

2010 World Cup stadia investment: does the post-event usage justify the expenditure?

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Abstract

This paper provides an *ex-post* analysis of the utilisation of the stadia which were built for the 2010 FIFA World Cup. The South African government invested large sums of public money into making significant upgrades to existing stadia as well as towards the development of new stadia, in order to meet FIFA requirements. This paper determines whether the substantial investments into the stadia infrastructure is justified by the utilisation of the stadia in the aftermath of the tournament. By using a modified cost-benefit analysis, the monetary construction costs of the stadia are compared to the benefits, which have been derived using indices and stadia utilisation rates as a proxy. Generally, the results suggest that there has been a significant decline in the utilisation of stadia following the 2010 World Cup. Furthermore, the results indicate that the costs of the stadia for the 2010 World Cup are significantly larger than the benefits, thus holding the sporting legacy of the event highly questionable. The 2010 World Cup has left the country with an expenditure legacy of an oversupply of stadia, thus making some of the stadia unsustainable. The results of this study appear to be in line with existing empirical research, which suggests that the stadia tend to be underutilised and pose as a financial burden for South Africa, subsequent to the event.

JEL Classification: Z19, D61

Keywords: 2010 FIFA World Cup, stadia, cost-benefit, utilisation

1. Introduction

MEGA-EVENTS ARE SIGNIFICANT NATIONAL or global competitions that produce extensive levels of participation and media coverage (Mills and Rosentraub, 2013). The countries who host these mega-events, such as the FIFA World Cup (WC) or the Olympic Games, require large public investments into both event infrastructure, such as stadia development as well as general infrastructure. Host countries are willing to put this investment forward as they seek to gain a potential positive net benefit. Du Plessis and Maennig (2007) described this benefit in the form of foreign investment,

expenditure by tourists as well as possible longer term benefits, such as technology and the construction of new sporting facilities.

On the 15 May 2004, Fédération Internationale de Football Association (FIFA) awarded South Africa the hosting rights for the 2010 FIFA WC. This was seen as a significant achievement as South Africa was the first country in Africa to host this prestigious event (Borches, 2011). According to former president, Thabo Mbeki, the competition was a milestone for the entire continent, “sending ripple effects of confidence from Cape to Cairo” (Bearak, 2010: p.1). The event also gave the country global exposure as South Africa would have the world’s attention during the tournament (Pillay and Bass, 2008). South Africa hosted the WC in a very successful manor and managed to achieve the third highest overall attendance in history, with an average attendance at each match of 49 670 (CBC, 2012). However, the economic implications of hosting a WC are unclear. Comparisons of pre-event estimates of the economic impact and their actual effects have been shown to differ substantially. Some studies claim that mega sporting events provide a substantial boost to the host economy (Baade and Matheson, 2004). On the contrary, various other economic impact studies have shown that the majority of academic research in this area was found to have non-positive effects on income or employment for the host nation (Baade and Dye, 1990; Baade, 1996; Noll and Zimbalist, 1997; Coates and Humphreys, 1999; Santo, 2005; Allmers and Maennig, 2009). Despite what the empirical research has shown, the South African government still chose to use the ‘theoretical economic impact’ argument to justify public funds for sport stadia (Groothuis, 2014).

Hosting a WC requires large amounts of investment into facilities specific to the FIFA WC, such as stadia, that have the potential to become architectural landmarks or may result in becoming ‘white elephants’¹ (Varrel and Kennedy, 2011; Whitson *et al.*, 2006). South Africa hosted the Rugby WC in 1995 where upgrades were made to various existing stadia. However, in order to meet FIFA requirements, South Africa needed to make significant advancements to their stadia². The FIFA Inspection Group in 2004 suggested that three stadia in South Africa would be suitable for the 2010 WC; the Newlands Stadium in Cape Town, the Ellis Park Stadium in Johannesburg and the King’s Park Stadium in Durban. While five stadia would have to undergo partial refurbishment to qualify as 2010 FIFA WC venues³ (FIFA, 2004). However, South Africa chose to make significant renovations to one stadium (Soccer City) and construct five new stadia (Nelson Mandela Bay Stadium, Moses Mabhida

¹ The phrase ‘white elephant’ is an idiom which suggests that anyone who in the possession of a ‘white elephant’ is seen to have symbolic purposes of justice and power, however, the cost of maintaining the ‘white elephant’ is far greater than its value and is considered to be without use or value (Whitson *et al.*, 2006).

² FIFA requires a net capacity of 80 000 for the opening match and the final. At least 40 000 seats required for group stages, last 16 and quarter finals, while at least 60 000 are required for semi-finals. (FIFA, 2010).

³ These venues are: Bloemfontein (Free Park Stadium), Pretoria (Loftus Versfeld), Rustenburg (Royal Bafokeng Sports Palace), Orkney (Oppenheimer Stadium) and Johannesburg (Soccer City). Additionally, Inspection Group received information that a final choice is expected to be made from among the following stadiums if the 2010 FIFA WC is granted to South Africa: Kimberley (Kimberley Stadium), Nelspruit (Mbombela Stadium), Pretoria (Rainbow Junction), Port Elizabeth (Port Elizabeth Stadium) and Polokwane (Peter Mokaba Stadium) (FIFA, 2004).

Stadium, Mbombela Stadium, Cape Town Stadium and the Peter Mokabo Stadium), despite what the Inspection Group stated. Possible explanations as to why South Africa constructed more stadia than originally required could be due to; pressure from FIFA, political interferences as well as hosting a WC which is comparable to the impressive 2006 Germany WC (Alegi, 2008). Minor upgrades were also done on existing stadia (Ellis Park Stadium, Royal Bafokeng Stadium, Free State Stadium and Loftus Versfeld Stadium). This construction ultimately cost the country R16.16 billion (Alm *et al.*, 2012). Alm *et al.* (2012) stated that all the stadia are publically owned, this implies that the public sector was the main funder for the construction costs and renovations. According to Geyde (2013), the tenders for the construction of the stadia bids were rigged by a cartel which consisted of South Africa's largest construction companies. This demonstrates that even before the stadia were built, they were subjected to negative connotations.

However, Fourie and Santana-Gallego (2011) suggested that one of the greatest benefits the host nation receives from hosting a mega-event is the legacy which is left in the aftermath of the tournament. Furthermore, Menezes (2010) stated that the economic impact which a mega-event has had on a country is characterised by the sustainability of the stadia, which is seen as a long term benefit. In South Africa's case, many of the stadia are said to be underutilised in the wake of the event and continue to be a fiscal burden (Allmers and Maennig, 2008).

Therefore, this research project will investigate the utilisation of the stadia built for the 2010 FIFA WC (subsequent to the event), relative to the expenditure. This will ultimately determine whether South Africa have contributed to an over-supply of stadia and are now having to deal with the difficulties of the under-use of the stadia in the aftermath of the tournament.

2. Literature Review

The impact which mega sporting events have had on the host nations have been widely studied. Much academic effort has been invested in the development of methods and models as to measure the economic impacts (Groothuis and Rotthoff, 2014). These methods include: local economic impact models dealing with the effects on economic growth, employment as well as aggregate income, a contingency valuation model, a cost-benefit model, a gravity model, an input-output (I-O) model as well as stadium indices. Agha (2013) stated that sport stadia are seen to be economic catalysts and therefore, should theoretically lead to positive economic impacts for the local economy. However, on the contrary, past academic research has shown that the impact which sport stadia have had on the economy is not in alignment with the theory (Groothuis and Rotthoff, 2014).

A number of studies have been conducted to determine the change in local economic activity due to the presence of a sports teams and stadia, within a specific metropolitan area. Baade and Dye (1990) conducted a study to determine the impact which a franchise had on retail sales and aggregate income. They found a small increase in the manufacturing industry with a new or renovated stadium, however, the economic benefits were not great enough to justify the stadium subsidies. Baade (1996) sought to

determine the change in aggregate income due to the presence of a sports team or stadia, within a specific metropolitan area. The study concluded that there was a negative relationship. Similarly, Noll and Zimbalist (1997) sought to determine the effect of a sport stadium on local economic growth and employment. They found that the subsidy for the new stadium exceeded the financial benefits. Coates and Humphrey (1999) found that the presence of a sports team or stadia had positive effects in the amusement and recreation sector, but these effects were relatively small. Overall the study proposed that sport stadia do not create employment nor income. They suggested that the reasoning for the positive significant results was due to the levels of consumption being shifted and a substitution effect between different sectors. Contrasting results, however, were found by Agha (2013), which proposed that stadia do indeed create a positive economic impact. This study was however, conducted on minor league stadia in smaller communities.

An *ex-post* cost-benefit analysis was conducted by Du Plessis and Maennig (2007), on the 2006 Germany FIFA WC. On the cost side, the study found that Germany spent US\$1.9 billion on the construction and upgrades on their 12 stadia (4 new stadia). South Korea and Japan, for the 2002 WC, constructed 17 new stadia while only 3 were upgraded at a cost of US\$2 billion and US\$4 billion, respectively. In contrast to spending billions of US dollars on the construction and upgrading of stadia, France, who hosted the WC in 1998, only spent US\$500 million (Du Plessis and Maennig, 2007). As opposed to Germany, South Korea and Japan, France only built one new stadium; 'Stade de France' (Szymanski, 2002). The French focused on renovating existing stadia, in order to meet FIFA requirements, rather than constructing new stadia. Although the stadia construction comes at a huge expense to the host nation, Allmers and Maennig (2008), as well as Du Plessis and Maennig (2011), suggested that the stadia costs should not be attributed solely to the FIFA WC, as the stadia would provide long term benefits.

Previous studies have found that the benefits of hosting a WC are not seen as pecuniary benefits, but rather as intangible benefits. Walton *et al.* (2008) used a contingent valuation method to determine the benefits of hosting the 2012 Olympics in London and found that there were positive intangible benefits. Atkinson *et al.* (2008) also used a contingency valuation method and found that households in the United Kingdom had an aggregate willingness to pay for the intangible net benefit of hosting the 2012 Olympic Games in London, of approximately £2 billion. Kavetsos and Szymanski (2010) found that the host nation experiences a positive impact on national well-being or the 'feelgood' factor in the short term, however, they found little evidence for longer term benefits. Allmers and Maennig (2008) proposed that new stadia structure built for WC's engender a 'novelty effect.' Studies conducted by Quirk and Fort (1997), as well as Feddersen *et al.* (2006) suggested that the construction of new stadia do have a 'novelty effect,' as they both found that the average number of spectators increased when a new stadium was constructed. Noll (1974), however, reported that 'novelty effects' gradually wore off and found a gradual linear decline in the attendance generated by a new stadium. This was also evident in the study by Kavetsos and Szymanski (2010). Maennig and Schwarthof (2006) stated that the

construction of new stadia have the potential to become ‘iconic buildings’ and create an architectural legacy.

Rose and Spiegel (2011) used a gravity model to investigate the net effect on international trade flows for countries hosting Olympic Games. The study found that hosting the Olympic Games does have a significant effect as, on average, trade increased by over 20% for host nations. Fourie and Santana-Gallego (2011) used a gravity model to determine the net change in tourist arrivals due to a nation hosting a mega-event. The study presented mixed results, however, on average, tourist arrivals increased by roughly 8%.

Lee and Taylor (2005) used an input-output (I-O) model on foreign tourist numbers and their expenditures in order to determine the impact of the 2002 FIFA WC in South Korea. The study found that total tourist expenditure was US\$522 million, which generated US\$1.35 billion of output. However, Lee and Taylor (2005) suggested that the I-O model does not take into account certain concepts, such as the displacement of potential tourists. Moreover, Gelan (2003) proposed that these studies are dependent on the accuracy of the estimated number of attributable visitors.

Alm *et al.* (2012) conducted a study to determine the sustainability of stadia which were built for mega-events. The study investigated 75 stadia which had been built around the world for specific mega-events. They then sought to derive a ‘world stadium index.’ This was done by dividing the attendance figures of each stadium in the year 2010 with the respective stadia’s capacity in order to determine the utilisation of the stadium. In South Africa, they found that the country had contributed to an over-capacity of stadia.

3. Research Method

The theoretical framework with which this research project addresses, falls under the sports economics field of research. It will involve the microeconomics theory of a modified cost-benefit analysis, which is an analytical tool used to determine the worth of a project (Cellini and Kee, 2010). The cost-benefit analysis provides a consistent procedure for evaluating decisions in terms of their costs and benefits (Drèze, and Stern, 1987). The modified cost-benefit analysis will compare the costs to the benefits of each stadium and ultimately determine whether each stadium is well utilised or underutilised. The usage of the stadia can then be gauged, relative to their expenditure. The model is modified as the benefits will not have a monetary value. This is due to the unavailability of data with regards to the financials of the stadia. This study will therefore be comparing the costs, which contain a monetary value, to the benefits which have been derived from usage indices and stadia utilisation rates, which act as a proxy for the benefit. The financial construction costs of each stadia (new stadia as well as the costs of minor upgrades on existing stadia) for the 2010 FIFA WC have been obtained from various sources. The benefits which South Africa receives is the legacy of the stadia. However, in order to determine if this legacy is positive or negative, each stadium will be assessed in terms of the utilisation of the stadia in the aftermath of the tournament. The stadia which have been analysed in this paper is the; Nelson

Mandela Bay Stadium, Mbombela Stadium, Cape Town Stadium, Soccer City Stadium and Loftus Versfeld Stadium.

The usage index, as well as utilisation rates will determine the benefit. This will be done by using two different methods: In the first method, the utilisation rate of each stadium will be determined. This is done by comparing the average attendance figures per annum with the stadia capacity, expressed as a percentage. This is calculated by dividing each stadia average attendance figures for the year, with the stadia's total capacity. Therefore, the utilisation rate represents the relationship between the number of spectators per year and the stadium's capacity. The second method also focuses on the stadia attendance figures and the capacity to determine a 'stadium usage index.' This method is similar to that of Alm *et al.* (2012), who sought to determine a 'world stadium index.' This method determines the number of times that a specific stadium is theoretically filled to its maximum capacity. This will be calculated by taking the stadia's total attendance figures per year, divided by the stadia capacity.

The two different methods have been chosen since they reflect different aspects in the usage of the stadia, in relation to their capacity. For example, if a stadium has a high utilisation rate, this suggests that when events are held at a venue, the attendance figures are high. However, if the stadium usage index figure is significantly lower than the total number of events, this suggests that the attendance figures are low as the stadia is theoretically filled to its maximum capacity less than the number of events held. Thus, by using a combination of the two methods, this study can determine the usage of the stadia for events as well how well the events are attended.

It is to be noted that the study only took into account events which took on the pitch, e.g. sporting events, concerts, and/or any other mega-events. However, events which were not taken on the pitch have not been taken into account, e.g. weddings, stadium tours.

Due to the unavailability of data, it was not possible to obtain all the attendance figures for some of the stadia, neither through primary nor secondary sources. The main reason for this was primarily the lack of answers from stadia management. This was surprising seeing that billions of Rands have been invested into these stadia to ensure their long-term sustainability. It is very unfortunate that certain venues which were built to host one of the biggest tournaments in the world, could not supply adequate information in any form.

4. Results

The results in table 1 show each stadia per annum figures of the number of events held, the utilisation rate, as well the stadium usage index. The results suggest that the number of events held at each stadia in 2010 are relatively lower than the other years, except Loftus Versfeld which is the only stadium in this study which was not newly built⁴. Loftus Versfeld and Soccer City hosted the most amount of events over the five year period, of 127 and 128 events respectively. This is relatively high compared

⁴ It is to be noted that the number of events held in 2014 are likely to be deflated for all stadia due to data only being collected for half of the 2014 year.

to the Cape Town Stadium and the Mbombela Stadium, which only hosted 96 and 98 events respectively.

Table 1. Wold Cup Stadia Analysis

| | Number of Events | Utilisation Rate (%) | Stadium Usage Index |
|-----------------------------------|-------------------------|-----------------------------|----------------------------|
| Nelson Mandela Bay Stadium | | | |
| 2010 | 17 | 48.40 | 8.23 |
| 2011 | 30 | 26.91 | 8.07 |
| 2012 | 27 | 23.85 | 6.44 |
| 2013 | 21 | 42.32 | 8.89 |
| 2014 | 9 | 25.23 | 2.27 |
| Total | 104 | | 33.90 |
| Loftus Versfeld Stadium | | | |
| 2010 | 28 | 51.87 | 14.52 |
| 2011 | 27 | 36.27 | 9.79 |
| 2012 | 22 | 42.39 | 9.33 |
| 2013 | 32 | 30.46 | 9.75 |
| 2014 | 18 | 33.11 | 5.96 |
| Total | 127 | | 49.35 |
| Cape Town Stadium | | | |
| 2010 | 14 | 81.57 | 11.42 |
| 2011 | 20 | 26.31 | 5.26 |
| 2012 | 28 | 20.84 | 5.84 |
| 2013 | 24 | 25.78 | 6.19 |
| 2014 | 10 | 26.72 | 2.67 |
| Total | 96 | | 31.38 |
| Soccer City Stadium | | | |
| 2010 | 23 | 65.91 | 15.16 |
| 2011 | 28 | 34.86 | 9.76 |
| 2012 | 26 | 24.55 | 6.38 |
| 2013 | 34 | 36.39 | 12.37 |
| 2014 | 17 | 29.00 | 4.93 |
| Total | 128 | | 48.61 |
| Mbombela Stadium | | | |
| 2010 | 11 | 52.01 | 5.72 |
| 2011 | 20 | 29.76 | 5.95 |
| 2012 | 18 | 15.48 | 2.79 |
| 2013 | 34 | 21.90 | 7.44 |
| 2014 | 15 | 9.80 | 1.47 |
| Total | 98 | | 23.37 |

The utilisation rate of each stadium in the year 2010 is relatively higher when comparing it to other years. A possible explanation for this is due to the high attendance figures at the FIFA WC matches. In the post-WC years, Loftus Versfeld Stadium and Soccer City Stadium generally had higher utilisation rates ranging from 29% to 42.39%, especially when compared to the Mbombela Stadium whose utilisation rate ranged from only 9.8% to 29.76%. The Nelson Mandela Bay and the Cape Town Stadiums' utilisation rates were also relatively lower, averaging around 30% and 25%, respectively.

Overall, these results are very low which suggests that the average crowd attendance post-WC are very low.

The total stadium usage index exhibited relatively high results for Loftus Versfeld Stadium of 49.35 and Soccer City Stadium of 48.61, while the results were relatively lower for the Cape Town Stadium, Nelson Mandela Bay Stadium and the Mbombela Stadium⁵. However, if we compare the stadium usage index to the number of events for even the most successful stadium (Loftus Versfeld), the results suggest out of 127 events, the stadium was theoretically filled only 50 times over the five year period.

It is to be noted there was no benchmark set concerning the number of events or utilisation rates of each stadia. However, if one had to compare this study's utilisation rates to the Barclays English Premier League utilisation rates, the figures suggest that for the Barclays English Premier League 2014-2015 season, the average attendance figure for the entire league was 92.35% (Football365, 2014). Although this study's results do not particularly pertain to just the South African Premier Soccer League's (PSL) utilisation rates, the Barclays English Premier League utilisation rate is significantly higher than the utilisation rates for any stadia found in this study.

5. Discussion

Generally, the results suggest that the utilisation of all stadia used in the study are relatively low. To have such weak average attendance figures may be one of the main reasons why some stadia face financial difficulties of breaking even, why the stadia are deemed to have negative sporting legacies as well as increased long term debt (Alm *et al.*, 2012; Coakley and Souza, 2013). Generally, the utilisation rate and stadium usage index of all the stadia decreased significantly during the post-WC years.

The Cape Town Stadium, which was the most expensive stadium at a cost of R4.4 billion (Independent Online, 2010)⁶, in the year 2010 had the highest utilisation rate of 81.57%. However, this high utilisation rate was inflated due to the high attendance figures for the WC and the relatively low number of events. In the year 2010, a total of 14 matches were played, which 8 of them were WC matches. The stadium had a usage index of 11.42 which is relatively high, seeing that the stadium hosted only 14 fixtures that year. However, the results suggest that the utilisation rates and stadium usage index figures post-WC (2011 to 2014), were significantly lower than in 2010. In the year 2012, the Cape Town Stadium hosted the greatest number of events, yet, the events in that year received the lowest utilisation rate. In the years 2011 and 2013, the stadium attained relatively higher utilisation rates. A possible explanation for this was due to the number of concerts held in those years which were well attended⁷. Although the utilisation rates were relatively high, the results suggest that the stadium was theoretically filled only five to six times per year, despite the stadium holding 44 events in the years

⁵ It is to be noted that the stadium usage index results for 2014 are likely to be deflated for all stadia due to data only being collected for half of the 2014 year.

⁶ According to Phakathi (2014), the stadium has been running at an annual loss of roughly R40m. It has also been struggling to host events, largely due to the high hiring costs.

⁷ Concerts held in 2011 included: U2, Neil Diamond and Coldplay. While in 2013, concerts held were: Red Hot Chili Peppers, Bon Jovi, Justin Bieber as well as Rihanna.

2011 and 2013 combined. The 66 000 seat stadium was built due to the pressures from FIFA and the South African government, as local authorities had initially planned to upgrade the existing Athlone Stadium (Dunmore, 2010). Cape Town in fact, had another stadium which could have been used. The Newlands Stadium is a 51 900 seat stadium and owned by the Stormers Rugby Club, which would have required minor upgrades in order to meet FIFA's requirements (Allmers and Maennig, 2008). These upgrades could have been done at a fraction of the cost of the new stadium⁸, which would have reduced the amount of excess spending significantly (Dunmore, 2010)⁹. Efforts have been made by the Western Province (WP) Rugby Union to move the Stormers Rugby Club from their current Newlands Stadium to the Cape Town Stadium, which will potentially increase the number of events and the utilisation rate of the WC stadium. Saunders (2012: p.1) stated that the "Cape Town Stadium is fairly well utilised already, but that the move of WP Rugby to the stadium would significantly improve this, making the stadium highly utilised, operating at breakeven and probably at a surplus." Although the Cape Town Stadium has a larger capacity, it only has 100 corporate suites, compared to that of the Newlands Stadium's 315 suites (Independent Online, 2010).

The Soccer City Stadium is South Africa's most notable and largest stadium with a total capacity of 94 736. This stadium was built at a cost of R3.3 billion and hosted 8 WC matches, among these matches was the final. The stadium is seen to be the most successful newly built stadium in this study, due to its relatively high utilisation rates in relation to the number of events held. However, the Soccer City Stadium's highest post-WC utilisation rate of 36.39% for 34 events in 2013, is still a considerably low average crowd attendance figure. The stadium's main anchor tenant is the Kaizer Chiefs F.C. According to Alm *et al.* (2012), this team has the highest average attendance figures in the Premier Soccer League (PSL). This is a possible explanation as to why the Soccer City Stadium attained one of the best post-WC utilisation rates, relative to the other stadia. However, the size of the stadia may be a factor which potentially deflates its utilisation rate. For example, if the Soccer City stadium has an utilisation rate of 50%, the crowd attendance would be 47 368. Whereas, if the Nelson Mandela Stadium, whose total capacity is 46 082, achieved a 50% utilisation rate, the crowd attendance would be only 23 041. Moreover, 50% of Soccer City Stadium's capacity is greater than 100% of Nelson Mandela Stadium's capacity. Therefore, the results for the Soccer City Stadium are seen to be considerably adequate, in relation to the size of the stadium. Much like the Cape Town Stadium, Soccer City has also hosted a noticeable amount of concerts which were very well attended¹⁰. This ultimately has contributed to the relatively high utilisation rate and to the stadium usage index figures.

⁸ Cape Town Stadium cost R4.4 billion to build, compared with an estimated R1.1-billion to revamp the Newlands stadium or R1.7-billion to extend the Athlone stadium (Brümmer, 2010).

⁹ Similarly, Durban had the existing Kings Park Stadium which has a total capacity of over 50 000. This stadium underwent major renovations for the 1995 Rugby WC. However, the South African government constructed the R3.4 billion Moses Mabhida Stadium, which is located adjacent to Kings Park. Du Plessis and Maening (2009) however, do state that the Moses Mabhida Stadium was not only constructed for the intention of the FIFA WC, but also for the application of the 2020 Summer Olympics and 2022 Commonwealth Games.

¹⁰ From 2011 to 2014, Soccer City has held 12 concerts which were very well attended.

Loftus Versfeld was the only existing stadium used in this study. The stadium spent R145 million on minor upgrades for the WC, as to meet FIFA requirements. The results suggest that Loftus Versfeld was the most successful stadium as it had the highest average post-WC utilisation rates. Loftus Versfeld is primarily used as a rugby stadium as it is home to the Vodacom Blue Bulls. The stadium is, however, also home to the Mamelodi Sundowns F. C. The stadium's most successful year, post-WC, was in 2012, with an utilisation rate of 42.39% and a stadium usage index of 9.33 for the 22 events held that year. Between the two clubs, they attract relatively high crowd attendance figures, especially when these local teams face their respective derbies where one can expect the stadium to be close to full capacity¹¹. However, in saying that, some of the Vodacom Blue Bulls and Mamelodi Sundowns events against mediocre sides often only draw smaller crowds of only a few thousand¹².

In contrast to the relatively successful Loftus Versfeld and Soccer City Stadium, the Mbombela Stadium, which cost the country R1.05 billion, hosted the least number of events over the years, except in the year 2013¹³. The stadium also achieved the lowest average utilisation rate per annum, relative to the other stadia. In 2014, the stadium attained an utilisation rate of 9.8%. This suggests that, of the 15 events which the stadium had hosted, on average, the crowd attendance was only 9.8%¹⁴. Moreover, the stadium usage index suggests that, theoretically, the stadium has only been filled to its total capacity roughly one and half times. The stadium is home to the Pumas Rugby Club¹⁵ who play in the ABSA Currie Cup Premier Division as well as in the Vodacom Cup, which are domestic rugby union competitions (Alm *et al.*, 2012). The home crowd attendance figures for the Steval Pumas is very low, as in 2013, they played a total of 12 home fixtures and attained an average crowd attendance of 2 579, in a stadium whose total capacity is 43 589. This is somewhat an improvement from the 2012 season where 10 matches were played with an average crowd attendance of 1 268. The results suggest that Steval Puma's have had trouble attracting large crowds. Another possible explanation to consider, is whether this WC venue is too large in relation to the local needs. A very similar argument can be put forward with regards to the Soccer City Stadium.

The Nelson Mandela Bay Stadium cost the country R2.05 billion. In contrast to this expenditure, the results show relatively low utilisation rates. The stadium also attained the lowest 2010 utilisation figure, compared to the other stadia, of 48.4%. The attendance figures for the 8 WC matches played at the stadium were relatively high. This suggests that the other events which had taken place at the stadium in the year 2010 were poorly attended, which deflated the 2010 utilisation rate. The 46 082 seat stadium has the Eastern Province (EP) Kings as their main tenants. The EP Kings currently play in the ABSA

¹¹ On the 20 March 2012, the derby between Mamelodi Sundowns F.C. and Orlando Pirates F.C. in the ABSA Premiership attracted a crowd of 45 778. Moreover, on 2 June 2012, the derby between the Vodacom Bulls and the Stormers in the Super Rugby Competition attracted a crowd of over 50 000.

¹² In 2012, the match between Mamelodi Sundowns and Wits University only drew a crowd of 2 839.

¹³ This was due to South Africa hosting the African Cup of Nations (AFCON) and using the Mbombela Stadium as one of the venues.

¹⁴ It is to be noted that the Mbombela Stadium has the lowest total capacity figure of all the new built stadia.

¹⁵ The team who play in the ABSA Currie Cup Premier Division are called the Steval Pumas.

Currie Cup Premier Division and the in Vodacom Cup. The results suggest that the crowd attendance figures for these matches are relatively low. In 2012, the stadium hosted 10 ABSA Currie Cup fixtures with an average attendance of 6 824. However, in 2013 the Southern Kings¹⁶ were prompted to the international Super Rugby competition. From the results, the Nelson Mandela Bay Stadium's utilisation rate in the year 2013 was 42.32%, which is comparatively higher than the other post-WC years. The attendance figures suggest that the Super Rugby competition was well attended, which has had a significant impact on the results for the year 2013. The EP Rugby Union President Cheeky Watson stated that, "the Eastern Cape and the amazing crowds that attended the Super Rugby games at the Nelson Mandela Bay Stadium this year have shown that this is the case, with the Southern Kings securing the third highest crowd attendances of the fifteen teams taking part in the competition" (Rugby365, 2013: p.1). However, the Southern Kings were demoted after the year 2013. The demotion of the Southern Kings has had a direct effect on the utilisation rate. In the 2014 year, the utilisation rate decreased to 25.23%, which is roughly in line with the utilisation rates of 2011 and 2012. Moreover, in 2014, only 9 events have taken place, with the majority of them being friendly matches and one international match; South Africa vs Scotland, which drew a crowd of 40 793. The stadium usage index figure of 2.27 for 2014, suggests that the stadium has been theoretically filled just over 2 times, in 9 events, with one of events being the very well attended international rugby test match.

6. Conclusion

Ultimately, the 2010 FIFA WC has contributed to an oversupply of stadia. Academics argue that it is in the spirit of the event to construct large and expensive architectural landmarks, however, many do not realise the implications which the stadia face in the aftermath of the tournament (Preuss, 2007). South Africa is now faced with the challenge of trying to attract larger crowds to the majority of the new stadia, in order for them to be sustainable¹⁷. South Africa potentially could have hosted a successful WC without the construction of the unneeded Cape Town Stadium, Moses Mabhida Stadium as well as other stadia and spent a fraction of the cost on upgrading the existing Newlands and Kings Park Stadia. With the country spending over R16 billion on stadia development, the WC has left the country with an expenditure legacy of an oversupply of stadia, and this has led to the under-use of the stadia in terms of the number of events held, as well as the utilisation rate of those events. This study suggests that the costs of the stadia for the 2010 WC are significant larger than the benefits and therefore, the sporting legacy of the event is highly questionable. It is a paradox that the only existing venue used in this study (Loftus Versfeld), attained higher utilisation rates compared to the newly built WC venues. This suggest

¹⁶ The EP Kings changed the name of the team which competed in the Super Rugby competition to the Southern Kings in 2013.

¹⁷ Japan face a very similar problem after hosting the 2002 WC, as local teams have chosen not to use the WC facilities, due to their local stadia being more adapted to the average crowd attendance. Moreover, the level of interest in soccer is not very big (Unterreiner, 2006).

that the local tenant of a stadia does play a crucial role in the usage of the stadia, as well as the utilisation rates of the specific events.

The size of the stadia, in terms of capacity, are often seen as being too large for local use. Therefore, it would be better for countries, in terms of sustainability, to build stadia in accordance with their national and local sporting needs. This is not suggesting that FIFA should lower their standards, but rather reduce their requirements for capacity. This would partly contribute to the utilisation of the stadia after the event. A control mechanism, which is based on experience from previous events and not on FIFA requirements, overly optimistic expectations and a lack of realistic data, is required. This will provide countries who wish to hold future mega-events with assistance as to the number of stadia they require, so they are not left with a long term legacy challenge (Alm *et al.*, 2012). Moreover, the host country should be aware of the long term legacies attached with such an event and should not be caught in the eagerness of the event and neglect the potential negative consequences.

Despite the shortcomings of inadequate data sources, the general trends described in this study are valid. Further research into this topic is needed to determine whether the government contributed to an over-capacity of stadia for the WC, which in its legacy has led to the under-use of the stadia in the aftermath of the tournament.

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