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A thin line between a sport mega-event and a mega-construction project: the 2018 Winter Olympic Games in PyeongChang and its event-led development

Jung Woo Lee (University of Edinburgh)

Introduction

This article is concerned with the impact that hosting a sport mega-event has on regional development. It particularly looks at the case of the Winter Olympics held in a rural town. There is no need to highlight that the staging of a global mega sporting event involves the improvement of local areas, and that this environmental shift significantly affects the social and economic conditions of host cities (Horne & Whannel, [2016](#); Müller, [2015](#); Preuss, [2015](#)). The preparation process often entails the construction of new sport and cultural facilities, and also includes the installation of transportation and communication infrastructure in order to deliver a major international event more efficiently (Essex & Chalkley, [1998](#); Maennig & Schwarthoff, [2011](#); Müller & Gaffney, [2018](#); Shin, [2014](#)). Extensive media reach of the event enables the host country or city to demonstrate its merit to international audiences, and this place promotion can subsequently attract more tourists and capital investment to the region (Hiller, [2006](#); Liao & Pitts, [2006](#); Wise & Harris, [2017](#)). These developmental potentials that a sport mega-event can utilise often entice many countries to be a host of such a sporting occasion within their urban regeneration strategy (Christie & Gibb, [2015](#); Florio & Edwards, [2001](#); Gratton et al., [2001](#)).

However, most academic literature on event-led development mainly deals with major international contests held in metropolitan areas, paying attention to its influence on urban planning (Gratton et al., [2001](#); Maennig & Schwarthoff, [2011](#)). Understandably, these studies chiefly examine the Summer Olympic Games and the FIFA World Cups Finals which are normally staged in large cities (Davies, [2012](#); Müller & Gaffney, [2018](#)). Interestingly, Smith ([2010](#)) investigates the impact of an international cycling event on the outskirts of London but this study is also essentially about the revitalisation of urban areas. Scholarly publications concerning the development implications of the Winter Olympics, especially those taken place in a rural setting, are relatively rare. Of course, there are some notable pieces of research that concern socio-economic and political ramifications of this winter sport mega-event (Essex & Chalkley, [2004](#)). Yet, these works tend to focus either on the Olympic Winter Games awarded to a large cosmopolitan city (Hiller, [2006](#); Scherer, [2011](#)) or on the political economy of the winter sporting occasion itself (Golubchikov, [2017](#); Müller, [2014](#); Orttung & Zhemukhov, [2014](#)). Hence, the peculiar nature of the Winter Olympics, which is a global mega-event frequently taken place in a small rural town, was not fully grasped in these investigations.

This research attempts to fill this void. The main objective of this study is to identify the economic and ecological impact of the 2018 Winter Olympic Games in PyeongChang. This South Korean town is set in remote mountainous terrain, and the local government intended to exploit this event to modernise its province. As PyeongChang and the surrounding area are one of the least developed regions in the country, this event was planned as a tool for local development from the outset (Park & Won, [2011](#); Ryu & Cho, [2015](#)). Therefore, an investigation into this Winter Olympics can offer a useful insight into the effect of hosting a global sports mega-event in an agricultural town.

The focal point of this study is upon a range of Olympic related construction projects. Arguably, the installation of new world-class stadiums and associated infrastructure are the most visible examples that transform the socio-economic climate of the local community. The impact of the set of large structures is clearly observable in PyeongChang as this remote area had no man-made landmark before the Olympics. In this respect, I will first look at the construction projects being undertaken in preparation for the Winter Olympics, and then consider how the newly built facilities are being maintained after the event. Particular attention will be paid to their impact on the local economy and ecology. Various controversies over the Olympic development plan which cause tension and disagreement within the local community and between the central and local governments are also discussed here. This discussion will extend to the recent IOC's decision to award the 2024 Winter Youth Olympic Games to the province Gangwon in South Korea. This is because the staging of this competition is currently presented as one of the most notable legacies of PyeongChang 2018 since the Youth Olympics in Gangwon will reuse the sports facilities and associated amenities built for the 2018 event (IOC, [2020a](#); Yonhap, [2020](#)).

I must clarify that this paper mainly rests upon a range of secondary resources such as government documents including official statistics, construction companies' annual reports, civic organisations' pamphlets, and media news items. While this methodological approach may reduce the originality of this article, a critical narrative being presented here, which is the outcome of a meticulous synthesis of existing literature, can make a useful contribution to an academic debate on sport, regeneration, and community.

Sport mega-event led development

The staging of a sport mega-event can facilitate the regeneration of urban space and the revitalisation of rural and peripheral areas (Davies, [2012](#); Essex & Chalkley, [1998](#); Jones & Stokes, [2003](#); Smith, [2010](#)). Within the neoliberal world order, the adaptation to global capitalism and the promotion of the consumerist economy have become dominant agendas for urban renewal and local development (Harvey, [1989](#); Hiller, [2006](#); Shin, [2014](#)). At this juncture, a major sporting event offers a regional government an attractive opportunity to upgrade and rebrand its municipality (Davies, [2012](#); Misener & Mason, [2006](#); Scherer, [2011](#)). This is because a sport mega-event is now a core component of the global culture industry which endorses activities related to marketing of a place, an advertisement for local tourism, and an establishment of a commercial zone (Horne, [2006](#); Lash & Lury, [2007](#); Lee, [2019](#); Smart, [2018](#); Urry & Larsen, [2011](#)). Such developmental and promotional initiatives associated with a sport mega-event exemplify the practice of spatial upscaling in a neoliberal sense (Shin, [2014](#)). With regard to this, Preuss ([2015](#)) identifies three essential types of mega-event-led development that sustain a neoliberalist territorial policy: (1) the building of new sports facilities including a major stadium, (2) the installation of new social infrastructure and amenities, and (3) the influx of additional economic resources. These three different forms of

developmental incentives deserve a further explanation as a similar pattern can also be observed in PyeongChang.

First, hosting a sport mega-event frequently necessitates the provision of new sporting facilities. Particularly, the construction of a large stadium can reshape the economic landscape of the place (Essex & Chalkley, [1998](#)). Such a monumental building is often regarded as a local landmark, and this architectural distinctiveness can attract more visitors to the region. This increased human traffic subsequently contributes to the revitalisation of the local economy (Maennig & Schwarthoff, [2011](#)). Second, this opening of sporting facilities often takes place in conjunction with the improvement of transportation and communication system and the installation of convenient amenities (Florio & Edwards, [2001](#)). It is not uncommon to see that new road and subway networks are constructed in order to enhance the accessibility to a newly built or refurbished sports complex. This regeneration process also includes the arrangement of shopping malls, restaurants, and hotels so as to provide a more convenient environment for tourists. Third, the local government can secure supplementary economic resources to finance various improvement projects related to a sport mega-event and to subsidise small business near the event venues (Preuss, [2015](#); Smith, [2010](#)). This supply of extra funds also enables the regional government to invest in a state-of-the-art industrial infrastructure even if such enhancement planning is indirectly linked to the athletic competition (Shin, [2014](#)). This combination of a popular event, leisure facilities, and consumerist amenities can boost local tourism also (Wise & Harris, [2017](#)).

However, there is a view that the developmental effect of a sport mega-event is not infrequently overstated (Horne, [2007](#); Kennelly, [2016](#); Lee, [2017](#); Müller, [2015](#); Smith, [2010](#)). For instance, the economic sustainability of newly built sporting facilities, especially a massive stadium, is often questionable due to high operational and maintenance cost (Searle, [2002](#)), and such a sporting space easily turns into a white elephant after the event (Roult & Lefebvre, [2010](#)). Subsequently, these facilities engender a large financial burden on the host region instead of creating a new source of income. The Winter Olympics is more prone to generate this post-event symptom because expensive sport venues such as ski-jumping hills and bobsled tracks are unlikely to be used by ordinary people due to the public safety and specific skills needed to take part in these sports (Hiller, [2006](#); Lee, [2019a](#)). Horne ([2007](#)) further notes that event organisers aggressively advertise presumed economic and social benefits of a sport mega-event with the purpose of gaining more support from the local community. He stresses that, on many occasions, this developmental ambition is not materialised when the game is over.

Moreover, the regeneration driven by a mega-event can segregate a local community. A municipal government tends to host a major sporting competition as a tool for the gentrification of deprived areas (Müller, [2015](#); Smith, [2014](#)). Potentially, hosting a mega sporting event can increase social cohesion and enhance mutual trust between the community members (Misener & Mason, [2006](#)). However, Horne ([2017](#)) argues that such a functionalist claim, which is frequently adopted by event organisers to justify their pro-development agenda, needs to be carefully and critically probed when such a view is permeated into a public sphere. In fact, a number of studies demonstrate the negative effects of a mega-event on a host society. For instance, an affluent population usually benefits more from this rejuvenation project which often includes the provision of privatised leisure facilities and the arrangement of a commercial district (Paton et al., [2017](#)). Real estate investors can also gain capital as the redevelopment of the event location subsequently increases the value of properties near the sporting venues (Kennelly & Watt, [2012](#)). For most low-income families,

this regeneration makes their hometown an excessively expensive place to live. This inflation eventually forces them to leave their home for a more affordable house (Watt, [2013](#)). This relocation process occasionally involves an eviction so that an attractive sporting and commercial complex can be built without much interference (Davis, [2011](#); Horne, [2017](#)). Additionally, in their research into the 2016 Olympic Games, Duignan and McGillivray ([2019](#)) report that the Olympic host tended to serve the interest of the private sector mainly, and the host city's territorial policy reinforced the segregation of a poor community from their rich neighbour while the event was unfolding. This issue of community division can also be found in the development related to the Winter Olympics. In fact, many winter sports are prestigious leisure activities where the entry barrier is relatively high (Lee, [2016](#)). It is, therefore, not uncommon to see that the development portfolio of the Winter Olympics includes the construction of a luxurious ski resort (Ortung & Zhemukhov, [2014](#)). This implies that economically less well-off citizens are often marginalised from the neo-liberal sterilisation of urban and rural space.

Hosting a sport mega-event involves a series of construction projects which inevitably affect a geographical landscape and local ecology (Harvey et al., [2014](#)). This is particularly so when staging the Winter Olympics because the organisation of specific winter sport competitions such as alpine skiing inevitably requires the destruction of woodlands in the mountain (Essex & Chalkley, [2004](#); Lee, [2018](#)). With the increasing importance of environmentalism, global sport governing bodies have implemented a sustainable development policy to run their sporting fixtures in harmony with the surrounding nature (Karamichas, [2013](#); Palmer, [2013](#)). For instance, the IOC revised its charter in 2011 in view of the potentially negative impact that the delivery of the Olympic Games has on natural environments (Shalini & Stubbs, [2012](#)). Furthermore, in December 2014 this global sport governing body has adopted Agenda 2020, which critically reflects gigantism and hyper-commercialism embedded in the IOC's practice, in order to make the Olympic Games economically and environmentally sustainable (Macaloon, [2016](#)). Nonetheless, there is scepticism that such a green approach has hardly enhanced the sustainability of the event owing to a large volume of carbon footprint it still creates (Karamichas, [2013](#)). Regarding this, the notion of ecological modernism is worth considering. Put simply, this theoretical concept indicates that an adapted form of industrialism and consumer capitalism, with the help of the technological advancement that can engineer environmentally sound services and products, can contribute to the recovery of endangered eco-systems (Christoff, [1996](#); Mol & Spaargaren, [2000](#)). This theoretical perspective is especially pertinent to the evaluation of the built environment for the Winter Olympics as the exploitation of a natural setting is almost unavoidable to stage this event (Kim & Chung, [2018](#)). This green capitalist view is compatible with the global free-market economy, and inherently contains the practice of greenwashing a neo-liberal consumption (Millington et al., [2018](#)). In effect, the eco-friendly policy that the global sport industry has embraced appears to be less about protecting the ecosystem but more about promoting their business interests within an artificially constructed green climate (Wilson & Millington, [2013](#)).

The development of Gangwon and the Winter Olympics

The province of Gangwon is the least developed region in South Korea because of the two major reasons: its geographical condition and geopolitical location. First, rough mountainous terrain occupies more than 40% of this province, and a significant portion of its landmass is designated as nature reserves. This natural environment severely impedes the industrial development of Gangwon (Ryu & Cho, [2015](#)). Second, Gangwon is divided by the heavily

armed armistice line which separates North and South Korea. A large volume of South Korean armed forces is stationed in various points in the province, and this results in the demarcation of many areas with limited public access. This geopolitical situation substantially hampers the materialisation of the province's developmental capacity (Kim, [2010](#)). Even during the 1970s and 1980s when the rest of the country underwent a rapid industrialisation process, Gangwon remained almost unchanged. Consequently, the local residents have suffered from the development gap for decades, and the provincial government has long considered the improvement of its socio-economic environments with every available means their policy priority.

Given the developmental initiatives that hosting a sport mega-event can engender, Gangwon province intended to host the Winter Olympic Games as a way to modernise out-dated infrastructure and to vitalise a moribund economic activity in their locality (Park, [2010](#)). The idea of hosting the Winter Olympic Games was first conceived in the late 1990s. As the most mountainous province in the country, a few ski resorts have been operated in Gangwon since the 1950s, and a number of international ski championships were held in these locations from the 1990s (Merkel & Kim, [2011](#)). More importantly, Gangwon staged the Winter Asian Games ¹ in 1999. While this is a much smaller competition than the Winter Olympics, an efficient organisation of this occasion gave this remote Korean province the confidence to deliver the global winter sporting event in the near future (Merkel & Kim, [2011](#)). In 2002, the small rural town of PyeongChang in Gangwon formally submitted its application to host the 2010 Winter Olympics to the IOC, but this game was eventually awarded to Vancouver (Gibson, [2011](#)). The South Korean town again stood as a candidate for the host of the 2014 Olympic Winter Games. Despite their competitive campaign, the rights to stage this event went to the Russian city of Sochi (Merkel & Kim, [2011](#)). With determination, PyeongChang decided to join its third bid for the next Winter Olympics. In the 123rd IOC session in Durban in 2011, this rural South Korean town finally won the rights to host the 2018 Olympic Games (Gross, [2011](#)).

This IOC's decision triggered a series of new development projects in Gangwon (Lee, [2019a](#)). The national assembly approved a special bill which allowed extra funding to be allocated to the province in order to finance the Olympic related infrastructural improvements (Park, [2013](#)). A share price of construction firms in Korea spiked with the expectation that the Olympics would stimulate a domestic construction economy as the delivery of the event entails a series of building projects from major stadiums to road networks (Laurence, [2011](#)). The event organisers also trumpeted that the game would invigorate the local economy and promote fast-track development (Park & Won, [2011](#)). It seemed that the long-held ambition of this region to improve its socio-economic environment was just about to be fulfilled. Yet, this initial optimism soon dissipated, and scepticism and dispute about this planning of the Winter Olympic-led development gradually arose.

In the field of event management and regional development, the 2018 Winter Olympics deserves academic attention at least for two reasons. First, this Winter Olympics is essentially a premier sporting event awarded to a humble agricultural town (Lee, [2016](#)). No major urban structure existed in this region before the Olympics. This distinctive contrast between the scale of the event and the size of the township offers a useful case to observe the developmental impact that this global event had on the rural community. Second, the tensions and dispute were clearly visible in the operation of the Olympic-led development projects. The provincial office prioritised its regional interests when managing the event-related infrastructure, and this local centrism gave rise to the discrepancy between the central and

provincial governments (Park, [2013](#)). Also, the cacophony between civic activists and the Olympic developers could also be heard concerning the implementation of the event-led construction plan (Kim & Chung, [2018](#)). These power games outside the arena render this winter sporting occasion yet another political event.

The construction of the Olympic facilities in PyeongChang

The 2018 Winter Olympic Games were held in two zones: the mountain cluster in PyeongChang for snow events such as Alpine and Nordic skiing and the coastal cluster in Gangneung for ice events including skating, curling and ice-hockey. The former is a small rural town and the latter is a mid-sized city. According to the 2018 national survey, the population of the two places are 43,021 and 215,239 respectively (Gangwon Statistical Information, [2018](#)). This is approximately 2.5% of the entire Korean population. Also, there is no metropolitan area in the mountainous province. While this region had some tourism amenities especially in the coastal area, these were on a relatively minor scale. When the Winter Olympic Games was awarded to this Korean province, the local authority needed to build world-class sporting facilities and state-of-the-art social infrastructure in order to deliver the mega sporting event. Given the problem of relative underdevelopment that this province had suffered for the past few decades, this Winter Olympics certainly promoted the improvement of social and economic conditions of the region. However, most construction projects required to accommodate the mega-event were too gigantic, especially in consideration of the limited demands from the local areas (Rick, [2018](#)). Despite this paradoxical situation, the provincial government decided to undertake the regional upscaling programmes.

The Alpensia resort in PyeongChang is a notable example. This venue is comprised of ski-jumping hills, cross-country courses, five-star hotels, and international conference and concert halls (Yoo, [2005](#)). This resort also hosts the Olympic Village in the mountain cluster. Originally planned as part of the PyeongChang's 2010 Olympic bid, the construction of this winter sport and leisure complex commenced in 2004 and completed in 2010 (GS E&C, [2010](#)). Through competitive tendering, three major construction and engineering companies in Korea, namely Dongbu, GS E&C and Taeyoung, won this lucrative project contract (Yoo, [2005](#)). Because it was the time before the Olympics was awarded to the South Korean town, this project was primarily financed by the local authority without subsidies from the central government. The provincial government issued municipal bonds and took out a loan from banks in order to fund this US\$1.4 billion development project (Lee, [2012](#)). On the completion of this mega-development project, the three private construction companies received their final payment in full (GS E&C, [2010](#)). However, as this resort opened almost 9 years prior to the Olympics, very few customers used this world-class facility in a remote mountain village during the pre-event period. The operation of this resort only generated a deficit, and the interest payable was constantly accumulated at the same time (Kim & Ko, [2016](#)). As the local government is solely obliged to pay this large amount of debts and operational cost, the financial health of the province deteriorated. This investment in the leisure industry was surely excessive and unsustainable.

When PyeongChang won the rights to host the Winter Olympics in 2011, the financial circumstance of Gangwon province was somewhat mitigated because the central government started to subsidise 75% of the total expenditure to build sporting facilities and social infrastructure directly related to the organisation of the event. The local government only needed to fund the remaining 25% (Gangwon Province, [2015](#)). For Gangwon, this provision

of additional economic resources was clearly the effect of the Winter Olympic Games. Nevertheless, the construction of the following three sport facilities in this remote rural region was particularly controversial: a new Olympic stadium, bobsled tracks and Alpine ski slopes. In terms of the stadium, this place was built exclusively for the Opening and Closing Ceremonies of the Winter Olympics and Paralympics (Zirin & Boykoff, [2018](#)). Moreover, this large arena was to be dismantled after the event because of an immense upkeep fee. It should be noted that these Olympic ceremonies were originally planned to take place at an existing football pitch attached to the ski jumping hills in the Apensia resort. Yet, in 2015, the Olympic developers decided to build a US\$102 m stadium with 40,000 capacity in order to stage a more spectacular ceremony (Lee, [2019a](#)). Given that the demolition after the Olympics would incur extra cost, the short-term operation of this disposable arena was by no means a sensible decision, especially when an alternative option was available. Despite this, this space only for Olympic rituals was constructed in a small township of PyeongChang. Daelim Industrial, one of the major private engineering companies in Korea, was in charge of the construction and destruction of this venue, and this firm appears to be the only financial beneficiary of this unsustainable venture when the construction fee was paid to their account.

The building of bobsled tracks and Alpine ski slopes also raised controversy. A number of civic groups questioned the sustainability and environmental impact of these two facilities (Kim & Chung, [2018](#)). While it cost more than US\$100 m to install the sliding tracks, it was expected that its use would be minimal, and that the maintenance fee would only enlarge Gangwon's economic deficit (Lee, [2018](#)). In terms of the downhill ski courses, the creation of these slopes required the deforestation in the mountain. Environmental activists were strongly against this plan, claiming that 500 years old trees would be sacrificed for the 2 weeks' competition (Yoon & Wilson, [2019](#)). Due to the economic and ecological unsustainability, the alliance of civic organisations proposed the Games to be held in multiple locations in view of the IOC's Agenda 2020 ² (Lee, [2019a](#)). They suggested the refurbishment of the almost abandoned sledding tracks in Nagano in Japan where the 1998 Winter Olympics took place, and the relocation of the downhill course to elsewhere in Korea where a more sustainable site exists (Kim & Chung, [2018](#)). Despite the availability of these more eco-friendly options, the Olympic organisers determined to adhere to their original plan. They asserted the necessity of opening the only and the first sledding track in Korea and the importance of arranging the ski slopes that meet the international standards within the boundary of the mountain cluster (McCurry & Emma, [2015](#)). In the midst of escalating tensions, the central government intervened, and it eventually approved all construction plans. However, in consideration of the biodiversity in the mountain area, the authority only sanctioned the installation of the skiing facilities on condition that the primeval forest would be restored after the Olympics (Lee, [2019a](#)). This means that temporary ski slopes was to be built for more than US\$143 m excluding the cost for the restoration (Gangwon Province, [2015](#)).

Two major construction firms in Korea, Daelim Industry and Hyundai Developmental Company (HDC), built the bobsled track and the alpine ski slopes respectively. The installation of the expensive Olympic facilities in the remote region was not a prudent investment of public resources which was likely to accrue negative value to the local economy and ecology. Yet, the decision to develop the winter sports venues offered a profitable business opportunity for the two companies. It seems that the public and private sectors shared interests in undertaking these projects: the local government's desire to modernise its primitive area and the large construction corporations' intention to secure financial gains. Particularly, the provincial office allowed HDC to build a spa resort in the

green belt near the ski slopes (Gangwon Province, [2017](#)). The main rationale for this development permit was to provide accommodation for officials and visitors during the Winter Olympics. Because the arrangement of this luxurious holiday park was a privately funded enterprise, HDC would retain the rights to run this place commercially when the Games was over (Kim, [2019](#)). Given that this resort is located in the reserved national part, it is apparent that the company have acquired a valuable property and attractive asset in the pristine area through participating in the Olympic development project. Smith ([2012](#)) and Karamichas ([2013](#)) point out that private developers and business elites grab a chance to accumulate their wealth through mega-event led development despite the fact that huge amount of public funds are spent on such a project. This account of the HDC's spa resort demonstrates a similar pattern.

Gangwon province was also able to improve its transportation networks by hosting the Winter Olympics. The central government renovated an airport in Gangwon and built a new expressway that connects PyeongChang and Gangneung to the metro Seoul area in order to enhance the accessibility to the Olympic venues (Gangwon Province, [2015](#)). Also, the central government installed double-track railways that directly link the Olympic towns to its capital city (Lee, [2019a](#)). Particularly, a high-speed train was operational on these newly laid tracks which halved a travelling time between Gangwon and Seoul. This installation of the railways alone cost US\$3.5 billion which marked the most expensive construction project associated with the Winter Olympics (Tebay, [2017](#)). This public investment certainly boosted the domestic civil-engineering sector and the consortium of large and mid-size development firms joined this venture for 5 years (Bd-editor, [2013](#)). In addition to these, the province could also upgrade road networks within the region. Almost every major local road that leads to the Olympic towns were either resurfaced or newly built by the central government. The local government just needed to pay a fraction of the cost for paving minor roads surrounding the sporting venues (Gangwon Province, [2015](#)). Given this province's comparative underdevelopment in South Korea, such improvement of the transportation networks was one of the most tangible impacts that the Olympic Games facilitated.

The sustainability of the Olympic facilities after the event

A few days after the Winter Olympics, the PyeongChang Organising Committee of the Olympic Games (POCOG) announced that this event would produce financial profits, celebrating an effective delivery of the global sporting tournament (Park S. Y., [2018](#)). According to their figure, the differences between the gain and loss are approximately US\$125 m in surplus (Park S. Y., [2018](#)). However, POCOG's calculation reported almost US\$10bn of public subsidy as a part of its gain which accounts for nearly 80% of the total earning. This projection can mislead the public because, from the viewpoint of the national and provincial economy, the large amount of government assistance is not an income but expenditure. Also, POCOG's estimation only shows a snapshot picture of the financial situation which does not take into account the future operational and maintenance cost of the Olympic facilities. Therefore, their appraisal of the Winter Olympic resource management is somewhat biased towards the Olympic organisers, and as a result, it should not be seen as an objective evaluation.

The post-event use of sport facilities clearly indicates the economic loss that the provincial government has been suffering since the end of the Winter Olympics. The Olympic stadium where the opening and closing ceremonies were performed has now demolished, and this destruction incurred additional expenses to Gangwon. Also, it appears that the ski jumping

hills and sliding tracks in PyeongChang, and the ice-sport complex in Gangnung all became white elephants due to the shortage of visitors to these winter sport venues (Lee, [2019a](#)). For instance, the sledding tracks were hardly used and mostly remained closed after the Winter Olympics. Nevertheless, the maintenance of this facility costs more than US\$1 m annually, and the local government needed to pay this bill. In fact, the provincial office of Gangwon intended to let this venue to a subcontractor who could manage the operation of the sliding centre but, due to the lack of financial viability, no organisation was willing to run this place (DongA Ilbo, [2019](#)). In the end, in February 2019, Gangwon province announced that the Olympic sledding tracks were temporarily closed down until they find a more sustainable option to operate this facility. The future of this venue is still unclear at the time of this writing.

The fate of the ice sport complex in Gangneung is not so dissimilar. Four indoor rinks were newly built, and an existing curling arena was fully refurbished in order to stage the Winter Olympics in this medium-sized city. Keyryong Construction, a major development firm based in Gangwon province, constructed and renovated these venues which cost more than US\$99m (Construction Economy, [2018](#)). However, after the international competitions, the two ice-hockey centres and the two speed skating arenas were rarely used (Park S., [2018](#)). Only the renovated curling stadium is occasionally operated for physical education classes of the local schools. In fact, no ice-hockey match took place in Gangneung until the end of 2018, and the speed skating arenas have now turned to storage space (Lee, [2019](#)). It seems apparent that this ice sport complex was constructed only for the Olympics without a specific plan to manage these world-class facilities in the post-event period. It also implies that no systematic market analysis was undertaken in the preparation stage. In effect, rather than contributing to the redevelopment of Gangneung, the Olympic site is on the verge of turning to another abandoned area in the city.

The operation of the Alpensia resorts proved to be unsustainable also. In terms of the deficiency, this place experienced the most serious financial shortfall amongst newly developed Olympic facilities. The building of this winter sport holiday resort was primarily funded by the local government. Unlike the prospect that the global mega-event would make the Alpensia a more popular location internationally, a number of visitors to this leisure complex have not meaningfully increased after the Olympics. Also, many hotel rooms remained unoccupied throughout the year, and the half of the luxurious villas in the premises are still on sale. The ski jumping hills in the resort, which now functions as an observatory tower, attracts some tourists but its gain is far lower than its loss. In the end, this holiday park suffered from a deficit of US\$11 m in 2018 alone despite being the year of the Winter Olympics (Hwang, [2019](#)). The provincial office is obliged to pay for this loss in addition to making repayment of the bonds and loan which were spent on the construction of this resort. Unable to sustain the heavy financial burden that this leisure industrial complex was continually generating, Gangwon attempted to sell this place to transnational investment companies. Yet, due to its huge debts, it was difficult to find a corporation who is willing to acquire these almost bankrupt premises (Kim & Ko, [2016](#)). In January 2020, a global project management firm based in Hong Kong finally agreed to purchase this sport and tourism complex (Lim, [2020](#)). This acquisition of a public-funded property by a foreign investment company exemplifies yet another neoliberal shift of the region that the local community is experiencing.

As will be further discussed later, the 2024 Winter Youth Olympic Games will be held in this province, and these sport facilities will be reused at this competition (IOC, [2020a](#)). This may

attract more visitors to these places, thereby bringing some income to the region over the next few years. Yet, the long-term sustainability of the venues is still uncertain. Despite this grim financial prospect, the business portfolio of most construction companies that participated in the Olympic development project publicises the profile of the stadiums and facilities they built, exhibiting elaborate engineering skills required to make the world-class winter sports venues. This promotion and reputational gains are yet another benefit these companies enjoy while the local government and community are struggling to repay their debts after the Olympics (Lee, [2018](#)). In fact, the problem of under-used Olympic facilities in the post-event period is well identified by many scholars (Hiller, [2006](#); Horne, [2007](#); Müller, [2015](#); Roullet & Lefebvre, [2010](#)). Because most sporting arenas were installed in a small rural town, the issue of white elephants is more palpably diagnosed in PyeongChang. Despite the financial mismanagement of the public sector, the domestic construction industry seems to benefit from the Olympic development boom.

Environmental sustainability of the Olympic development deserves attention also. In this respect, the Jeongsun Alpine centre is arguably the most contentious Olympic venue at PyeongChang 2018. As noted in the previous section, the ski slopes and associated amenities were to be removed from the mountain, and the woodlands were to be restored after the Winter Olympics (Yoon & Wilson, [2019](#)). However, the local developers sought permission to retain all sport facilities from the central government with the aim of developing local tourism further. The National Forest Service rejected this request and ordered immediate restoration of the mountain as originally agreed. Environmentalist groups also criticised such an unethical position and urged the event organisers to fulfil the duty without delay. In response to this, the local community, now with the support from the provincial government, suggested a plan to create an ecological park next to the ski slopes so that not only the legacy of the Winter Olympics but also the biodiversity of the mountain can be preserved. Again, the national government declined this suggestion and called for a prompt reintroduction of the forest. This discrepancy gradually developed into tensions and disputes between the central and local governments, and between the local developers and environmental activists (Lee, [2019a](#)). Even the local community itself was now divided. The two sides subsequently agreed to form a working group to cross-examine the economic and ecological implications of the two scenarios. Nevertheless, no clear solution for this deadlock could be found by this independent body largely because of the fierce and emotional confrontation between the two parties. Misener and Mason ([2006](#)) note that carefully planned sporting events can enhance trust between community members, and this subsequently helps the accumulation of social capital in host cities. It is beyond the remit of this study to systematically examine the sources of social capital that this Winter Olympic Games engendered. Yet, the tensions surrounding the restoration of the natural habitat in Jeongsun imply that instead of providing a shared regional identity and common goals, this event has only created a fissure in this agricultural community.

Pyeongchang 2018 and Gangwon 2024

So far, I have looked at some of the major construction and development projects that the Winter Olympic Games in PyeongChang initiated and their fate after the event. Preuss ([2015](#)) notes that the most notable legacies of a sport mega-event include the injection of extra public monies to the host region to improve its surrounding areas, and the acceleration of the completion rate of existing development plans. This logic is applicable to the case of the 2018 Winter Olympics. Gangwon had suffered from poor provincial road networks and an ineffective inter-regional transportation system for a long time, but the Winter Olympics

rapidly transformed this situation in less than a decade (Lee, [2019a](#)). The central government largely funded this infrastructural enhancement, and the financial contribution that the provincial office made was relatively minor. Hence, by staging this winter sport mega-event, Gangwon was able to upgrade its transportation infrastructure effectively.

Nevertheless, when considering the construction of sport facilities related to the Olympic Games, several negative consequences can also be identified. Put simply, the majority of newly built Olympic venues are economically and environmentally unsustainable (Lee, [2019a](#)). The Apensia resort exemplifies excessive investment in the development of consumption-oriented leisure industry by the local government. It should be noted that the construction of this luxurious sport and tourism complex embodies the neoliberal transformation of this remote rural area, and that the winter sporting event was a major contributor to this shift. Yet, most service facilities that this resort offers do not fit the local market condition, and subsequently this leisure complex had to rely on non-local and foreign visitors (Hwang, [2019](#)). Subsequently, a sign of territorial segregation between this commercial zone and the surrounding agricultural villages is gradually noticeable. This is evidently the outcome of irresponsible development blinded by a short-term boosterism which paid little attention to geographical and environmental characteristics of the region, thereby primarily serving developer's interest (Duignan & McGillivray, [2019](#); Kennelly, [2016](#); Watt, [2013](#)). Worse still, due to its relatively isolated location, it failed to attract a sufficient number of customers to sustain even its basic operating cost, let alone making a profit (Hwang, [2019](#)). Hence, this global leisure complex in a humble pastoral community is the provincial government's futile attempt to push this agricultural town to leap forward to the post-industrial turn.

As climate change has become a major political agenda globally, the Olympic developers in PyeongChang needed to adopt a sustainable event delivery plan (Kim & Chung, [2018](#)). Indeed, one motto of this competition is an "ecological game". However, as the case of the Alpine centre reveals, it was inevitable to destroy some natural habitats because a significant number of sporting events at this Olympics took place in rural and mountainous settings (Essex & Chalkley, [2004](#); Yoon & Wilson, [2019](#)). In terms of green politics in PyeongChang, it seems that a hegemonic struggle between ecological modernists and environmental conservationists occurred. With respect to the restoration of the forest at the Alpine ski slopes, the Olympic developers intend to keep the convenient facilities and to arrange an ecological park so that this place can attract more tourists to the region whereas environmentalists claim that the complete restoration of the woodlands is mandatory. The animosity between the two sides has been deepening since the conclusion of the sporting event (Lee, [2019a](#)). This unsettled dispute and the subsequent division of the community should be recognised as an unintended legacy of the Winter Olympics.

The management of the Winter Olympic facilities has constantly been contributing to economic deficits, and this negatively affects Gangwon's financial circumstance. Consequently, the provincial office requested the central government to pay 75% of the total operational and maintenance fees as it had subsidised the construction of the Olympic stadiums and arenas (Gangwon Province, [2015](#)). The national authority rejected this demand, arguing that Gangwon was solely liable to handle the local economic situation. In order to mitigate this fiscal problem, PyeongChang attempted to host the 2021 Winter Asian Games with the expectation that this continental event would enable the local government to mobilise additional economic resources from both private and public sectors (Gangwon Province, [2018](#)). According to its Asian Games plan submitted to the Ministry of Culture,

Sport and Tourism of Korea, 46% of the total budget was to be financed from a business sector, and the local and central governments would respectively pay 27% of the gross cost (Park J., [2018](#)). By inviting North Korea as a co-host, PyeongChang also justified their intention to stage this Asian Games as a way to prolong the legacies of the 2018 Winter Olympics where the two Koreas made a dramatic sporting union (Lee, [2019b](#)). Yet, the central government rejected this plan because the Winter Asian Games was a low-profile event, whose expected income is a relatively minor scale (Park J., [2018](#)). Therefore, the central government advised the local authority not to join the bid lest the economic condition of the province further deteriorate. Such post-event discord subsequently raised tensions between the central and local government. In effect, the Winter Olympics gave rise to subtle tensions in domestic politics also.

Nevertheless, Gangwon's desire to host another winter sporting event never faded away. Gangwon joined the bids for the 2024 Youth Winter Olympic Games, and in January 2020, the IOC finally announced that this event would be held in this South Korean province. Both the international sport governing body and the local government in Korea unanimously celebrated this decision, acclaiming that the legacy of the 2018 PyeongChang Winter Olympics would be sustained in Gangwon (IOC, [2020b](#); Yonhap, [2020](#)). The event stakeholders also praise this news which makes Gangwon the first Asian region to host the Winter Youth Olympics. To some extent, hosting this international event is Gangwon's desperate attempt to secure funding for maintaining and revitalising much-underused winter sport facilities in its municipality. The staging of this youth sporting competition is by no means inherently problematic. However, there is a danger that the delivery of this event can whitewash the negative consequences of the Winter Olympics taken place in the same location two years ago. This decision may help Gangwon province reopen the insolvent sporting venues such as the bobsled tracks and the indoor ice rinks. Yet, the celebration and promotion of Gangwon 2024 may conceal the problem of excessive development of Olympic facilities taken place before PyeongChang 2018. Similarly, this youth event is likely to uphold the interests of the local developers, especially concerning the retainment of the Alpine ski centre as this site will be reused for the 2024 Youth Winter Olympics. The restoration of the woodlands, which is the original condition of the installation of this Olympic facility, is gradually becoming an unlikely scenario at least in the foreseeable future. Without critical reflection on its experience of hosting the 2018 Winter Olympics, Gangwon province appears to commence an additional development project which can only offer a temporal remedy for the Winter Olympic hangover at best.

At this point, it would be useful to consider the stakeholder who gained most from this event-led development in PyeongChang. I argue that they are the construction companies who built the sport facilities and social infrastructure in Gangwon. While there were several subcontractors, there were six major corporations in South Korea which mainly involved in the Olympic development projects (Construction Economy, [2018](#)). Because most construction were large enterprises such as building a stadium and laying major railway tracks, these firms could enjoy a huge surplus through these operations. Even the demolition of the Olympic stadium was a profitable venture for them. Their stock market values increased when they won these lucrative contracts, and these firms were also able to undertake a range of public relations campaigns, highlighting their positive contributions to the delivery of the Winter Olympics as a "patriotic" project (Keyryong, [2018](#)). As their responsibility lies in the completion of the construction in time, the deficit and debts that the management of the facilities incurs are not their concern. Once they received the final payments, the companies simply left the scene with both financial and reputational gains.

Therefore, while the Winter Olympics was essentially a mega sporting event, a true winner of this competition seems to be the developmental firms. These corporations are indeed major players in the Olympic industry. After all, There exists only a thin line between this Olympic Games and a mega construction project.

Conclusion

In this paper, I have examined the construction projects associated with the Winter Olympics and their economic and environmental impact. Golubchikov (2017) notes that the element of regional development can be a more important agenda than sporting excellence when hosting a sport mega-event. The case of the Olympic Winter Games demonstrates a similar characteristic. While Gangwon province benefits from the much-improved transportation infrastructure that PyeongChang 2018 facilitated to revamp, it is evident that the construction of a series of world-class Olympic venues in the rural town was largely unsustainable. The local government is now carrying heavy economic burdens and it is fundamentally the taxpayer's money to be mobilised to cover the costs. Also, the regional development related to the 2018 Winter Olympics caused the tensions between the central and local governments and divided the local community. In effect, under the glossy surface of the five-ring circus, the problem of financial mismanagement, environmental degradation, and community separation can be observed. Coates and Wicker (2015) state that the Winter Olympic Games tends to leave more negative legacies than its summer counterpart. The account of PyeongChang 2018 clearly supports this claim.

To sum up, the main discoveries of this article include (1) the most development and construction projects associated with the PyeongChang Winter Olympics are too large and too expensive to sustain in the post-event setting; (2) the creation of neoliberalist leisure industry in PyeongChang was at odds with the surrounding local communities; (3) different interest groups clash amid a series of irresponsible Olympic development projects; and (4) within these problematic circumstances the construction firms enjoyed huge financial and reputational gains. However, as this study relied primarily on secondary sources, the synthesis and representation of the existing publications may not be completely objective but may reflect the author's subjective view. Also, actual interviews with policymakers, Olympic stakeholders, and local residents would have made this account much more authentic and trustworthy. Despite these shortcomings, this informative and critical review can be a useful addition to the academic literature on a sport mega-event held in a rural region.

As the economic and ecological problems caused by the Olympic development are still on-going, further research based on original empirical data needs to be done in order to measure the sustainable legacies of this Olympics more clearly. Additionally, with the 2024 Winter Youth Olympics Games being awarded to Gangwon, it is necessary to observe carefully how this event will unfold in terms of the sustainability of the existing winter sports facilities. Finally, it is paramount importance that the local government and the event organisers must meticulously plan Gangwon 2024 in consideration of the regional condition in order not to repeat the financial fiasco of PyeongChang 2018.

Notes

1 The 1999 Winter Asian Games was by no means a major sporting event. This competition only included skating and skiing events with the exception of jumping contests. No new sporting facilities needed to be built. Therefore, its development impact was minimal.

2 This policy recommendation allows more than two places to host the Olympic Games in order to minimise harmful environmental impacts and cost. In fact, as Macaloon (2016) notes, one of the reasons that this policy has been implemented is to make the Winter Olympics more sustainable. Hence, those civic groups request for co-hosting was reasonable and legitimate.

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