Public-Private Partnerships: administrative modernization and economic relationships immersed in conflicts of interest and corruption

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The 2014 FIFA World Cup in Brazil gathered approximately BRL 24 billion in investment to build and improve airports, sports arenas, ports, and urban mobility through public-private partnerships. This study analyzes these partnerships and discusses potential conflicts of interest and corruption driven by networking. From the structural sociology of relationships, we built a graphical representation of the investment network and the centrality, proximity, and intermediate positions of 446 actors involved in this sporting event. The results show that, in public-private partnerships, the state takes on different roles in public services coordination. The study found that INFRAERO is the most powerful state agency in the network of investments examined, followed by BNDES and CEF bank. In addition, the research identified seven private companies involved in the well-known corruption case Operation Car Wash. This study contributes to the literature by highlighting the composition of the investment network formed around the 2014 FIFA World Cup, enabling society and governments to consider public-private partnerships in the context of ethics, conflicts of interest, and corruption that may emerge from these relationships.

Keywords: public-private partnerships; new public management; corruption.

Parcerias Público-Privadas: modernização administrativa e relacionamentos econômicos imersos em conflitos de interesse e corrupção

A Copa do Mundo de 2014 reuniu investimentos de aproximadamente 24 bilhões de reais para a construção ou adequação de aeroportos, arenas esportivas, portos e mobilidade urbana no Brasil por meio de parcerias público-privadas. O artigo objetiva analisar as parcerias entre o Estado e a iniciativa privada nos investimentos para a Copa de 2014 e discutir os conflitos de interesse e corrupção impulsionados pela formação de redes. Com base na sociologia estrutural dos relacionamentos, construímos uma representação gráfica da rede de investimentos e as posições de centralidade, proximidade e intermediação de 446 atores envolvidos nesse evento esportivo. Os resultados mostram que, nesse arranjo organizacional, os entes públicos assumem diferentes papéis na organização dos serviços públicos licitados – a Infraero é o ator público mais poderoso na rede, seguida por outras organizações de destaque, como BNDES e CEF. Além disso, a pesquisa identificou 7 empresas privadas envolvidas na operação Lava-Jato. A pesquisa contribui para evidenciar a composição da rede de investimentos e possibilitar que a sociedade e os governos considerem as parcerias público-privadas no contexto de ética, conflitos de interesse e corrupção que podem emergir desses relacionamentos.

Palavras-chave: parcerias público-privadas; nova gestão pública; corrupção.

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**1. INTRODUCTION**

Modern economic relationships are supported by neoliberal assumptions that sustain administrative reforms in governments and involve a governance system with interdependence between actors (Gruening, 2001; Skelcher, 2005; Velotti, Botti & Vesci, 2012). Organizational arrangements between public and private organizations can be justified by the need for investments in view of the state budget limitations for maintaining public services.

In this context, public-private partnerships presuppose the sharing of risks and resources (Greve, 2015) through contractually regulated partnerships. In Brazil, these contracts are governed by Laws 8,987/1995 (1995) and 11,079/2004 (2004) and were instituted as part of an agenda for modernizing the State and reforming public administration (Abrucio, 2007; Costa, 2008a; Paiva, 2009; Secchi, 2009). One of the main motivations for Brazilian management reform was to obtain efficiency from the State and fight corruption (Bresser-Pereira, 2000, 2008). Interestingly, in Brazil, public-private partnerships (PPPs) “advance more quickly in places with a moderate level of corruption” (Thamer & Lazzarini, 2015, p. 819).

Recently, PPPs have become quite evident when world sporting events are held in Brazil, such as the Pan American Games, the Soccer World Cup and the Olympics, which have increased academic research seeking to understand its economic and political impacts (Tavares, 2011). Economic impacts and legacies of the World Cup were paid special attention to in the research by Cabral, Cabral and Silva, (2016); Castro et al. (2015); Costa and Miragaya (2008); Domingues, Betarelli and Magalhães (2010); and Sousa (2011). Reis and Cabral (2017) investigated the contractual variations of PPPs for the construction of sports arenas in the World Cup; César, Mazzei, Rocco, Oliveira and Melloni (2013) investigated the sustainability of PPP projects for the construction of stadiums and arenas; Aguiar, Meireles, Macfaden and Prado (2017) discussed the relationship between PPPs and the violation of human rights in the context of mega-events.
However, there is still a lack of critical and reflective studies on the different dimensions of these sporting events (Tavares, 2011). Little research is dedicated to problematizing and rethinking the various aspects that involve the legacies and the management of mega-events in terms of their impacts on the environmental, social-cultural, psychological and administrative-political spheres. General legacies of mega-events are sports and infrastructure construction in cities, the country’s image, knowledge and governance (Toledo, Grix & Bega, 2015). Governance legacies concern participatory planning, the cooperation of different administrative bodies, PPPs and the leadership of local public authorities (Tavares, 2011).

It is in this gap that this article is inserted, based on investments for a mega sporting event in the context of governance legacies, with the following problem question: does the structural sociology of the PPP networks of the 2014 World Cup indicate evidence of administrative modernization and conflicts of interest and corruption? The objective of the research was to analyze the PPPs for investments related to this mega sporting event in Brazil and to discuss the potential conflicts of interest and possibilities of corruption driven by the formation of networks between public and private organizations.

The relevance of the research is to show the economic configuration of the networks formed in this sporting event that moved billions of reais and changed the social spaces of several cities, proposing reflections on how the PPP networks enable concrete analyses of management reform, clientelism, conflicts of interest and corruption, giving rise to social control.

The article is structured in four more sections. In the second, we discuss management reform, PPPs and corruption in mega-events. In the third, we describe the research methodology. In the fourth, we present the results obtained and, finally, we highlight the final considerations and the practical implications of the findings.

2. MANAGEMENT REFORM, PUBLIC-PRIVATE PARTNERSHIPS AND CORRUPTION IN MEGAEVENTS

The reforms of the Brazilian State are subjected to political, social, economic and cultural pressure (Costa, 2008a). Public administration models were instruments of administrative reforms that guided public management in the periods 1500-1930 (patrimonialist model), 1930-1990 (bureaucratic model) and after 1990 ([management model] Bresser-Pereira, 1997; Costa, 2008a, 2008b). Currently, these models coexist with other forms of management – societal public administration and public governance – that emerged after the 2000s (Paula, 2005; Secchi, 2009).

The models indicate centralization and decentralization of the State’s decision-making process resulting from the construction of the national public service (Costa, 2008a), accumulate advances and innovations and present uneven and fragmented results for the Brazilian public bureaucracy as a whole (Abrucio, 2007). In Brazil, management reform, inspired by the New Public Management (NPM) movement, was implemented at different times for the Executive Branch (beginning in 1990) and the Executive Branch (beginning in 2004).

In the perspective of its articulator, Minister Bresser-Pereira, management reform is a type of remedy for Brazilian patrimonialism and corruption, but it has achieved little effectiveness in reaching its objectives (Bresser-Pereira, 1996, 2000). More than two decades after its introduction,
several researchers (Alverga, 2003; Brulon, Ohayon & Rosenberg, 2012; Pinho, 2016b, 2016a) list countless contradictions and failures as causes for the failure or incompleteness of the reform, and “most scholars refer the problem of unsuccessful management reform to a trajectory dependent on colonial heritage rooted in clientelism and patrimonialism that Brazil did not cut” (Lourenço, 2018, p. 22).

Filgueiras (2009) criticizes the conception of colonial heritage as a cause of failure. The colonial aspect defends that corruption is a daily practice linked to the character of the Brazilian and occurs in the State because of our historical constitution. Thus, it treats clientelism and nepotism as fundamental marks in the relationship between State and society. Filgueiras (2009) defends that, instead of being explained by the patrimonial heritage, the understanding of corruption must pass through the formal and informal institutional norms, as well as through the cultural, social, political and economic values of Brazil. Following this understanding, when there are no effective legal or practical instruments that inhibit and punish deviations from ethical conduct and reorganize power relations, corruption, to use Bourdieu’s terms (1990), it is expressed by a habitus that structures social practices in public management.

Implemented as a means to inhibit patrimonialism corruption (Bresser-Pereira, 1996, 2000) while financing the latter, which should be taken care of by public non-State organizations. Within the State’s activities, the 1995 reform additionally distinguishes the strategic core, where decisions are made, from executive and regulatory agencies, which are supposed to be more autonomous than in classical bureaucratic systems, and more accountable. The reform’s basic principles, consistent with the new public management, were defined in the 1995 Plano Diretor da Reforma do Aparelho do Estado (Master Plan for the State Apparatus Reform, the Brazilian management reform had among its objectives to make possible the appropriation, by the State, of a management pragmatism that would allow public administrators to be more autonomous and responsible, and agencies that execute public services to be more decentralized and efficient. The reform adopted the NPM premise that the market is more efficient at managing than the State (Shearer, 2016) and encouraged the State-market relationship by applying management tools that insert administrative and market principles in local governments, such as decentralization, competition, outsourcing and hiring outside public organizations (Gruening, 2001).

PPPs in Brazil are one of the direct results of management reform and regulated by Laws No. 8,987/1995 and No. 11,079/2004 (Brasil, 1995, 2004). The first one deals with the concession of services and public works, as well as the permission of public services, through bidding. The second defines PPPs as “the administrative concession contract, in the sponsored or administrative modality”, establishes the guidelines for hiring, guides contractual clauses, guarantees and bidding modality. The legislative texts provide that concessions and permissions will be supervised by the granting authority; however, they do not discuss objective responsibilities and punishments in cases of acts that are harmful to the public administration. Specific regulations on fraud and corruption involving public tenders were included in Law 12.846/2013 (2013), called the Anti-Corruption Law. Thus, PPPs are subject to examination and accountability in cases of illegal acts, fraud and corruption.
2.1 PPPs: State-market relations

PPPs are cooperative institutional contracts that effect interactions between the public and the private sectors. These contracts are intended to overcome the traditional disadvantages of public procurement and, in some developed countries, have enabled a steady growth in the number of projects (Wang, Xiong, Wu & Zhu, 2018). As a result of this administrative practice, many governments around the world, both in developed and developing countries, are becoming increasingly dependent on private actors for the implementation of public policies, with significant growth after the global financial crises of 2007 and 2008 (Osei-Kyei & Chan, 2015). The PPPs seek to take advantage of the private sector’s expertise and capital to minimize its deficit in infrastructure and public services, such as transportation, water and sewage, energy, environmental protection, public health and others.

On the one hand, PPPs consolidate the policies for liberalizing State activities and, on the other hand, create an alternative to the population’s demands for public services (Broadbent & Laughlin, 2004). PPPs establish administrative procedures for the provision of public services through organizations that explore interinstitutional relations between the State and the market, allowing the exploitation of services previously specific to the public sector (Broadbent & Laughlin, 2004). The management reform of governments presupposes that the execution of certain services can be the domain and control of the State, of private initiative or in a shared way between both. Joyner (2007) points out that these socioeconomic dynamics of sharing allow certain services to be offered, even if the individual parties do not have a satisfactory supply capacity for society.

In Brazil, as pointed out by Abrucio (2007), one of the paths of management reform to strengthen government action occurred in a structured way, with the redistribution of activities with the private sector through PPPs. Brazilian private and public organizations sought to promote initiatives in contractual relations with the State, which were put into practice by business consortia. The possible relations between the public and the private sectors were perceived as a conception of an efficient, transparent and original institutional model resulting from the improvement of the contractual model of public administration (Brito & Silveira, 2005; Trosa, 2001).

PPPs show microarrays of private sector organizations, with their classes of leaders and public sector organizations, with classes of public and political bureaucrats. Such microarrays point to a possible concentration of power in the ruling classes (Moore, 2007). In this perspective, the leaders of the private initiative and the bureaucrats of the administrative structure of the State understand that their power and prestige depend, in essence, on the autonomy and strength of the nation-state they direct. Thus, the autonomy and strength of the nation-state directs them to have common interests that exceed possible ideological divergences (Bresser-Pereira, 2007).

A fact that draws attention to the strengthening of relationships between the State and the market, according to Moore (2007), lies in the differentiation of society in microarrays, which, for (Bresser-Pereira, 2007), points to the power of the ruling classes, both from public administration and private companies. Administrative modernization of the State, through contracts with the private sector, can be understood by social relationships in markets. These contracts may show a structural sociology of the positioning of power in the public and private interests of organizations and their leaders.
Despite the enormous interest of governments in PPPs, their implementation still crosses many obstacles. Among those found, Liu and Wilkinson (2011) cite the high transaction cost, a long acquisition process, lack of appropriate skills, unattractive financial market, incomplete risk transfer and higher end user charges. These obstacles to the practices and implementation of PPPs contribute to the importance of discussing the topic, in order to assist in the future implementation of such partnerships, thus reducing setbacks. In this regard, it is important to note the control mechanisms and instruments used by the government to consciously influence the decisions and behavior of other public and private actors involved in PPPs to achieve government objectives.

Public agents can use formal governance instruments, which involve control mechanisms and instruments in relation to competition, products and transactions. The following are examples of possible formal governance instruments implemented in PPPs: a government that unilaterally prescribes very detailed rules and procedures; a rigid reference design or proposal specifications; incentives to private consortia via risk transfer, functional production specifications, performance monitoring and rewards, as well as performance-based sanctions (Hueskes, Verhoest & Block, 2017). In addition to these, informal instruments can be implemented in PPPs, which refer to objects of network or relational governance. Informal governance instruments in PPPs can be implemented in the interaction with bidders and in the management of contracts. Edelenbos and Klijn (2009) emphasize that, in these cases, the level of mutual trust, joint decision making and process management are seen as factors that influence the performance of PPPs.

2.2 Controversy and corruption in sporting mega-events

Mega sporting events, especially the Olympic Games and the Soccer World Cup, imply significant costs with long-term impacts on the environment built and the population of the cities that host them. Müller (2015) shows that, in the last three decades, mega-events have become enterprises that transform cities, regions and, at times, entire countries. The planning of these mega-events appropriates resources, tends to monopolize public attention, can suspend the normal rule of law and often rewrites urban and regional development plans (Müller, 2015).

Sporting mega-events have become occasions for large-scale urban transformation, and because they are linked to numerous positive socio-economic impacts, the governments of the host countries invest large amounts of resources in bidding and organizing these events. Coakley and Souza (2013) argue that the “sport for good” narrative was replaced, in the neoliberal era, by the “sport for development” narrative, with the intention of justifying the massive application of public resources to host mega-events.

However, there are also negative impacts, which can turn mega sporting events into obstacles, instead of benefits, for urban development. Among these, there is an oversized infrastructure at an inflated price, for which the public is forced to pay in an uneven and inefficient allocation of resources (Müller, 2015). This phenomenon becomes complex and difficult to follow, as the accounting details are dispersed in multiple directions thanks to the participation of different public and private actors, each with their own agenda and budget (Coakley & Souza, 2013). The occurrence of numerous emergency allocations, unforeseen and undeclared expenses, bribes, kickbacks and other forms of
corruption are not uncommon, guiding capital flows towards powerful and well-positioned actors (Campos & Pereira, 2016).

In the context of these mega-events, corruption manifests itself at the competitive and organizational levels. In this work, it is important for us to deal with organizational corruption, which negatively influences the structure and planning of mega events. Organizational corruption is a systemic problem and, in these cases, attributed to rampant capitalist activities, associated with abuses of political power (Kulczycki & Koenigstorfer, 2016; Maharaj, 2015) corruption is considered to be a mega sport event syndrome. This research paper assesses whether and how perceived corruption of event-governing bodies (and at the host country level.

In this regard, Law 12.462 (2011) instituted the Differentiated Public Procurement Regime, which was subject to scrutiny by the Public Ministry and, broadly, by the media. The aforementioned law allowed for simplified contracting of works, facilitating the bidding process in order to save time, in view of the long delay of the works. An item of the law pointed out at the time as having a high risk of deviations was “integrated hiring”. In this modality, the public authority hired the contractor without knowing the specifications of the work, not having a technical basis to discuss the prices presented by the contractor.

Countless headlines about corruption have appeared in the media since Brazil was approved as the host country for the 2014 World Cup. Initial discussions previously pointed out the great risk of bringing the country and the event into chaos, given the history of Brazilian corruption (Pappon, 2007). On the eve of the start of the World Cup, political demonstrations against the event were initiated, as printed on the cover of the newspaper El País: “Por que o Brasil está contra a Copa?” (Why is Brazil against the World Cup?) (Arias, 2014). At that time, the waste of public resources allocated to the event was already evident. It was questioned that the investment would be better used in education and hospitals; however, billions of reais were allocated to build stadiums and other works related to the event (Costas, 2013).

More recently, as a result of the investigations occurred in Operation Car Wash, State’s evidence of former executives from the contractors was disclosed stating that nine of the twelve stadiums involved kickbacks and slush fund (Leite, 2017). In terms of corruption, to paraphrase headlines in the media, Brazil was number one, in a broad process that involved politicians from different parties and positions throughout the Brazilian territory.

3. METHODOLOGY

Economic relations are not precedent to other types of social relations, therefore the markets are supported by social networks composed of polyvalent individual ties (Raud-Mattedi, 2005). Through contractual relationships, according to Swedberg, (2004), the analysis of relationship networks is a flexible tool to deal with a significant number of social and economic phenomena in the market. The network is a regular set of contracts or similar social connections between individuals and groups, which allows access to diverse social universes and a greater diversity of information (Granovetter, 1973, 1992). The analysis of social networks can be performed based on the graphic representation of the structure of bonds and sociometric measures related to the position of the actors (Scott, 2000).

In this research we used the demonstration of density and centrality (Hanneman & Riddle, 2005, 2009; Scott, 2000) in a two-level relationship, that is, the private organization has bonds in moments of offering its services to the State, which can be expressed through a binary affiliation matrix. The
elaboration of matrices has allowed to represent the network graphically and demonstrate the centrality of the actors and the density of the network.

The research adopted the sociometric methodology to identify the social network structures of 466 actors – private companies, business consortia, public organizations, public and private banks – which participated in the PPPs. The Ucinet software was used for graphical representation of the network and consequent systematization of the data with presentation of measures of centrality and density of the network.

Data collection and analysis followed the ensuing steps: analysis of documents related to bidding processes and inherent to government purchases and PPPs published on the websites Copa Transparente and Copa 2014,¹ currently linked to Portal da Transparência (Transparency Portal);² identification of companies and consortia formed to provide public services; graphical representation of investment networks for the current case; description of the centrality measures of the actors; analysis of documents related to the Federal Public Prosecutor’s Office (MPF) ³ Operation Car Wash; and identification of the network actors denounced in Operation Car Wash.

The data of public and private organizations available in the contracts were systematized, grouped and organized in tables with the relationships between institutions, economic sectors and performance in the Brazilian State. Public and private agencies were categorized by alphanumeric codes composed of letters and sequential numbers. The organizational categories and their respective alphabetical codes were as follows: public organizations – letter A; private companies – letter P; business consortia – letter R; public and private banks – letter V.

The data were presented and analyzed by the frequency found between companies, sectors and direct and indirect public administration, in order to characterize the market for public services granted. The systematization of the data made use of Microsoft Excel spreadsheets, which allowed the identification of variables reorganized in other spreadsheets of the same software to make estimates – for example, to indicate the monetary magnitude of the investments.

The sociometric analysis, using the software Ucinet for Windows, relied on the graphical representation and the density measurement of the public and private investment network, in addition to identifying the positioning of the actors in the network based on their measures of centrality, proximity and intermediation (Hanneman & Riddle, 2009). The first measure used was the network density, that is, the centrality of the actor, which is a numerical representation of the proportion of existing links in relation to the total of possible links (Hanneman & Riddle, 2009). The concept of centrality is the most expressive indicator of a relationship network because it indicates positions played in the social structure (Freeman, 2002; Freeman, Roeder & Mulholland, 1980; Hanneman & Riddle, 2009; Nadel, 2002). The degree of centrality (or just “degree”) of an actor represents the direct connections defined by the number of connections of a node (actor) with the other nodes (actors) of the network. The degree of a point is a count that represents the proportion of existing links in relation to the total possible links of the actor with other actors – the higher the degree, the greater the centrality.

¹ Expenditure by Member States, with documentation related to PPPs, government purchases, analyzes by the Federal Court of Accounts, among other documents, were consulted from March 2014 to October 15, 2014 and were retrieved from http://www.portaltransparencia.gov.br/copa2014/home.seam and http://www.copa2014.gov.br/pt-br
² Retrieved from http://www.copatransparente.gov.br/homecopa
³ Os documentos consultados entre janeiro e dezembro de 2017 estavam disponíveis em The documents consulted between January and December 2017 were retrieved from http://www.lavajato.mpf.mp.br/lavajato/index.html. Currently, data and information can be retrieved from http://www.mpf.mp.br/grandes-casos/lava-jato/acoes.
For the indirect relationships of the actors in the networks, two measures were used: closeness and betweenness. The degree of closeness (or just “closeness”) of an actor represents how close he or she is to all other actors in the network, which includes direct and indirect links – the higher the degree, the greater the actor’s proximity to others (Hanneman & Riddle, 2009). The degree of intermediation (betweenness) of an actor represents the number of geodesics using the node as a gateway to other nodes, that is, the actor in the position of intermediation has the possibility of more than one path in the network. The higher the degree, due to the position it occupies on the shortest curve that joins two adjacent points, the greater the intermediation of the actor with the others (Hanneman & Riddle, 2009).

4. ANALYSIS OF THE INTER-ORGANIZATIONAL NETWORK BETWEEN STATE AND MARKET

The relationship network analyzed is composed of 446 actors linked by contracts of approximately 24 billion reais, in nominal values for 2014. Of these actors, 296 are private companies, 83 are business consortia, 61 are public organizations and 6 are public and private banks. Table 1 lists investments by Brazilian states, type and value.

### TABLE 1 INVESTMENTS FOR THE 2014 WORLD CUP (VALUES EXPRESSED IN MILLIONS OF REAIS)

<table>
<thead>
<tr>
<th>STATES</th>
<th>Airports (R$)</th>
<th>Arenas (R$)</th>
<th>Urban Mobility (R$)</th>
<th>Ports (R$)</th>
<th>Others (R$)</th>
<th>TOTAL (R$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amazonas</td>
<td>352,40</td>
<td>620,80</td>
<td>0,00</td>
<td>4,63</td>
<td>0,00</td>
<td>977,83</td>
</tr>
<tr>
<td>Bahia</td>
<td>139,45</td>
<td>591,71</td>
<td>0,00</td>
<td>37,29</td>
<td>131,22</td>
<td>899,66</td>
</tr>
<tr>
<td>Ceará</td>
<td>404,86</td>
<td>518,61</td>
<td>626,70</td>
<td>183,56</td>
<td>19,52</td>
<td>1753,25</td>
</tr>
<tr>
<td>Distrito Federal</td>
<td>1132,57</td>
<td>1437,69</td>
<td>43,40</td>
<td>0,00</td>
<td>0,00</td>
<td>2613,67</td>
</tr>
<tr>
<td>Mato Grosso</td>
<td>111,25</td>
<td>596,36</td>
<td>1592,76</td>
<td>0,00</td>
<td>0,00</td>
<td>2300,38</td>
</tr>
<tr>
<td>Minas Gerais</td>
<td>479,73</td>
<td>688,41</td>
<td>1111,76</td>
<td>0,00</td>
<td>0,00</td>
<td>2279,89</td>
</tr>
<tr>
<td>Paraná</td>
<td>297,26</td>
<td>262,28</td>
<td>427,78</td>
<td>0,00</td>
<td>0,00</td>
<td>987,32</td>
</tr>
<tr>
<td>Pernambuco</td>
<td>0,00</td>
<td>385,31</td>
<td>950,60</td>
<td>28,08</td>
<td>0,00</td>
<td>1363,98</td>
</tr>
<tr>
<td>Rio de Janeiro</td>
<td>492,70</td>
<td>1077,02</td>
<td>1701,98</td>
<td>0,00</td>
<td>35,28</td>
<td>3306,98</td>
</tr>
<tr>
<td>Rio Grande do Norte</td>
<td>164,25</td>
<td>400,00</td>
<td>363,19</td>
<td>72,54</td>
<td>12,69</td>
<td>1012,67</td>
</tr>
<tr>
<td>Rio Grande do Sul</td>
<td>278,79</td>
<td>330,00</td>
<td>33,31</td>
<td>0,00</td>
<td>0,00</td>
<td>642,10</td>
</tr>
<tr>
<td>São Paulo</td>
<td>4059,81</td>
<td>820,00</td>
<td>0,00</td>
<td>275,10</td>
<td>0,66</td>
<td>6155,56</td>
</tr>
<tr>
<td>TOTAL</td>
<td>8,913,08</td>
<td>7,728,20</td>
<td>6,851,48</td>
<td>601,19</td>
<td>199,37</td>
<td>24,293,31</td>
</tr>
</tbody>
</table>

Source: Contract data posted on websites Copa Transparente and Copa 2014.  

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1 Nominal values in October 2014. The variation in the Broad Consumer Price Index (IPCA) until July 2020 corresponds to 33.91%.
Figure 1 shows the investment network composed of organizations from the union, states and municipalities, consortia and companies responsible for investments in airports, sports arenas, urban mobility, ports and others distributed in 12 Brazilian states.

The standardized measures of positioning of the 20 actors with the highest degree of positioning in at least two measures of centrality of the investment network for the 2014 World Cup are described in Table 2.

### TABLE 2 CENTRALITY MEASURES OF THE INVESTMENT NETWORK

<table>
<thead>
<tr>
<th>CENTRALITY MEASURES</th>
<th>nDegree</th>
<th>nCloseness</th>
<th>nBetweeneness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actor A48</td>
<td>3.178</td>
<td>1.135</td>
<td>A48 37.056</td>
</tr>
<tr>
<td>V1</td>
<td>1.413</td>
<td>1.132</td>
<td>A1 20.482</td>
</tr>
<tr>
<td>A1</td>
<td>1.124</td>
<td>1.131</td>
<td>P59 12.049</td>
</tr>
<tr>
<td>A61</td>
<td>1.059</td>
<td>1.130</td>
<td>V1 11.960</td>
</tr>
<tr>
<td>A4</td>
<td>0.931</td>
<td>1.130</td>
<td>R75 11.162</td>
</tr>
</tbody>
</table>


The Brazilian Airport Infrastructure Company (Infraero), that is, A48, has the maximum number of relationships (99), and about 50% of the actors have only one relationship. Among the 20 actors with the highest degree of centrality, 13 are public organizations, 4 are private companies, 2 are public banks and 1 is a business consortium.

The most central actors are: Infraero (A48), Caixa Econômica Federal ([CEF] V1), Belo Horizonte Municipality (A1), Extraordinary Security Secretariat for Major Events of the Ministry of Justice ([Sesge/MJ] A61), Municipality of Curitiba (A4), National Telecommunications Agency ([Anatel] A52) and National Bank for Economic and Social Development ([BNDES] V2). Using Hanneman & Riddle (2009), we can say that the actors have more power because they have more opportunities and alternatives than the other actors in the network. Therefore, the measure of centrality indicates that opportunities and alternatives in the network are concentrated in these first 7 actors. The actors that stand out in the network are public organizations that demanded investments in airports, urban mobility and telecommunications. The central position of public organizations can indicate the centrality of the public interest, and, according to Hanneman & Riddle (2009), the low concentration or centralization in the network signals that the power of individual actors varies and the positional advantages are not concentrated.

The network has disconnected graphics, which did not allow the analysis of the network’s centrality index based on proximity. However, the data shows that, among the 20 actors with the greatest degree of proximity, there are 8 private companies, 6 business consortia, 4 public organizations and 2 public banks. The closest actors were: Infraero (A48), Delta Construções SA (P109), State of Mato
Grosso (A17), BNDES (V2), Construtora Andrade Gutierrez SA (P106), CEF (V1), Cowan Conserva Consortium (R50), Odebrecht Serviços de Engenharia e Construção SA (P139), Consórcio Integração (R14), CVF Engenharia e Comércio LTDA (P219), Curitibana de Saneamento e Construção Civil LTDA (P37), Municipality of Fortaleza (A5) and Municipality of Belo Horizonte (A1).

The proximity of the actors makes it possible to differentiate them in comparison with the others, according to Hanneman & Riddle (2009), as they have more possibilities of relationships with other actors, shortening the paths and, therefore, exercising reference power. Among the 20 actors with the highest degrees of organizational reference, 13 stand out for having higher degrees of centrality and/or intermediation.

The reference power of the network, defined by the degree of proximity of the actors, occurred, on the one hand, in organizations responsible for the demand for investments in the airports, arenas and urban mobility areas, and, on the other, in engineering companies and business groups and heavy construction. The degree of proximity confirms the power of actors identified in the degree of centrality and highlights in particular those who represented the private interest.

The actors with the highest degree of intermediation represent approximately 36.5% of the network and are different from the others for being a passage, according to Hanneman and Riddle (2009), for other nodes, intermediating relationships with other actors, exercising, therefore, intermediation power. Among the 20 actors with the highest degree of intermediation, 6 are public organizations, 6 are private companies, 6 are business consortia and 2 are public banks. Among intermediaries, 8 stand out for their degrees compared to the others. Infraero (A48) has a degree approximately 55% higher than the second actor: Municipality of Belo Horizonte (A1). Constran S.A. Construções e Comércio (P59), CEF (V1) and Consortium Serveng/Constremac/Constran (R75) have a degree of intermediation that corresponds to about 32% of the actor’s degree in first place. State of Mato Grosso (A17), Delta Construções S.A. (P109) and BNDES (V2) have a degree that represents approximately 20% of the degree of the first place.

Intermediary actors are responsible for demands or meeting demands at airports, arenas and urban mobility. The intermediation measure, according to Hanneman & Riddle (2009), considers the relationships and the power of intermediation that confirms the power of actors who were central and close and shows public contractors, companies and partnerships with specific purpose for the execution of contracts with the State. Some statistical characteristics are worth considering for the morphological analysis of the 2014 World Cup investment network. Table 3 shows some of them.

**TABLE 3 CENTRALITY MEASURES AND STATISTICS**

<table>
<thead>
<tr>
<th>CENTRALITY MEASURES</th>
<th>STATISTICS</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Average</td>
<td>Standard deviation</td>
<td>Variance</td>
</tr>
<tr>
<td>nDegree</td>
<td>0.096</td>
<td>0.196</td>
<td>0.039</td>
</tr>
<tr>
<td>nCloseness</td>
<td>0.937</td>
<td>0.351</td>
<td>0.123</td>
</tr>
<tr>
<td>nBetweenness</td>
<td>0.719</td>
<td>2.553</td>
<td>6.516</td>
</tr>
</tbody>
</table>

Source: Research data.
The statistical description of the network indicates some characteristics of the structural sociology of the relationships analyzed. The intermediation measures of the actors present high numerical quantities in comparison with the centrality and proximity, in addition to indicating great variance and standard deviation in the intermediation. This finding evidences the differentiation of intermediation of the actors with a higher degree.

The application of socioeconomic analytical categories in these PPPs shows the effectiveness of the division of public services between the State and the market. The division and specialization of work indicate that private companies played central roles in operationalizing the activities of federated entities. The most central actors in the network, evidenced by measures of centrality, proximity and intermediation, were public organizations responsible for the regulation and provision of services and private organizations that shared investments through PPPs and construction companies responsible for the execution of investments and service rendering companies.

Another structural aspect of the network evidenced by the centrality measures was the division of labor between the federated entities: union, states and municipalities. The union was responsible for hiring for the demands of airports, ports and specific public security services. The member states of the federation were responsible for investments in sports arenas, while the municipalities were responsible for specific investments such as urban mobility.

The sociometric analysis of the investment network for the 2014 World Cup is in line with the discussions presented by Bresser-Pereira (1997a, 1997b), Broadbent e Laughlin (2004) and Martins (1997), specifically because it highlights the State as a regulatory and financing. The performance of the Brazilian State as a financial agent for investments was evident with the outstanding performance of public, state or municipal banks, which publicly managed to meet the demands of society in airports, sports arenas and urban mobility.

Following the understanding of Swedberg (2009), the contractual relationships evidenced in the investment network for the 2014 World Cup strengthen the economy with a process that begins in production and continues with distribution to meet the consumption of public entertainment, security and urban transport services. These contractual relationships stimulated the liberation of State activities through market actions inserted, according to Granovetter (1973), in broader structures of social relations and exchanges.

Public and private actors may have an underlying trust that, according to Granovetter (1973), may not be exhausted only in the contractual relations between them in the PPPs. In addition, following the understanding of Raud-Mattedi (2005), moral aspects between the actors can foster relations between the State and the market, allowing the relationships formally described in the PPP contracts to extrapolate economic activity and allow the fulfillment of diverse interests.

In this way, the investment network for the 2014 World Cup can extrapolate the economic interests of private actors and the fulfillment of public interests (Granovetter, 1973, 2002; Swedberg, 2004, 2009; Swedberg & Granovetter, 1992), enabling interests of power groups of public (bureaucrats and politicians) and private leaders (see Bresser-Pereira, 2007).

Conflicts of interest are closely linked to fraud and corruption in public administration (Reis, 2007). As we highlighted earlier, corruption in Brazil is a historical phenomenon that is one of the main problems of public management. Avritzer and Filgueiras (2011) highlight that this phenomenon needs to be denaturalized and not reduced only in terms of economic costs; corruption must be analyzed as a political phenomenon.
In our effort to list the most central companies in the investment network for the 2014 World Cup, we note that, among the private actors in the network, some are involved in the role of the MPF through Operation Car Wash. This finding is relevant to Brazilian society with regard to the emergence of ethical issues linked to leaders of public, private or political parties when in PPP relationships. According to Bresser-Pereira (2007), the relationship between State and market may show the concentration of power in the governing classes of public and private organizations, as well as, according to Moore (2007), ethical issues and deep conflicts of interest, as seen when finding the results of the MPF’s performance emerging in the relationships between companies and public agencies linked to the network analyzed.

MPF, through Operation Car Wash, reported 16 companies. Of these, 7 entered into administrative contracts with the State to carry out works for the 2014 World Cup. The private organizations reported by the MPF have a varied position in the centrality measure rankings. Table 4 shows the 7 companies identified in Operation Car Wash, sequenced by the actor’s centrality measure (degree) in the public and private investment network of the 2014 World Cup.

| TABLE 4 COMPANIES IDENTIFIED IN OPERATION CAR WASH BY MEASURES OF CENTRALITY OF THE INVESTMENT NETWORK |
|--------------------------------------------------|-------------------------------------------------|-------------------------------|
| COMPANIES | CENTRALITY MEASURES |
|          | Degree1 | Closeness2 | Betweenness3 |
| Andrade Gutierrez (P106) | 8° | 5° | 11° |
| Odebrecht (P139) | 15° | 8° | 25° |
| Mendes Júnior (P107) | 29° | 106° | 27° |
| Engevix (P176) | 31° | 22° | 58° |
| O AS (P111) | 54° | 109° | 102° |
| Queiroz Galvão (P52) | 203° | 239° | 31° |
| UTC (P58) | 225° | 246° | - |

1 The degree ranking has a total of 446 actors.
2 The closeness ranking has a total of 446 actors.
3 The betweenness ranking has a total of 166 actors.

Source: Research data.

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Construtora Andrade Gutierrez Inc. and Grupo Odebrecht de Serviços de Engenharia e Construção Inc. have a position that indicates power of centrality, reference and intermediation. Table 4 also highlights the reference and intermediation power of Engevix, Mendes Júnior Trading e Engenharia Inc. These private companies have a different position from the general with regard to proximity and intermediation relationships. As described above, indirect measures generally indicate power to consortia, banks and public organizations. Therefore, their positioning is a punctual, rather than structural, aspect of the network, even with Andrade Gutierrez, Engevix and Mendes Júnior participating in 6 private business consortia. However, the power of companies in the heavy construction market and the ethical dilemmas that emerge from the relationships between their leaders and those of the State and political parties is evident.

The companies highlighted in Table 4 are responsible for more than 40 actions – criminal, improbity and/or investigations – within the scope of Car Wash, of which one third had a judicial decision in 1st and/or 2nd instances, with deviations of resources pointed out in the around 20 billion reais. On several occasions, such as the Petrobras cartel, the São Paulo ring road and money laundering schemes, which involved the money changer Alberto Youssef, the companies acted in an associated manner. Specifically, in the cases of corruption reported on the SP subway (lines 2, 5 and 6), in the duplication of PR-323 in northwest Paraná and in sanitation projects in Rio Grande do Norte, these contractors had irregularities identified in tenders and concessions of the PPPs.

The relationship between public and private organizations is not limited to the new organizational and management formats, nor to the way in which the leaders of these organizations operate; it involves ethical issues (Bilhim, 2014). Thus, the administrative acts necessary to carry out the investment network for mega-events must also be analyzed in the light of ethical issues. The findings of the relationship network for the 2014 World Cup in this research confirm the arguments of Bilhim (2014) and ignite important alerts for PPPs to be signed in the future, especially with regard to the governance aspects highlighted by Tavares (2011), to participatory planning, the cooperation of different administrative bodies and the leadership of the local public power.

Considering the above mentioned, PPPs bring together a tangle of economic, political, ethical and social relations that cannot be grasped by a simplistic analysis of financial accountability and delivery of adjusted services. Public-private relations through these contractual partnerships need effective controls that involve both public bodies, the judiciary and society. The administrative modernization carried out by the new public and private organizational microarrays can guarantee, according to Moore (2007), the sharing of risks and resources, but they must also, according to Tavares (2011) and Toledo et al. (2015), provide governance legacies.

Thus, as Avritzer and Filgueiras (2011) ponder, a perspective for Brazilian development is that corruption is controlled considering three forms of control – administrative-bureaucratic, judicial and non-state public –, instead of considering only internal control and public administration. Furthermore, it is healthy to take a broader approach to the concept of public.
5. FINAL CONSIDERATIONS

The article analyzed the PPP contracts signed for the 2014 World Cup in Brazil through a network of relationships represented graphically by measures of centrality of the actors. The structural sociology of the network highlighted the public services granted, identified the companies and consortia of the bidding processes and presented the actors with the greatest power in the network. The results show that, in this organizational arrangement, public entities assume different roles in the organization of public services bid. The State acted as a promoter and regulator of investments, while the market acted as responsible for meeting public demands. Therefore, the public and private investment network for this mega sporting event indicates the implementation of an agenda for modernizing the State and reforming the Brazilian public administration.

Infraero was the most powerful public actor in the network, being responsible for administration, industrial and commercial exploitation of the Brazilian airport infrastructure, accounting for 36.7% of total investments. Other prominent public organizations were public banks, mainly BNDES and CEF, which are responsible for financing public administration to meet the demands of the World Cup. The structural sociology of the network indicated that, in the division of labor between federal public administration bodies and between federal entities, the union was responsible for the demand for investments in airports and communication, through Infraero and the National Telecommunications Agency (Anatel). It was up to the Member States to demand the sports arenas and the municipalities to demand urban mobility.

From a theoretical point of view, the results show the effectuation of a facet of the Brazilian management reform through PPPs, which materialize NPM assumptions under which the State starts to demand from the market the satisfaction of public needs. One of the practical implications of the research is to show that the management model that underpins PPPs needs to deal with complex issues such as illegal acts, ethics and corruption, which are beyond the records in contracts, since they involve conflicts of interest that are not always apparent.

In addition to showing the bond, the reference power and the intermediation of the investigated actors, we show that 7 of the 16 companies involved in Operation Car Wash participated in the investments for the 2014 World Cup. This is an aspect to be seriously considered by society, which can, in a preventive and supervisory manner, fulfill its role of social control in favor of a legacy of governance. The data presented indicate that, on the one hand, PPPs formed an agenda for modernizing the State and reforming the Brazilian public administration, and, on the other, that administrative modernization was not able to exclude the latent conflicts of interest and corruption that may arise, or intensify through the economic relationships established between the public and the private sector.

The network analysis method contributed to the transparency of contractual relations between the public and private interests, offering new subsidies, through the positioning of the actors, for better control by society, which is currently restricted to accounting, financial, budgetary, operational supervision and assets of the State. Thus, this study indicates the need for a research agenda that identifies and represents relationships and underlying interests of public investments. This agenda could explore mechanisms to improve transparency in shifting the power of state monopolies to private initiative, in certain sectors, with possible concentrations in public or private actors. The data from the present research point to the need to improve the formal and informal instruments of
public governance that allow, for example, the participatory planning of investment priorities, the cooperation of different administrative bodies that integrate the PPP processes and the monitoring of the performance of administrative contracts by organized civil society.

Thus, future research may seek to understand PPPs in contracts other than those intended for mega-events, as we did in this study. Such research could investigate, for example, the leadership of local public authorities in public-private articulations, the relations between PPPs and the establishment of administrative and legal corruption processes, in addition to the power of influence of certain governments, political parties and PPPs for the provision of public health services or transportation. Finally, we believe that future research could also investigate how organized civil society could act as an actor in networks in order to guide the focus of investments and the consequent monitoring and social control of their effectiveness for Brazilian society.
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