The mega-events database: systematizing the evidence on mega-event outcomes

Martin Müller*, Sven Daniel Wolfe, David Gogishvili, Christopher Gaffney, Miriam Hug, Annick Leick

*Department of Geography and Sustainability

University of Lausanne

1015 Lausanne | SWITZERLAND

martin@martin-muller.net

www.martin-muller.net

Author contributions: MM conceived the database and developed the core argument of the paper. MM and SDW wrote the manuscript. MM, SDW, CG, DG, MH, AL developed and populated the database.

Abstract

Although events such as the Olympic Games and World's Fairs are among the largest of mega-projects, there is little systematic data to evaluate their outcomes over a longer period of time and across multiple sites. This research note describes the first longitudinal database on mega-event outcomes. It lays out the rationale and major goals of the database, its methodological approach and content, and its challenges and limitations. The database allows analysing larger patterns of mega-event contexts and outcomes, and helps evaluating mega-events as public policies.

Introduction

Mega-events such as the Olympic Games, the Football World Cup and the Expo are among the costliest and most transformative human projects. The expenditure for these events and ancillary infrastructure now regularly exceeds USD 10 billion (Flyvbjerg, Budzier, and Lunn 2020). Streets, neighbourhoods, sometimes entire cities are transformed in the run-up to such an event (Duignan and McGillivray 2019; Gaffney 2010; Gold and Gold 2011; Hiller 2006; Poynter, Viehoff, and Li 2015). Cities and countries are in 'Olympic mode' or 'World Cup mode', for several years before the event, renovating airports and stadiums, building athlete housing and new metro lines, running preparatory events and rehearsing for those few weeks when the eyes of the world turn to them in anticipation. World Expos differ from the Olympics and the World Cup in that they last for many months rather than a few weeks and, notably, are not centred around sport, yet they share many features in common: All of these events are attractive to cities, regions, and countries as part of their policies for urban and regional development and global image-making, and bidding for and hosting such large events has become known as the 'mega-event strategy' (Burbank, Andranovich, and Heying 2001; 2002; Kassens-Noor 2019; Roche 1994).

Yet, there is little coherent, long-term evidence on the inputs and outcomes of mega-events. As a consequence, decision-makers bid for and host mega-events on anecdotal evidence, often compiled by event owners such as the IOC and FIFA or consultancies, both of which have a stake in the outcome (Chappelet 2019; Jennings 2012). Comprehensive cost-benefit assessments are rare (Késenne 2005) and often impeded by a lack of available and comparable evidence across space and time. This situation leads to poor and misguided decision-making (Müller 2015). It risks elite capture of mega-events and opens the door for lobbyists and action groups to sway public opinion for or against mega-events by peddling anecdotal claims from selected events.

This research note introduces a new research instrument to address the dearth of systematic data on mega-events and produce better public policy outcomes: a mega-event database with systematic information on, so far, the Olympic Games, the Men's Football World Cup and the Expos from 1960 to 2020, running to a total of 53 events. The database contains 116 indicators for each of these events, spread across ten categories, ranging from size to finance and from infrastructure to governance. We present the goals and rationales, methodology and content of the database in this research note. Fellow researchers are

invited to both contribute to the database and to make use of it for their own research in order to ameliorate the evidence base for sound public decision-making.

Longitudinal evidence on mega-event outcomes: state-of the-art

Several factors combine to make current evidence on mega-events inputs and outcomes scarce and erratic. The first factor is the itinerant nature of mega-events. As host countries and cities change with every event, the extent and scope of data collected varies according to host priorities and data collection systems in place. As hosting a mega-event is a one-off occasion for each host, there is little direct incentive to collect data to improve future decision-making. Whatever information is collected often faces a language barrier in its utilisation by the next host. For the Summer Olympic Games, for example, the host language has changed from English (London 2012), to Portuguese (Rio 2016), to Japanese (Tokyo 2020), to French (Paris 2024) to only then return to English (LA 2028).

The second factor is event owners' limited interest in systematic data collection and publication. Event owners such as the International Olympic Committee (IOC) in Lausanne, the Fédération Internationale de Football Association (FIFA) in Zürich and the Bureau International des Expositions (BIE, the owner of the Expo) in Paris usually maintain archives, but they collect limited comparable data across events. To the extent where such data are published, these are often limited to a few financial indicators (as in the IOC Marketing Reports), or focused only on a specific aspect (as in López-César 2019, a BIE report on architectural forms at the Expos). Furthermore, their presentation is subject to a conflict of interest, since these organisations have a strong incentive to highlight the positive and ignore the negative outcomes in order to curry favourable media coverage and keep cities and countries interested in bidding.

The third and final factor is an absence of shared metrics and indicators. While shared metrics and methods of assessment for many public policies exist, this is not the case for exceptional interventions such as mega-events. The IOC's attempt to introduce coherent data collection with the Olympic Games Impact (OGI) study, started in the early 2000s (Leonardsen 2007), was completed only for the Winter Games in Vancouver in 2010 and abandoned in 2017. This situation is compounded by the active destruction and concealing of records. Host cities and countries, much like athletes, are under pressure to perform well, given the dreams and promises that ride on mega-events. It is not uncommon for critical information not to be collected, not to be reported or not to be accessible to the

public. The organizers of the Nagano 1998 Olympics even deliberately destroyed part of the financial records to avoid criticism (Baade and Matheson 2016).

Together, these factors have impaired academic efforts of compiling evidence of mega-event outcomes and evaluating mega-events. This is despite the strong insistence on the long-term positive effects, often named 'legacies' (although this term is controversial, see Talbot 2019), much beyond the duration of the events themselves. In an extensive review of existing studies on legacy, Scheu et al. (2019, 1) note that 'there is a dominance of commentary articles and a lack of adequate empirical research.' Much research is biased or has methodological flaws, as Chappelet (2018, 11) notes: 'Above all, [studies] are most often ex ante assessments (before the event), i.e. based on figures that are often too optimistic or even unrealistic, not to mention any mistakes in the methodology, whether inadvertent or deliberate'.

Thus, few independent, comparative and longitudinal studies of mega-events exist. Those that do have a strong focus on a limited number of often economic indicators, such as cost (Flyvbjerg, Budzier, and Lunn 2020), trade (Rose and Spiegel 2011), GDP (Tien, Lo, and Lin 2011) and tourist arrivals (Fourie and Santana-Gallego 2011; Weed 2008), or are restricted to the few indicators often published by event owners (Chappelet 2014). As a consequence, where comparisons between multiple events are drawn, these are often limited to a few events, often close in time (Hiller and Wanner 2016; Kaplanidou 2012; Maharaj 2015; Müller and Gaffney 2018), or follow an idiographic logic with a focus on urban change through mega-events (Chalkley and Essex 1999; Essex and Chalkley 1998; Gold and Gold 2008). Most systematic comparative studies on mega-events, by contrast, are limited to single or few events, given the constraints in data availability mentioned above (see Table 4 in Baade and Matheson 2016 for a good overview).

The problematic consequence of this dearth of systematic data is the reliance on anecdotal evidence: certain outcomes of particular events are taken to be true for many, or even all, events. The Barcelona 1992 Olympics have long served as the poster child for the positive transformative potential of the Olympic Games, despite the specificity of the Barcelona case (García-Ramon and Albet 2000). The Sochi 2014 and Rio 2016 Olympics and the World Cups of 2014 in Brazil and 2018 in Russia, by contrast, have become classic references for the wasteful juggernaut of mega-events *tout court*, although their urban and political-economic contexts likely make them extreme cases (as shown by Müller et al. 2021; see also Gaffney 2010; Wolfe and Müller 2018). If these favourite examples in

debates on mega-events are indeed extreme cases, drawing conclusions and making decisions based on their outcomes will introduce significant positive or negative bias.

This predominance of anecdotal evidence has led to polarized, emotional debates between opponents and supporters of mega-events, each citing the evidence that suits them best. Event owners and hosts will tout positive outcomes and sceptical citizens' social movements will flag negative ones. Thus, the current decline in interest to bid for mega-events and the recent success of public referenda against mega-events is driven by media reporting, strong emotions and the recent memories of negative outcomes associated with Sochi 2014 and Rio 2016 (Coates and Wicker 2015; Hiller 2020; Kurscheidt and Prüschenk 2020). If and when more positive examples of hosting emerge, these might swing public opinion in the opposite direction. As a consequence, decision-makers and citizens risk bidding (or not) for multi-billion-dollar projects based on gut feelings and public moods, without having a clear idea of the costs and benefits and without coherent knowledge of previous outcomes.

Academics currently lack systematic independent evidence to adjudicate in these emotional debates and situate the outcomes of certain mega-events in relation to the larger population of mega-events. The database we have compiled and we present in the following is one step towards rectifying that situation.

The mega-event database: research design

Aims and features

The aim of the database is to identify and systematize the outcomes of different mega-events over time. This allows for meaningful comparisons and for the identification of patterns and trends, thereby facilitating the investigation of possible explanations for the presence or absence, magnitude, and nature of a variety of outcomes. To fulfil these aims, the database was designed with the features shown in Table 1.

Table 1: Features of the mega-event database

Feature	Explanation	Implementation
Transversal	including different types of mega-events	Currently: coverage of Summer and Winter Olympics, Men's Football World Cups and Expos
Longitudinal	enabling comparisons across time	Starting in 1960 (N=53)
Comprehensive	measuring a broad spectrum of outcomes	116 variables in 10 categories for each event
Systematic	having the same definition of variables across events	Variable book with standardized variable definitions
Mixed	containing quantitative and qualitative indicators	Inclusion of numeric and text variables
Reliable	reflexive about bias and robustness	Separate evaluation of reliability and bias of sources
Feasible	able to populate the database	Choice of variables with a minimum level of data availability

The database currently includes the top-tier of mega-events (Roche 2000): the Summer and Winter Olympic Games, the Men's Football World Cup and the World's Fairs (Expos). For now, the database contains events from 1960 to 2018 with a total of 53 editions: 15 Summer Olympic Games, 16 Winter Olympic Games, 15 FIFA Men's Football World Cups, and 7 World Expos. It should be noted that data was not collected for smaller, regional events such as the Pan American Games, European Games, Commonwealth Games, and the like. These events can have significant impacts, and are important to study, as the often are used as trial events for coalitions to position themselves in bids for top-tier events. While these events were determined to be outside the current project scope, the systematic design of the database allows us to continue collecting data as more editions take place, as well as to expand the database to include other events beyond these initial four.

Variables

As our aim was to identify patterns and trends across mega-event impact, we began with a literature review to determine which variables to collect. Choosing from the most commonly investigated impacts, as well as those we determined most important, we defined 10 overall categories: size, cost, venue impact, infrastructure impact, urban impact, economic impact, social impact, image impact, environmental impact, governance and complexity. We then refined the broad themes into specific variables for collection, bearing in mind that the differences between sporting and non-sporting mega-events (Olympics and the World Cup versus the Expo) would necessitate different variables, due to the presence or absence of athletes and competition venues. Within these 10 categories, we defined 116 quantitative and qualitative variables that addressed the overall goal of shedding light on particular aspects of a given mega-event, as well as being feasible for data collection. The variable book is available at the Harvard Dataverse [attached for reviewing; reference to be added at proof stage].

Initial exploratory data collection revealed that certain variables benefited from a multiplicity of perspectives, particularly when different sources provided contradictory or confusing results. For example, even among quantitative variables such as the operating costs of the mega-event organizing committee, we found different totals from the organizing committee's final report, the host government, media sources, third party organizations, and academics. To account for this diversity, we expanded the operational costs variable with sub-variables that covered all these potential sources. We added similar sub-variables for many other variables as well.

To monitor and standardize this growing list, we organized and defined variables in a variable book. For each variable in the variable book, we defined the number, name, category, units, scale (metric, binary, string), and added a detailed description of what we were looking to collect. This variable book served as the foundation for data on each mega-event collected in the database and ensured standardized, systematic data collection. At this point, we appointed a database manager to oversee changes in the database, guarantee coherent data entry and documentation and conduct regular backups.

Data collection

We then identified different sources in order to extract the relevant information: official documents (such as the candidature files or bid books, final reports, government

documents, minutes of meetings and so on), third party reports (for example from NGOs, consultancies, non-profit organizations), media articles in relevant languages, and the academic literature. Initial data collection was undertaken by the co-authors of this research note. Next to a comprehensive online search, we conducted research in the archives of the IOC, FIFA and BIE. Skills in multiple languages were an essential requirement for this research, as documents were often held in the official language of the host country. The authors themselves were able to collect and analyze documents in the official languages of the events in our database – English, French and German – and additionally in Spanish, Portuguese, Italian and Russian.

Once the feasibility of the database was established in a pilot phase, data collection was expanded by hiring external contractors. All contractors were academics, and a large majority of them had done previous work on the specific mega-event we commissioned them to work on. These contractors were able to visit archives *in situ* that were located on other continents and were skilled in the languages that exceeded the capacities of our research group, for instance for mega-events hosted in Japan, China, and Korea. The database manager presented each contractor with a detailed brief consisting of the variable book and instructions for research and collection strategies, including the requirement to produce original documents or scans for the source of each data point.

Data collection proceeded over the course of three years, from 2018 to 2020. All data were tabulated in an Excel spreadsheet, while sources were documented in the Zotero reference manager, and backed up on network storage according to a standardized nomenclature. Database managers verified the materials as they were entered into the database, so as to ensure data reliability. In order to guarantee the robustness of the database and maximize later ease of use, the database manager instituted a standardized process of quality assurance that involved a transparent verification of each completed variable, citation, and associated saved documents.

Challenges and limitations

While data collection produced more data than we had expected at the beginning, we also faced significant challenges. Regardless of mega-event, some variables proved easier to collect than others, while certain editions of some mega-events were better documented than others. In sum, data availability defined the limits of this project, and it often required significant effort to locate information for a single missing variable. We faced a further challenge in comparing data between different types of mega-events. Whereas the

Olympic Games and the Expo are hosted in one city (or sometimes a small cluster of nearby cities, under the name of the main city), the World Cups are always held in multiple cities throughout the host nation. This means that the impacts of the event will differ from one city to another. As it was not possible to collect granular data for all World Cup host cities, we decided to use aggregated country-level data instead. This did not make a difference for many variables, such as total visitors or broadcast revenue, but the situation grew murkier when accounting for interventions in the urban landscape of the host cities, which might differ greatly from one city to the next. In order to acknowledge these and similar problems, we included space in every variable entry for notes. These entries allow context and nuance throughout the database, while still enabling effective comparisons.

Since the database is predicated on the organization of existing materials, we were dependent on the availability and quality of appropriate sources. Predictably, it was harder to find material for the older cases, despite many helpful scans from online collections. In some cases, not all variables were equally relevant over time. Revenue from sponsorship, for example, did not emerge as a meaningful source of income until the 1970s. This is because Avery Brundage, IOC president from 1952 to 1972, had vigorously defended the Olympic Games against what he perceived as the danger of commercialization through television and sponsoring contracts. His successor, Lord Killanin, by contrast, had much fewer qualms (Barney, Wenn, and Martyn 2002).

In contrast, it was less challenging to find material from newer mega-events, though these tended to offer fewer concrete data - particularly in regards to financial matters. Replete with glossy photographs and glowing commentary, these more recent official reports seemed more like public relations efforts than a transparent accounting. Further, we noted major differences between the documentation and transparency policies of the IOC and FIFA. Even though mega-event organization overall tends towards a lack of transparency, the Olympic Games are better documented than the World Cups. Overall, the IOC grants easier access to a wider variety of relevant organizational documents, while FIFA maintains more protection around many materials important for researchers and has a less voluminous archive in general. Aside from this, there is markedly less material regarding the Expos, possibly due to their relative lack of popularity in recent decades, particularly in comparison to the spectacle of mass sporting events.

In several instances, data on a particular variable diverged across different sources. Where this was the case, we documented all differing data points and annotated them in the notes

section, assessing their reliability and the reasons for their divergence. When drawing comparisons across variables with diverging data points, we made sure to use either the same source or the most reliable source.

Potential use of the database and an invitation

The mega-events database allows analysing the development and outcomes of mega-events across a broad range of themes in a systematic fashion. As such, it has two principal uses. The first is to further our understanding of mega-events over time and across event types, by drawing comparisons and charting their longitudinal evolution. This use, for example, is demonstrated in our tracing of the different dimensions of the growth of mega-events since the 1960s [reference withheld for reviewing]. It also allows situating individual events within their larger population to gauge the degree to which these are extreme cases or typical cases.

The second use is to assess the performance of mega-events as public policies. A range of stakeholders concerned with mega-events – policy-makers, event owners, prospective host cities and countries, the media, citizens – can benefit from the database to make informed decisions about bidding and hosting. This allows, for example, checking the often-overblown promises of mega-event supporters against the historical evidence. It also offers the possibility to construct models to measure the sustainability and performance of mega-events over time [reference withheld for reviewing] and benchmark upcoming mega-events against the population. The current size of the population allows performing inductive statistical tests with adequate power to uncover large statistical effects.

Parts of the database are available Open Access on the Harvard Dataverse repository, as datasets underpinning published papers. Beyond this, we currently envision two potential avenues for collaboration: first, as this is a living project, we seek researchers who might contribute to the growth of the database as further events occur over the coming years. Along these lines, we are also planning to expand the database to cover other mega-events (e.g. regional Games) and to include more variables such as on human rights, gender and diversity, and governance. Second, access to and co-publishing with the complete database is possible on the basis of a contributor agreement that regulates access, ownership, and authorship on the basis of individual contributions. In all cases, we invite other researchers who would like to use the database or contribute to it to contact us.

References

Baade, Robert A., and Victor A. Matheson. 2016. "Going for the Gold: The Economics of the Olympics." *Journal of Economic Perspectives* 30 (2): 201–18. https://doi.org/10.1257/jep.30.2.201.

Barney, Robert Knight, Stephen R. Wenn, and Scott G. Martyn. 2002. *Selling the Five Rings: The International Olympic Committee and the Rise of Olympic Commercialism*. Salt Lake City: University of Utah Press.

Burbank, Matthew, Greg Andranovich, and Charles H. Heying. 2002. "Mega-Events, Urban Development and Public Policy." *The Review of Policy Research* 19: 179–202.

Burbank, Matthew, Gregory Andranovich, and Charles H. Heying. 2001. *Olympic Dreams: The Impact of Mega-Events on Local Politics*. Boulder: Lynne Rienner.

Chalkley, Brian, and Stephen Essex. 1999. "Urban Development through Hosting International Events: A History of the Olympic Games." *Planning Perspectives* 14 (4): 369–94. https://doi.org/10.1080/026654399364184.

Chappelet, Jean-Loup. 2014. "Managing the Size of the Olympic Games." *Sport in Society* 17 (5): 581–92. https://doi.org/10.1080/17430437.2013.834621.

———. 2018. "Challenges and Opportunities for Past and Future Olympic Cities." *Working Paper IDHEAP* 6: 1–31.

———. 2019. "Beyond Legacy: Assessing Olympic Games Performance." *Journal of Global Sport Management*, February. https://www.tandfonline.com/doi/abs/10.1080/24704067.2018.1537681.

Coates, Dennis, and Pamela Wicker. 2015. "Why Were Voters Against the 2022 Munich Winter Olympics in a Referendum?" *International Journal of Sport Finance* 10 (3): 267–83.

Duignan, M. B., and D. McGillivray. 2019. "Disorganised Host Community Touristic-Event Spaces: Revealing Rio's Fault Lines at the 2016 Olympic Games." *Leisure Studies* 38 (5): 692–711. https://doi.org/10.1080/02614367.2019.1633679.

Essex, Stephen, and Brian Chalkley. 1998. "Olympic Games: Catalyst of Urban Change." *Leisure Studies* 17 (3): 187–206. https://doi.org/10.1080/026143698375123.

Flyvbjerg, Bent, Alexander Budzier, and Daniel Lunn. 2020. "Regression to the Tail: Why the Olympics Blow Up." *Environment and Planning A: Economy and Space*, September, 0308518X20958724. https://doi.org/10.1177/0308518X20958724.

Fourie, Johan, and María Santana-Gallego. 2011. "The Impact of Mega-Sport Events on Tourist Arrivals." *Tourism Management* 32 (6): 1364–70. https://doi.org/10.1016/j.tourman.2011.01.011.

Gaffney, Christopher. 2010. "Mega-Events and Socio-Spatial Dynamics in Rio de Janeiro, 1919-2016." *Journal of Latin American Geography* 9 (1): 7–29. https://doi.org/10.1353/lag.0.0068.

García-Ramon, Maria-Dolors, and Abel Albet. 2000. "Pre-Olympic and Post-Olympic Barcelona, a 'Model' for Urban Regeneration Today?" *Environment and Planning A: Economy and Space* 32 (8): 1331–34. https://doi.org/10.1068/a3331.

Gold, John R., and Margaret M. Gold. 2008. "Olympic Cities: Regeneration, City Rebranding and Changing Urban Agendas." *Geography Compass* 2 (1): 300–318. https://doi.org/10.1111/j.1749-8198.2007.00080.x.

———. 2011. *Olympic Cities: City Agendas, Planning, and the World's Games*. Second. London: Routledge.

Hiller, Harry. 2006. "Post-Event Outcomes and the Post-Modern Turn: The Olympics and Urban Transformations." *European Sport Management Quarterly* 6 (4): 317–32. https://doi.org/10.1080/16184740601154458.

Hiller, Harry H. 2020. "The Calgary 2026 Olympic Bid Plebiscite as Affective Urbanism." *Journal of Sport and Social Issues*, October. https://doi.org/10.1177/0193723520964971.

Hiller, Harry, and Richard A. Wanner. 2016. "Public Opinion in Olympic Cities: From Bidding to Retrospection." *Urban Affairs Review*, December, 1078087416684036. https://doi.org/10.1177/1078087416684036.

Jennings, Will. 2012. *Olympic Risks*. Basingstoke: Palgrave Macmillan.

Kaplanidou, Kyriaki (Kiki). 2012. "The Importance of Legacy Outcomes for Olympic Games Four Summer Host Cities Residents' Quality of Life: 1996–2008." *European Sport Management Quarterly* 12 (4): 397–433. https://doi.org/10.1080/16184742.2012.693118.

Kassens-Noor, Eva. 2019. "Transportation Planning and Policy in the Pursuit of
Mega-Events: Boston's 2024 Olympic Bid." *Transport Policy* 74 (February):
239–45. https://doi.org/10.1016/j.tranpol.2018.12.005.

Késenne, Stefan. 2005. "Do We Need an Economic Impact Study or a Cost-Benefit
Analysis of a Sports Event?" *European Sport Management Quarterly* 5 (2):
133–42. https://doi.org/10.1080/16184740500188789.

Kurscheidt, Markus, and Nathalie Prüschenk. 2020. "Attitudes toward Olympic
Gigantism: Evidence from Germany." *German Journal of Exercise and Sport
Research* 50 (2): 208–17. https://doi.org/10.1007/s12662-019-00642-w.

Leonardsen, Dag. 2007. "Planning of Mega Events: Experiences and Lessons."
Planning Theory & Practice 8 (1): 11–30.
https://doi.org/10.1080/14649350601158105.

López-César, Isaac. 2019. "World Expos and Architectonic Structures. An Intimate
Relationship." *Bureau International Des Expositions*, February.
https://www.bie-paris.org/site/en/focus/entry/world-expos-and-architectonic-
structures-an-intimate-relationship.

Maharaj, Brij. 2015. "The Turn of the South? Social and Economic Impacts of Mega-
Events in India, Brazil and South Africa." *Local Economy* 30 (8): 983–99.
https://doi.org/10.1177/0269094215604318.

Müller, Martin. 2015. "The Mega-Event Syndrome: Why so Much Goes Wrong in
Mega-Event Planning and What to Do about It." *Journal of the American
Planning Association* 81 (1): 6–17.
https://doi.org/10.1080/01944363.2015.1038292.

Müller, Martin, and Christopher Gaffney. 2018. "Comparing the Urban Impacts of
the FIFA World Cup and Olympic Games From 2010 to 2016." *Journal of
Sport and Social Issues* 42 (4): 247–69.
https://doi.org/10.1177/0193723518771830.

Müller, Martin, Sven Daniel Wolfe, Christopher Gaffney, David Gogishvili, Miriam
Hug, and Annick Leick. 2021. "An Evaluation of the Sustainability of the
Olympic Games." *Nature Sustainability* 4 (4): 340–48.
https://doi.org/10.1038/s41893-021-00696-5.

Poynter, Gavin, Valerie Viehoff, and Yang Li, eds. 2015. *The London Olympics and
Urban Development: The Mega-Event City*. Routledge.

Roche, Maurice. 1994. "Mega-Events and Urban Policy." *Annals of Tourism Research* 21 (1): 1–19. https://doi.org/10.1016/0160-7383(94)90002-7.

———. 2000. *Mega-Events and Modernity*. London: Routledge.

Rose, Andrew K., and Mark M. Spiegel. 2011. "The Olympic Effect." *The Economic Journal* 121 (553): 652–77. https://doi.org/10.1111/j.1468-0297.2010.02407.x.

Scheu, Anja, Holger Preuß, and Thomas Könecke. 2019. "The Legacy of the Olympic Games: A Review." *Journal of Global Sport Management* 0 (0): 1–22. https://doi.org/10.1080/24704067.2019.1566757.

Talbot, Adam. 2019. "Talking about the 'Rotten Fruits' of Rio 2016: Framing Mega-Event Legacies." *International Review for the Sociology of Sport*, October, 1012690219878842. https://doi.org/10.1177/1012690219878842.

Tien, Chengli, Huai-Chun Lo, and Hsiou-Wei Lin. 2011. "The Economic Benefits of Mega Events: A Myth or a Reality? A Longitudinal Study on the Olympic Games." *Journal of Sport Management* 25 (1): 11–23. https://doi.org/10.1123/jsm.25.1.11.

Weed, Mike. 2008. *Olympic Tourism*. Oxford: Butterworth-Heinemann.

Wolfe, Sven Daniel, and Martin Müller. 2018. "Crisis Neopatrimonialism: Russia's New Political Economy and the 2018 World Cup." *Problems of Post-Communism* 65 (2): 101–14. https://doi.org/10.1080/10758216.2018.1429934.