rio and this led to severe cuts in travel time. (Andrew).

Long Term Impacts and Legacy

The long-term impacts of a city hosting the games are usually followed through a pattern with the Games burnishing the image of host cities as a start. This thereby promotes tourism, foreign investment, and trade over time. The Games finally yield intangible benefits, improving or modernizing cultural traits and administrative efficiency. With Rio, these benefits may have lived in the short run but only faded with time to come. The State was overwhelmed with debt and in the middle of political instability after 2016 which brought about severe increases in the ongoing recession and led to economic inefficiency. Rio was not able to offer the tax incentives to which developers and investors had grown accustomed but rather all the budget deficits became very severe. The violence Rate grew up and there were chaos and protests in the city. These conditions made it inauspicious for promoting tourism, trade, or investment. The New transportation infrastructure and the renovated port were thought of as the biggest long-term economic benefits by the officials. These routes did only respond minimally and served the rich better. For the average class families, fares grew higher and many homes had to be relocated. These BRT routes were cut through dense, low-income residential zones, forcing the evictions of thousands of families and either eliminating or reducing the favelas (JSTOR).

The Port named Porto Maravilhosa that was constructed led to the destruction of around 5,000 favelados and approximately 200 homes (JSTOR). There had been claims that there will be a legacy of new sports facilities from the Olympics. They will only become functional if a private operator is found to redesign, prepare, and manage the park's facilities. With Rio hosting no more events after the Olympics, these circumstances look unlikely to occur amidst a devastating pandemic.

One of the positive impacts to be felt was a better administration for the city and state. The administration of the Olympic Games increased the burden upon the governmental capacities of Rio that the system only fell into deeper patterns of corruption and dysfunction. The Rio Games lacked any impact of sustainability for a cleaner Earth. The promised legacies of better security, safer streets, modern sewerage and electricity for the favelas, and cleaner waterways never occurred. On the contrary, violence has increased in Rio since 2016 and the Guanabara Bay remained heavily and dangerously polluted. The Guanabara Bay today continues to receive 169 million gallons of untreated human waste daily. The New Golf Course that was built in Rio was an example of the lack of planning in terms of sustainability. The new course was built on wetlands in a wildlife conservation zone within an environmental protection area.

The affected area is composed of mangrove-associated ecosystems which sheltered rare or endemic species of fauna and flora brought some in danger of extinction. After the Olympics competition, the thought had been to build a luxury condo community at the course's edge. The greens fees at the course became sky high and with hardly any event scheduled, the course now gets little play. On the contrary, the maintenance of the course requires vast amounts of water as well as chemicals which have to be borne by the local government (JSTOR).

Another huge detrimental impact for Rio Games was that most of the venues and infrastructure were built in a hurry. Most of the venues had operational problems with shoddy construction that later led to it being abandoned. The most prominent and troubling Olympic long-term legacy was the economy of Brazil. The Recession from 2014-17 had only shadowed signs for any major potential impacts. The financial and employment conditions in Rio were not brought on by the burden of hosting, but they were certainly exacerbated by it.

Cost of the Rio Olympics

The Olympics are held once every four years and leave a memorable legacy every time in the countries, cities, and the minds of people and athletes alike. The event is all the more special for those who directly participate in organizing of such a mega-event at the international level. This comes with huge costs and opportunities for the local people and government, making them both, the biggest beneficiaries and the biggest benefactors.

This section of the paper breaks down the cost of Rio de Janeiro Olympics. The average cost of holding the Olympics is USD 8.9 billion whereas the average actual outturn cost of Summer Games and Winter Games is USD 5.2 billion and USD 3.1 billion respectively. The Olympics have the highest average overrun among megaprojects at 156%. The most expensive Summer Games till date is London 2012 at USD 15 billion and the most expensive Winter Games is the one held in Sochi in 2014 at USD 21 billion.

The Rio 2016 Games are marginally below the median cost of all prior Summer Games, which is USD 5.0 billion, in terms of overall sports-related outturn cost. However, the difference is not statistically significant. As a result, we find that the cost of the Rio 2016 Olympic Games is comparable to that of other Summer Games. The Rio Games have a lower cost overrun rate than prior Summer Games, at 51%, however the difference is not statistically significant. The overrun in Rio is identical to the median overrun for Games since 1999, however it is lower than the overruns in London and Sochi. The Rio 2016 Games, with a cost per event of USD 14.9 million, are marginally less expensive than previous Summer Games, which had a median cost per event of USD 16.8 million. However, the cost per event for Rio 2016 is not statistically significantly different from prior Summer Games costs.

Finally, the cost per athlete for the Rio Games is USD 0.4 million, which is slightly less than the USD 0.5 million costs per athlete for past Summer Games. The change is statistically insignificant once more.

The Positive and Negative Impacts of the 2016 Rio Olympics: A Qualitative Analysis



Hosting the Olympics is not entirely favorable or negative, but always has a mix of impacts. The Olympic Games leave an enduring legacy on the host city and its people- renovated existing structures, new infrastructures, and amenities developed specifically for the Games remain reminiscent of it for years to come. The economic, environmental, social, psychological, cultural and political implications of hosting the Games may have a wide range of benefits and drawbacks for the host city or region.

Zika Virus

Fears of Zika virus affecting returns weren't unfounded. After the first two media shocks, company sponsors of the 2016 Olympic and Paralympic Games reported statistically significant negative returns, according to an analysis of the relationship between variation in stock returns and each media shock for 19 companies (i.e.: Coca Cola, Atos, Bridgestone, Dow, General Electric, McDonalds, Panasonic, P&G, Samsung, Visa, Bradesco, Correios, Claro, Nissan, Aliansce, Cisco, Estacio, Tam, and 361°) that sponsored the 2016 Olympic and Paralympic Games due to Zika virus in February 2016.

Returns in March were, on the other hand, positive, statistically significant, and capable of entirely compensating for past losses.

This section of the paper will focus on the positive and negative impacts of the 2016 Olympics held in Rio de Janeiro, Brazil.

Positive Impacts

Sociocultural and Psychological Legacy

Mega-events, such as the Olympics, leave a lasting imprint on the collective memory, especially when they happen to mark an epoch.

It can be explained through the 'Social exchange theory' that says human connections are founded on potential exchanges; that is, people and organisations enter trade partnerships with the expectation of receiving something valuable in return. This is an important theoretical framework for evaluating public support for sporting mega-events since residents of host cities are expected to support an event if they believe positive advantages would last after the event as a result of hosting one.

This is not a perfect explanation as this assumes that people act rationally which is not always true. Considerable support for the event comes from the prestige that shoots the host city to a global sensation everyone knows. The increased visibility of the city brings with it the opportunity to showcase the city and the country as an attractive tourist location, invite business interests and market local products at an international event watched by millions.

The Olympics was a source of national pride for the Brazilians- a respite from the political turmoil of their president's impeachment and the Petrobras corruption scandal the nation was grappling with.

Tourism Legacy

Since 1992, a rise in tourism promotion of the host city and the country internationally has been observed. This can be termed as the Olympic tourism effect as host countries receive positive benefits before, during and after the Olympics. Picturesque locations may be used for events like the marathon, road cycling, and beach volleyball to draw attention to tourism sites and thus, capitalize on media attention.

According to a research of American tourists in Brazil, a well-established tourism and hospitality infrastructure has a positive relationship with tourists' length of stay.

During the Olympic Games, Rio de Janeiro received 1.17 million tourists, 410,000 of which were foreigners.

Tourism earned US\$ 6.2 billion in income in 2016 which is a 6.2 percent increase from 2015.

Rio received an approval rating of 98.7% from international tourists for its hospitality. This translates into Brazil's image as an attractive tourist destination internationally.

Sporting Legacy

With seven gold medals and nineteen medals total, this edition was the country's most successful participation in the Summer Olympics to date, indicative of the 'home-advantage effect'. This can be attributed to the increased enthusiasm of athletes from the home country, familiarity with the location and increased support from citizens.

Rio de Janeiro Olympics also drew attention to the local sports clubs, Brazilian soccer teams such as Botafogo, Flamengo, Fluminense and Vasco, which could enhance their brand image and take advantage of the event.

The locals witnessing the glory of Olympians and even their own sports celebrities first-hand coupled with the right infrastructure, interested parents enrol their young children in a sport which sets the emergence of a sporting culture into motion.

Infrastructural Legacy

Airports, subways, waste management systems and telecommunications were upgraded. The most observable development and improvement in Brazil's infrastructure legacy is in transportation, ports, schools, and parks.

Major sporting events result in the development of new sporting complexes, urban renewal, job opportunities, and the installation of general-purpose infrastructure. A total of 34 venues were used for the Olympics, 18 of them already existed, 9 were constructed for permanent use and 7 were made for temporary use.

Political Legacy

The host country's and city's increased international recognition is also politically advantageous. This is also an opportunity for the host country's local and central government to demonstrate their planning, organisation, and management skills.

Rio, despite the internal political turmoil, hosted the first-ever Refugee Olympic Team. According to the UNHCR, there are 82.4 million forcibly displaced persons in the world, which is the same as Germany's population

Negative Impacts

Sociocultural and Psychological Legacy

If anything goes wrong in the organization, management or security, it will be remembered as a blot in the history of Olympic events. It can also smear the image of the host country.

The Zika virus outbreak resulted in lesser tourism than the Brazilians expected. Moreover, the incurred extra cost over the requisite health safety measures. Some athletes withdrew from the Olympics due to Zika fears.

Police allegedly kidnapped and robbed a New Zealand athlete. The Australian Paralympic team had two members robbed. Near one of the beach volleyball sites, human remains washed ashore on the coast. All of this comes during a year in which police-related deaths and street muggings have increased dramatically in Rio.

Tourism Legacy

The same study that showed the positive impact of hospitality infrastructure in Brazil on tourism found that there was a lesser impact on tourism from the 2016 Rio Olympic Games, indicating a disjointed relationship between the Games and tourism benefits.

Sporting Legacy

New athletic arenas have astronomical expenses since they are built on the ruins of old ones. The sporting culture in the youth that comes like a tsunami during the Olympics demands maintenance in the form of community help which may or may not be available, resulting in the culture fading just as fast as it arrived.

Infrastructural Legacy

Even after the investments made in improving the infrastructure, guests had complaints with services and management which reflected poorly on Brazil.

Several countries complained that the rooms were in poor condition when they arrived at the Olympic Village. The most common issues were plumbing and electrical issues. Only 10 of the 31 buildings were "inhabitable," according to an Australian representative.

Political Legacy

Former Rio de Janeiro governor Sérgio Cabral admitted in 2019 to helping pay a \$2 million (£1.6 million) bribe to obtain the 2016 Olympic Games for the Brazilian city. He told a judge that the money was paid to gain votes at a 2009 decision-making meeting.

Conclusion

The public perception of the Rio de Janeiro Olympics can be seen as a high risk, high gains estimation with a lot more than the monetary costs at stake. It is a matter of great national pride, patriotism, the image at the international fora and emotional investment. The extent of developmental works carried out in a relatively short period of time, especially in a city like Rio de Janeiro of the developing world, demands maintenance and attention from the administration and local residents to make the most of this sudden influx of investments, thereby ensuring the project is a sustainable one in the long run, not a deadweight post the Olympics.

We see that after the Olympics had ended, Brazil faced a net recession in its economy. The Games did help to lower the unemployment rates and provide more training opportunities during the preparation stages. The sustainability of these venues was what led to most expenses and a decreased long-term economic benefits. Since 2016, No big sporting event like Rio has been hosted and most of the centres developed are still unattended and not used for any event. With the Covid – 19 Pandemic leading to greater degradations in the economy, many long-term impacts were hardly observed. These were seen as a wasteful part in terms of hosting the Olympics for the benefit of the citizens.

Recommendation

There is a certain potential solution for the economic issues surrounding the exorbitant affair of the Olympics, nonetheless, with these solutions the host cities can receive maximum positive economic impacts. One such recommendation is revisiting the previous Olympics host city. By using the same sports facilities, Olympic villages, and infrastructure cities can achieve a recurring gain on the investments into infrastructure, transportation, and community development.

The 1996 Atlanta games proved to be relatively profitable and provided a certain economic impact to Atlanta and the surrounding area. The success of the Atlanta Olympics can be credited to the utilisation of corporate sponsorship and the use of existing infrastructure.

Additionally, governments imposing taxes to finance the Olympics, special lotteries can be created to raise revenue and increased investment for generating returns on investment that can be used. Selecting one to two cities for every continent will allow economies of scale, and receive economic benefits periodically, and allow for sustainable community development. Additionally, already selected host cities would eliminate unnecessary financial overburdening on new cities to spend on hosting the Olympics.

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