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ORIGINAL RESEARCH ARTICLE

Plural Governance for the Management of Local Public Services: An Empirical Investigation on the French Car Park Industry

Zoé Le Squeren*

Université de Lille (IAE), Lille, France

Abstract

This paper investigates the use of plural governance for the provision of local public services. Most of the studies conducted on local data compare direct public provision (i.e., in-house provision where governments produce public services themselves, using their own equipment and employees) to contracting out. But governments actually face a more complex set of choices than the simple make-or-buy dichotomy. In particular, cities can simultaneously opt for the 'make' and 'buy' alternatives for the provision of the same public service, and thus produce a portion of the service themselves while contracting with external (public or private) companies. We show how contractual perspectives and the resource-based view of the firm help to understand the rationales behind plural sourcing. Organizations appear to be able to adopt this governance structure to enhance efficiency since it enables them to employ benchmarking strategies. However, authors in public management insist on the specificities of public sector contracting, and our analysis also includes political measures, such as the number of changes of political affiliation at the head of cities. Our empirical analysis examines data about car park management by 97 municipalities in 2010. We use a multinomial logit to compare three distinct alternatives: total internal provision, complete externalization, and plural sourcing. Our results clearly indicate that plural sourcing is a strategic choice that is adopted by municipalities to reduce the cost of service delivery when they suffer from high levels of fiscal stress. Plural governance does not result from the alternation of political parties in power, indicating that political factors do not play a significant role in explaining that sourcing decision.

Keywords: *Plural sourcing; Concurrent sourcing; Public services; Governance choices; Local data*

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Public procurement, the process by which governments purchase goods and services from the private sector, is a key economic activity and has a direct impact on citizens' welfare. In 2017, public procurement accounted for 29.1% of total government expenditure (i.e., almost 12% of GDP) in OECD[1] economies. If this share is relatively stable over time,[2] the financial crisis of 2008 has urged governments to increase the efficiency and effectiveness of this key function (OECD, 2019), as it determines to a large extent the quality and price of public services. Moreover, the decentralization process has amplified the role played by subcentral governments, which make up 63% of overall public procurement spending (OECD, 2019).

In France, this portion has doubled since 1950, and recent legislation has again strengthened the powers of local governments: in 2015, the NOTRe law[3] reinforced the powers of regions and intercommunal structures, and created a specific agency to regulate and monitor the management of local public services.[4] The study of local procurement is thus of primary importance.

This paper aims to examine a specific way of delivering public services: plural governance. Plural sourcing can be observed when a city simultaneously uses internal provision and outsourcing for apparently identical transactions. Plural governance further implies that a specific governance structure is adopted: internal and external provision of services are combined to increase the efficiency of service delivery. Studies conducted in private contexts have shown that private firms use plural governance to improve efficiency (Heide, Kumar, &

1. Organisation for Economic Co-operation and Development.
2. In 2007, public procurement accounted for 30.2% of total expenditure.
3. Loi sur la Nouvelle Organisation Territoriale de la République.
4. Observatoire des finances et de la gestion publique locales.

***Corresponding author:** Zoé Le Squeren, Email: zoe.lesqueren@univ-lille.fr

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Wathne, 2014; Parmigiani, 2007; Puranam, Gulati, & Bhattacharya, 2013), since it enables them to employ benchmarking strategies and to have better control over the opportunism of suppliers. Plural governance should therefore be considered as a distinct governance choice rather than an intermediate position on a make-or-buy continuum (Parmigiani, 2007). Some evidence of plural governance for public services has existed since the seminal work of Miranda and Lerner (1995), but the rationales behind plural strategies for public services remain understudied.

We conduct an empirical investigation of the rationales behind make-and-buy choices for public service delivery. More specifically, we investigate which city characteristics influence the likelihood of plural governance being used for a particular public service. Our analysis is based on a contractual perspective and is enriched by a resource-based view, both of which have mostly been developed in private settings. But the specificities of the public sector must be taken into account when studying public services (Rainey, 2009). Since public organizations operate in political environments, our analysis includes variables reflecting the political affiliation of elected officials. We formulate three hypotheses. First, we believe that since plural governance is adopted to enhance the efficiency of public service delivery (Brown & Potoski, 2003), it should be adopted by cities that suffer from high levels of fiscal stress. Second, since plural governance is considered to be a complex management system (Warner & Hefetz, 2008), it can only be handled by cities that have sufficient capabilities. Finally, plural sourcing can result from the alternation of political parties holding power in a city, since left-wing mayors prefer in-house provision for public services (Picazo-Tadeo, González-Gómez, Wanden-Berghe, & Ruiz-Villaverde, 2012), while right-wing administrations tend to favor externalization (Gradus, Dijkgraaf, & Wassenaar, 2014).

We use data for the French car park sector for our analysis: we analyze sourcing decisions for car park services in 97 cities in 2010. The car park sector is particularly relevant for studying plural governance because of the high degree of standardization of its infrastructure. The relevance and specificities of the sector are discussed in a dedicated subsection. Two samples are constructed in order to conduct both transaction- and city-level analyses. We use a multinomial logit to compare total internal provision, complete externalization, and plural sourcing.

Our results clearly indicate that plural governance is a distinct governance structure (rather than an intermediate alternative on a make-or-buy continuum), which may be preferred to total outsourcing and total in-house provision. Plural governance is adopted by both rich and indebted cities, indicating that it is used as a strategy for reducing the costs of service delivery by cities that have sufficient capabilities. This governance structure does not result from the alternation of political parties in charge of the city, indicating that the combination of internal and external provision is intentional and does not result from specific decisions taken by mayors of opposing political affiliations.

The 'Theory and hypotheses' section discusses the previous literature to build three hypotheses. The 'Sector and data' section presents the sector and the data. The 'Study of make-or-buy choices: Transaction-level sample' section contains preliminary transaction-level analysis of make-or-buy choices for car parks. As this first analysis does not enable us to study plural governance, the 'Study of plural governance: City-level sample' section proposes an analysis at the city level. Finally, the 'Conclusion, limitations, and future research' section concludes and identifies the main limitations of our analysis in order to propose avenues for future research.

Theory and hypotheses

In this theoretical section, we draw insights from contractual perspectives, which have mostly been conducted in private settings, and we highlight the specificities of the behavior of local governments. Strategic management scholars have recently shown a growing interest in public issues (Cabral, Mahoney, McGahan, & Potoski, 2019; Quelin, Kivleniece, & Lazzarini, 2017), as they recognize the complexity of interactions between public and private agents. They have adopted transaction cost and incomplete contract theories enriched with capability considerations to study public services and public–private interactions (Cabral, Lazzarini & De Azevedo, 2013; Quelin, Cabral, Lazzarini, & Kivleniece, 2019). The analysis of public actors' behavior and of public–private interactions can greatly benefit from the theoretical insights of the strategic management literature (Cabral, 2017). Fruitful studies have been conducted in private contexts to understand why plural governance is used, and they are of considerable importance in understanding this type of governance structure as a strategic behavior. However, local governments, and public actors more generally, have their own specificities and cannot be studied as private actors (Boyne, 2002). The aim of this section is therefore to build upon contractual perspectives with resource and political considerations in order to understand the strategic behavior of public entities, without ignoring their specificities.

Plural governance: Definition and theoretical perspectives

Plural sourcing can be defined as the simultaneous use of in-house provision and outsourcing for identical transactions. This make-and-buy choice has been seen in various contexts: in the franchising context, where franchisors decide to own some outlets while contracting with independent franchisees for

others (Bradach & Eccles, 1989); in private firms in various sectors, such as small manufacturing firms (Parmigiani, 2007) or industrial companies (Heide, 2003), where firms simultaneously use market contracting and vertical integration for the same transaction; and in public settings, where cities mix in-house provision and outsourcing to deliver public services (Miranda & Lerner, 1995; Warner & Hefetz, 2008).

This make-and-buy solution can appear puzzling from a make-or-buy perspective (Puranam et al., 2013). Since the seminal work of Coase (1937), the make-or-buy choice has been extensively studied, mostly through the lenses of transaction cost economics (Williamson, 1981, 1985) and the resource-based view of the firm (Barney, 1991; Teece, Pisano & Shuen, 1997). Transaction cost economics posits that the governance structure for a given transaction is chosen with respect to the characteristics of the transaction, most importantly asset specificity and uncertainty, as they determine the relative cost of recourse to the market. The resource-based view of the firm insists on the differences in capabilities between the focal firm and its competitors to explain make-or-buy decisions. Based on these premises, authors have also combined the two approaches to show that firms' capabilities and transaction costs both help to explain outsourcing decisions (Fabrizio, 2012; Silverman, 1999). Even though transaction costs and resource-based approaches have mostly been used to understand the boundaries of firms, these frameworks have also been used to study local government sourcing decisions. Using data on local public services in the United States, Brown and Potoski (2003) show that the probability of relying on in-house provision increases with the level of asset specificity. Similarly, Levin and Tadelis (2010) find that higher levels of contracting difficulties are associated with lower levels of externalization. Porcher (2016) uses French municipal data on the water sector to show that cities are more likely to use internal production when they have high production capabilities.

These theories have proved useful for understanding the make-or-buy decisions of firms and governments, but, at first glance, they do not help with understanding why an agent (i.e., with given capabilities) will simultaneously use externalization and vertical integration for identical transactions (i.e., with given characteristics). But does plural governance even exist? In other words, does plural sourcing really involve the adoption of a specific governance structure? Some authors, including Williamson (1985), have made efforts to show that once the heterogeneity of transactions is correctly measured, firms do not make and buy the same input (He & Nickerson, 2006). Krzeminska, Hoetker and Mellewigt (2013) call for a cautious definition of plural sourcing and warn scholars against a misunderstanding of make-and-buy strategies. They highlight that very similar transactions may not be identical and may actually differ in some characteristics, justifying the use of different governance structures.

The above-mentioned theoretical elements indicate that the inherent levels of asset specificity, uncertainty, and resources in transactions may explain the outsourcing decisions of municipalities. A careful transaction-level analysis should therefore precede any study of plural sourcing. These considerations justify the choice of the sector we analyze in this paper, as demonstrated in the 'Sector and data' section. The 'Study of make-or-buy choices: Transaction-level sample' section presents the results of a transaction-level examination of make-or-buy choices.

Plural governance and fiscal stress

Because of the widespread evidence of plural sourcing (Puranam et al., 2013), many authors have tried to understand the specific rationales behind make-and-buy strategies. In their early study of plural sourcing in franchising contexts, Bradach and Eccles (1989, p. 97) pledge that to understand plural forms, "the analytic focus must move from individual transactions to the broader architecture of control mechanisms." They show that firms may want to make and buy the same transaction because it creates competition between the two mechanisms. This competition leads to reduced transaction costs by establishing backward integration as a credible sanction in the case of opportunistic behavior from the external supplier (Dutta, Bergen, Heide, & John, 1995; Puranam et al., 2013).

Plural governance also helps to solve information asymmetry problems between buyers and suppliers (Heide, 2003; Mayer & Salomon, 2006). By giving information to the focal firm, it enables benchmarking strategies. Kidwell and Nygaard (2011) prove that company-owned units provide franchisors with useful information for benchmarking the performance of independent franchisees. Controlling opportunism by outside suppliers is also central to the analysis of Heide et al. (2014), as they show that monitoring activities are efficient only in the case of plural sourcing, because it gives focal firms valuable information and the opportunity to control external suppliers. On a different but complementary note, Parmigiani (2007) shows that partial externalization can have positive effects on the performance of internal units, as the performance of outside suppliers can be used to benchmark internal production. These findings suggest that plural governance is a distinct governance structure, rather than an intermediate position on the make-or-buy continuum (Parmigiani, 2007). In other words, firms can take advantage of the combination of vertical integration and outsourcing for the same transaction.

Is this also the case for local governments? If plural governance enables costs to decrease, then it should be particularly important for the management of public services. While there is some evidence of plural governance in public settings, it is scarcer. Miranda and Lerner (1995) were the first to study arrangements that combine external delivery and in-house

production for local public services in the United States. They find that these arrangements are cost effective as they are associated with lower levels of expenditure. More recently, Brown and Potoski (2003) and Hefetz, Warner and Vigoda-Gadot (2014) studied plural governance for local public services in the United States, and in multi-service settings. They find that services for which quality is more difficult to measure (Brown & Potoski, 2003), and that are characterized by high levels of asset specificity or greater management difficulties (Hefetz et al., 2014), are more often produced using plural governance. The make-and-buy solution is considered to be profitable as it enables cities to judge the performance and quality of a supplier against their own (Brown & Potoski, 2003).

In their meta-analyses, Bel and Fageda (2009, 2017) indeed show that cities' sourcing decisions reflect their search for economic efficiency, which is particularly true for cities with high levels of fiscal stress. Cities with high debt burdens are more likely to outsource public services in order to cut costs (Levin & Tadelis, 2010), because fiscal stress creates incentives for governments to be more efficient in service production (Brown & Potoski, 2003). This is in line with the findings of the seminal article by Hart, Shleifer and Vishny (1997), who show that contracting out public services leads to cost reductions, even if it is at the expense of service quality. More generally, this idea that externalization leads to lower costs is at the core of the ancient New Public Management approach (Hood, 1991), where governments are encouraged to promote competition and consumer responsiveness in service delivery, and to import management rules from the private sector.

This reasoning can be extended to plural governance. As explained earlier, if plural governance is used in strategies to increase the economic efficiency of public service provision, then it should be adopted by cities with high fiscal stress, which can be measured by the level of local debt (Levin & Taldelis, 2010). We therefore hypothesize:

Hypothesis 1: *The likelihood of adopting plural governance increases with the level of debt.*

Plural governance and capabilities

If managers indeed consider economic efficiency factors into their make-or-buy decisions, capabilities also play a significant role in explaining organizational boundaries (Dumez & Jeunemaître, 2010). Researchers have therefore extended contract theories to integrate capability and resource considerations into the study of the outsourcing decisions of firms and cities. A distinction can be made between production capabilities (which enable low production costs) and contracting capabilities (which enable the low cost of contracting); production capabilities enhance contracting capabilities (Fabrizio, 2012; Mayer & Salomon, 2006). Production capabilities provide the focal firm with useful information that allows contracting costs to be reduced. These contracting costs are due to adverse selection problems (Akerlof, 1978), contract maladaptation, and monitoring difficulties (Mayer & Salomon, 2006). Klein, Mahoney, McGahan, and Pitelis (2013) advocate that the capabilities approach is particularly useful for studying public organizations. Studying the case of a public buyer, Cabral (2017, p. 828) defines contracting-management capabilities as "the abilities to procure goods efficiently in the market in terms of setting up a bid, selecting appropriate suppliers, and negotiating contracts. During the contract execution phase, contract-management capabilities refer to the ability to manage relationships with other suppliers and evaluate contractor behavior in pursuit of the public interest." Internal production can certainly improve these abilities as it gives valuable information to help reduce *ex ante* and *ex post* contracting costs.

However, plural sourcing can also be thought of as a complex management system (Warner & Hefetz, 2008). Using information generated by internal provision to better manage outsourcing contracts requires a sufficient number of qualified public agents. But as underlined by Cabral (2017), public administrations often suffer from constraints such as budget limitations. Plural governance can therefore be handled only by the cities that have the necessary capabilities (Porcher, 2016), in other words large and rich ones (Brown & Potoski, 2003; Warner & Hefetz, 2008). Cities with more professional managers are better able to manage service delivery, and they are more aware of the benefits of plural delivery because they know the importance of market management (Warner & Hefetz, 2008). Following this reasoning, large municipalities are more likely to resort to plural governance, because they have more professional managers. For example, in small cities, a single municipal team usually handles the management of every local public service, while large cities have a team devoted to the management of each public service. Income per capita is also a good measure of cities' capabilities because cities with healthier citizens are more able to raise revenue through taxation. Those cities therefore have more resources, that is revenues and staff, to build capabilities. More specifically, Brown and Potoski (2003) show that cities with high levels of revenue per capita are more likely to invest in contracting-management capacity. The authors identify three components of contracting-management capacity: the capacity to determine whether to make or buy the service; the capacity to bid the contract, select the provider, and negotiate the contract; and the capacity to evaluate the contractor's performance.

In summary, plural governance requires a complex management system, large cities tend to have more professional managers, and rich cities are more likely to invest in contracting-management capabilities. These elements lead to the following hypothesis:

Hypothesis 2: *The likelihood of adopting plural governance increases with population and income per capita.*

Plural governance and political factors

The specificities of the public sector must not be ignored when studying the behavior of public actors. Boyne (2002) contends that the differences between public and private sectors must not be overstated, but he still shows that public organizations suffer from more bureaucracy. Scholars have therefore examined the specificities of public contracting. Spiller (2008) and Moszoro, Spiller and Stolorz (2016) show that public contracting is more rigid than private contracting, because the partners are scrutinized by citizens and potential political competitors. Beuve, Moszoro, and Saussier (2019) further empirically find that the rigidity of public contracts increases with the degree of political competition.

Political factors should therefore not be omitted when studying the outsourcing strategies of local governments. First of all, citizens may not care only about economic outcomes, such as price and quality, when it comes to some public activities (Jia, 2018). Public employees and unions have been shown to have a preference for public provision of local public services (Levin & Tadelis, 2010; Warner & Hebdon, 2001), whereas industrial users and high-income households prefer externalization (Bel & Fageda, 2009; Warner & Hefetz, 2002). While these dimensions are unlikely to explain plural governance directly, empirical investigation must control for the presence of interest groups who are in favor (or against) to the externalization of public services to the private sector.

Moreover, although citizens do not directly participate in make-or-buy choices for public services, their electoral choices may reflect their preferences. Hence, the political affiliation of mayors has been shown to have an influence on their sourcing decisions. In Spain, Picazo-Tadeo et al. (2012) find that left-wing parties reject outsourcing the management of water services to private companies. In Sweden, Sundell and Lapuente (2012) show that center-right governments outsource public services more than other governments. Gradus et al. (2014), using Dutch data, show that a shift to the market in the case of refuse collection is more likely for right-wing governments.

How can plural sourcing result from political factors? Since left-wing cities seem to have a preference for the vertical integration of public services (Picazo-Tadeo et al., 2012) and right-wing parties favor externalization to private firms (Gradus et al., 2014), plural sourcing may result from political changes at the head of the city. Beuve and Le Squeren (2016) show that once right-wing mayors have outsourced some public services, it is very difficult for future left-wing administrations to return them to public provision. Indeed, externalization often involves long-term contracts with private firms that cannot be terminated by future administrations. Moreover, Beuve and Le Squeren (2016) show that governments can lose their ability to manage public services once they have been outsourced to the private sector. They show that a city that has always been governed by left-wing officials is more likely to use in-house provision for a public service, whereas a city that has always had right-wing governments is more likely to completely externalize the service. We therefore hypothesize that the past alternation of political parties in power can lead to plural governance at time *t*. This reasoning leads to the final hypothesis:

Hypothesis 3: *The likelihood of adopting plural governance increases with the number of changes of political affiliation at the head of the city.*

The three hypotheses formulated in this section are empirically tested in 'Study of plural governance: City-level sample' section. In the next section, we describe the sector and data employed.

Sector and data

Local governments and the management of car parks

We use data on the management of car parks, using a sample of French cities of more than 20,000 inhabitants. This sector is particularly appropriate for investigating plural governance for public services for four reasons.

First, the management of car parks fulfills the necessary condition of being a public service, for which cities are responsible. Although cities must retain ownership of the infrastructure for each car park, they can opt for either internal provision or for externalization. Externalization involves agreeing long-term contracts with private firms to build and/or operate car park infrastructure. Nowadays, most car park infrastructures have already been constructed, and contracts usually only involve the management of parking services. In this case, the average length of these operating contracts is 18.2 years (Beuve et al., 2019). However, substantial work is often needed to renovate the infrastructure, and in such cases, the average length of contracts is 30 years (Beuve et al., 2019).

Second, municipalities can outsource the management of car parks when they want to, as there are a high number of potential suppliers. Indeed, the French car park sector is characterized by a growing level of competition between French firms (local operators as well as larger companies) and, more recently, national and foreign operators (Baffray & Gattet, 2009). In 2011, 70% of French car parks were managed through outsourced contracts.[5]

Third, this sector is particularly convenient for conducting transaction-level studies and for identifying cases of plural

[5] Data from the French National Federation of Parking Activities (FNMS).

governance. We define one transaction as one car park infrastructure. For each transaction (i.e., for each car park), a city makes a make-or-buy decision. At the city-level, plural outsourcing happens when some infrastructures are managed by external firms, while others are operated in-house. In contrast, cities opt for complete externalization when each car park is outsourced, and for complete in-house provision when each car park is managed in-house.

Finally, and more importantly, car parks are a very standard type of infrastructure. The management of car parks is a standardized service, and contracting parties are relatively free from any bilateral dependency when a contract expires. Hence, when an outsourcing contract expires, a municipality chooses to renew the contract with the incumbent provider in 60% of cases (Beuve, Le Lannier, & Le Squeren, 2018). This renewal rate is low compared to other sectors such as urban public transport (≈90%) (Amaral, Saussier, & Yvrande-Billon, 2009), or the water sector (≈90%) (Guérin-Schneider & Lorrain, 2003). Brown and Potoski (2003) also find that car park services are among the less specific services provided by United States cities. Of course, the characteristics of the infrastructures can differ across cities: car park infrastructures may be more complex to build and manage in a very dense environment than in a medium-sized city, which justifies different make-or-buy decisions. However, it is difficult to conceive that differences between infrastructures in a given city can justify different choices. This assertion will nonetheless be discussed and empirically investigated in 'Study of make-or-buy choices: Transaction-level sample' section.

Data sources

Our empirical investigation uses data from a survey conducted by CEREMA[6] into the management practices of cities regarding off-street and on-street car parking. The main survey we use reflects the situation on December 31, 2010. The questionnaire was sent to 455 French cities with more than 20,000 inhabitants. At least one question was answered by 196 municipalities, which represents a response rate of about 43%. From this sample, we chose to keep only the answers relating to off-street parking, and eliminate the information about on-street parking, because the characteristics of the management of on-street and off-street parking are likely to differ. In addition, in the final sample, we only kept the cities that administered at least two car parks, as they would otherwise not be able to opt for the plural alternative.

[6] The CEREMA (Centre d'Études et d'expertise sur les Risques, l'Environnement, la Mobilité et l'Aménagement) is a French public administration, which is under the supervision of two ministries: the Ministry of Ecology and Sustainable Development and the Ministry of Transportation.

We used these data to construct two datasets: the first allowed us to conduct transaction-level analyses, and the second city-level analyses. The first sample (one observation per car park) contains 345 observations, representing 83 cities (hereafter referred to as the 'transaction-level sample'). The second dataset ('city-level sample'), with one observation per city, contains 97 observations. The city-level sample contains information about more cities because it uses less information about car park characteristics, and therefore has less missing data. The descriptive statistics from the two samples can be found in Table 1.

In order to construct our set of independent variables, we needed information about the characteristics of the municipalities, which we obtained from the French National Institute of Statistics and Economic Studies (INSEE) and from the Center for Socio-Political Data (CDSP) for the political variables.

The next section presents the variables, empirical strategy, and results of the make-or-buy analysis, conducted at the transaction level.

Study of make-or-buy choices: Transaction-level sample

As explained in the theory section, transaction costs theory and resource-based view of the firm focus on make-or-buy choices for specific transactions. Before aggregating data at the city level to observe plural governance, specific make-or-buy choices should therefore be examined. Could it be the case that, in a given city, make-or-buy choices for car park infrastructures depend on transaction-level characteristics? Let us recall that we do not expect car park characteristics to differ substantially in a given city. This sector was chosen because infrastructures are relatively standard. This first empirical analysis must therefore be seen as a preliminary check of make-or-buy choices at the transaction level, before studying plural governance at the city level in 'Study of plural governance: City-level sample' section.

In order to investigate this preliminary question, we constructed one dependent and four independent variables using data from the survey conducted by CEREMA.

Variables

The dependent variable is a dummy variable, which equals 1 when the car park infrastructure is outsourced to a private company. No plural alternative is possible in the transaction-level sample, since for each car park, the city can either provide the service in house or go to the market.

Independent variables should reflect the aforementioned transaction costs and resource-based views. Service characteristics are usually measured by surveys by authors who study multi-service settings (Brown & Potoski, 2003; Levin & Tadelis,

Table 1. Descriptive statistics

	N	Mean	Std. dev.	Min.	Max.
Transaction-level sample					
Outsourced	345	0.429	0.496	0	1
Number of slots	345	387.530	285.110	20	2,099
Age (in months)	345	203.725	146.259	1	568
City center	345	0.464	0.499	0	1
Potential attendance	345	3.377	1.132	0	6
City-level sample					
MNL 1: categories of the dependent variable[a]					
Private	97	0.351	0.480	0	1
Public	97	0.433	0.498	0	1
Plural	97	0.217	0.414	0	1
MNL 2: categories of the dependent variable[b]					
Private	97	0.464	0.501	0	1
Public	97	0.361	0.483	0	1
Plural	97	0.175	0.382	0	1
MNL 3: categories of the dependent variable[c]					
Private	97	0.351	0.480	0	1
Public	97	0.361	0.483	0	1
Semi-public	97	0.062	0.242	0	1
Plural	97	0.227	0.421	0	1
Independent variables					
Mean debt *per capita* (2006–2010)	97	1.161	0.537	0.027	2.786
Mean population (2006–2010)	97	96.522	115.628	18.883	848.837
Mean income *per capita* (2006–2010)	97	12.179	3.728	6.850	41.750
Number of changes of political affiliation	97	0.505	0.879	0	5
Mean density (2006–2010)	97	3.672	4.213	0.310	25.145
Mean unemployment (2006–2010)	97	8.205	1.836	4.720	13.320
Number of car parks	97	6.268	5.177	2	29

[a]For the first multinomial logit (MNL), long-term contracts with public companies are considered as a 'public' alternative.
[b]For the second MNL, public companies are included in the 'private' alternative.
[c]In the third version of MNL, public companies are considered as a distinct category. This categorization is discussed in 'Study of plural governance: City-level sample' section.

2010). In this study, we choose to analyze one single public service, car parks, because we believe transaction characteristics are very similar between car parks in a given city. However, it is possible that some dimensions differ between transactions. In that vein, Porcher (2016) shows that transaction costs inherent to water services differ according to the type of water and the type of water treatment. In the following lines, we therefore describe the dimensions of car parks that are likely to influence transaction costs and capabilities needed to manage the infrastructures.

Four key characteristics may influence the make-or-buy choice for a given car park. The first is the size of the infrastructure: in our sample, the number of spaces in the car parks vary from 20 to more than 2,000 (see Table 1). From a transaction costs perspective, resorting to contracts with private firms decreases with asset specificity, as the latter increases the costs associated with externalization. A larger infrastructure may require more investment in specific assets, thereby exacerbating hold-up problems. Cities should therefore opt for in-house provision for larger infrastructures. However, private firms have developed the expertise to deal with large infrastructures, and their capabilities may be needed to operate these car parks. Hence, it is possible that the size of a given car park could have a positive effect on the probability of outsourcing in a resource-based view.

The second and third independent variables, *Age* and *City center*, measure the age of the infrastructure and identify car parks which are located in city centers. Indeed, older car parks and those located in denser areas may need larger and more specific investment, increasing the probability of them being provided in-house in a transaction costs view. But cities may also want to benefit from the expertise of private sector firms for these more complex infrastructures, which increases the probability of outsourcing in a resource-based view.

Table 2. Definition, source and expected sign of independent variables (transaction-level analysis)

	Definition	Source	*N*	Expected sign[a]
Number of slots	Number of spaces in the infrastructure	CEREMA	345	−(TCE) or + (RBV)
Age (in months)	Age of the infrastructure (in months)	CEREMA	345	−(TCE) or + (RBV)
City center	Dummy variable identifying infrastructures, which are located in city centers	CEREMA	345	−(TCE) or + (RBV)
Potential attendance	Score of potential attendance ranging from 0 (very low) to 6 (very high)	CEREMA	345	−(RBV) or + (TCE)

[a]TCE stands for transaction costs economics, and RBV for resource-based view. The dependent variable is a dummy, which equals 1 if the car park is outsourced.

Finally, *Potential attendance* is a score that varies from 0 to 6. In the CEREMA questionnaire, cities were asked to indicate whether (1) shops, (2) residents, (3) offices, (4) cultural centers, (5) train stations, or (6) other factors generate demand for parking activities in the neighborhood of each car park. The score *Potential attendance* equals 0 when none of the six items are present around the car park, and it equals 6 when all six items potentially generate demand. This variable is central in a transaction-level analysis, as it is a good proxy for demand uncertainty. In line with transaction cost arguments, cities may prefer in-house provision when uncertainty is high (i.e., when potential attendance is low). Conversely, cities may resort to outsourcing when potential attendance is low, as private firms may be better able to deal with uncertainty.

Table 2 presents the definition, source, and expected sign of independent variables. Their influence on the probability of outsourcing a given car park is estimated using a Probit model with and without city fixed effects. City fixed effects enable controlling for city-specific characteristics, and thus for investigating the influence of service characteristics on make-or-buy decisions in a given city.

Results

The results of the transaction-level analysis are presented in Table 3.

The results of both models (with and without city fixed effects) indicate a low explanatory power of car park characteristics on the probability of outsourcing the service. Model 2, in particular, indicates that in a given city, the size, age, and geographical location of the infrastructure have no influence on the make-or-buy choice. It is only potential attendance that has a positive influence on the probability of outsourcing: in line with the transaction cost argument, public authorities are more willing to turn to private firms to manage transactions which are characterized by lower levels of uncertainty (i.e., higher levels of potential attendance). When potential attendance is high, outsourcing to a private firm may be easier because there is a higher number of potential suppliers and because externalization contracts are easier to write.

According to the marginal effects displayed in the last column in Table 3, an additional source of potential attendance leads to an increase in the probability of outsourcing of 9.5%. However, the Wald test provides low support for this first specification, as the null hypothesis (all the coefficients are simultaneously equal to zero) cannot be rejected with the usual level of confidence of 95%. Overall, the results indicate that even if levels of uncertainty seem to play a role in the outsourcing decision, make-or-buy choices are poorly explained by transaction-level characteristics in the car park sector. This finding is in line with previous studies, which found that car park services exhibit low levels of specificity (Brown & Potoski, 2003). The standard nature of the car park infrastructure motivated us to choose this sector for our study, as it enables us to move from a transaction- to a city-level analysis in order to study plural governance.

Study of plural governance: City-level sample

Aggregation at the city level is necessary to observe plural sourcing and to study the rationales behind plural governance by testing Hypotheses 1–3.

Variables and empirical strategy

The empirical strategy must enable to compare the plural alternative to the two other polar solutions (complete internalization and complete externalization). As explained by Parmigiani (2007), the best way to model this decision is to use a multinomial logit, because this model allows to make pairwise comparisons of the sourcing modes, rather than considering a make-or-buy continuum.

Dependent variables

We estimate three models, each referring to a different construction of the dependent variable. Until now, a city's choice about the management of its car parks has been presented

Table 3. Results of the transaction-level of analysis

	Model 1		Model 2	
	Probit coefficients	Marginal effects	FE probit coefficients	Marginal effects
Number of spaces	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Age (in months)	−0.000	−0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.001)	(0.000)
City center	−0.075	−0.029	−0.082	−0.031
	(0.143)	(0.055)	(0.210)	(0.080)
Potential attendance	0.174***	0.067***	0.251**	0.095***
	(0.064)	(0.024)	(0.099)	(0.035)
Constant	−0.777***		−1.010***	
	(0.238)		(0.362)	
City fixed effects	No		Yes (83 cities)	
N	345		345	
Wald χ^2	7.930		7.920	
P-value for Wald test	0.094		0.095	
Pseudo-R^2	0.017			

Note: Significance levels: ***$p < 0.01$, **$p < 0.05$ *$p < 0.1$. Transaction-level sample (one observation per car park). In both models, the dependent variable is a dummy, which equals 1 if the car park is outsourced, 0 otherwise. Unlike Model 1, Model 2 includes city fixed effects.

as dichotomous: make or buy. But the choice is slightly more complex, as there are several ways to 'buy': a city can conclude contracts with public or private firms. There are, therefore, three distinct alternatives for each car park: in-house provision, outsourcing to a public company, or outsourcing to a private firm. In the survey, each city had to indicate its mode of governance for each car park. Therefore, we know, for each municipality, whether it (1) completely externalizes its car parks (i.e., every infrastructure is outsourced), (2) completely internalizes its car parks (i.e., every infrastructure is provided in house), or (3) uses plural sourcing (i.e., some infrastructures are outsourced while others are managed in house). Each dependent variable is therefore a class variable, which identifies the mode of provision for each city, in 2010.

We construct three dependent variables, each of which refers to a different categorization of the externalization to public companies. As noted by Levin and Tadelis (2010) and Brown and Potoski (2003), externalization to public companies may not incur the same trade-offs as externalization to private entities. In French law, public firms are defined as companies for which the principal shareholder is one or several public entities.[7] When a city externalizes a public service to a public company, it ensures that the public interest is taken into account in the objectives of the firm. However, public firms are supposed to be treated exactly as private entities when a call for tenders is made, and the control of the city over the public service once it has been outsourced, even to a public company, is not as strong as in the case of internal provision.

As there is no clear-cut answer on how to treat public companies in the empirical strategy, we proceed as follows. In the first estimation, we consider externalization to public companies to be the same as in-house provision; in the second estimation, we consider externalization to public companies as private provision (i.e., as externalization to private firms); and in the last estimation, we consider externalization to public companies as a distinct category. The descriptive statistics in Table 1 show that around 6% of the cities in the sample externalize every car park to public companies; 35% of the cities externalize every car park to private companies; 36% opt for complete in-house provision; and a little less than 23% use plural governance (i.e., a mix of at least two of the three preceding modes of sourcing).

Independent variables

The set of independent variables must be able to take city specificities into account, and to test for Hypotheses 1–3. Each of the following variables (except the political variable) is averaged over the 2006–2010 period. The observed governance mode in 2010 is the result of choices made in the past, and the independent variables should not be measured in 2010. Moreover, the use of lagged variables may attenuate endogeneity issues.[8]

[7] The words 'public companies' refer to the French 'Sociétés d'Économie Mixte (SEM),' which can also be translated as 'semi-public companies.' In such firms, there must be at least one private company among the shareholders, and the participation of public entities cannot exceed 85% of the capital.

[8] Potential endogeneity problems are discussed with results hereafter.

Table 4. Definition, source, and expected sign of independent variables (city-level analysis)

	Definition	Source	*N*	Expected sign[a]	Hypothesis
Mean debt *per capita* (2006–2010)	Mean debt of the city, in thousands of euros per inhabitant	INSEE	97	+	H1
Mean population (2006–2010)	Mean population of the city, in thousands of inhabitants	INSEE	97	+	H2
Mean income *per capita* (2006–2010)	Mean income per capita of the city, in thousands of euros per inhabitant	INSEE	97	+	H2
Number of changes of political affiliation	Number of changes of political affiliation of the city between 1989 and 2010	CDSP	97	+	H3
Mean density (2006–2010)	Mean density of the city in thousands of inhabitants per square kilometer	INSEE	97		Control
Mean unemployment (2006–2010)	Mean unemployment of the city	INSEE	97		Control
Number of car parks	Number of car park infrastructures in the city	CEREMA	97		Control

[a]Expected sign on the probability of plural governance.

The variable *Mean debt*, which measures the mean level of debt per capita in thousands of euros per inhabitant, is used to test for Hypothesis 1.

Mean levels of population (in thousands of inhabitants) and of income per capita (in thousands of euros per inhabitant) are used to test for Hypothesis 2.

The number of changes of political affiliation in a given city allows to test for Hypothesis 3. This variable is measured from 1989 to 2010 (municipal elections took place in France in 1989, 1995, 2001, and 2008). In our sample, it varies from 0 to 5, which indicates that a change in the mayor can take place outside of elections (e.g., when the incumbent is appointed as a minister or dies in office).

The analysis includes three control variables: *Mean Density*, *Mean Unemployment*, and *Number of car parks*.

It is important to include a measure for density (which is measured in thousands of inhabitants per square kilometer) in this empirical investigation. First, parking policies are more challenging and the infrastructure may be more complex to build and operate in dense areas. Second, the markets are more likely to be competitive in densely populated cities (Brown & Potoski, 2003), and a competitive market is necessary to benefit from the cost savings involved in externalization (Sclar, 2001; Williamson, 1976). We conclude that in very dense cities, which benefit from fierce competition between suppliers, outsourcing is more likely to lead to cost savings, so plural governance will be less necessary for saving costs.

The level of unemployment allows us to control for the presence of interest groups that are against externalization. Empirical studies usually include measures for unionized (public) workers, who are supposed to prefer in-house production (Levin & Tadelis, 2010; Warner & Hebdon, 2001), but, as figures for unionized workers are not available in France, we use unemployment, which is a proxy for the presence of low-income interest groups which prefer public provision (Bel & Fageda, 2009). *Mean Unemployment* is the only variable that cannot be measured at the municipal level; French national government uses the term 'employment areas,' which include several municipalities, to measure employment at the local level (a map of employment areas is available upon request). Therefore, this variable is an imperfect proxy for municipal unemployment. The presence of high-income households in favor of externalization is captured by the variable *Mean income per capita*.

Finally, we have to control for the number of car parks in the city, as plural sourcing is more likely to be used by cities that have a higher number of car parks.

Table 4 summarizes the expected signs for the independent variables. The next subsection discusses the results.

Results

Tables 5–7 present the results for the analysis of plural governance. In each table, the left-hand column presents the coefficients of multinomial logits, which enable pairwise comparisons. For instance, in Table 5, the coefficients indicate that the more indebted cities rely less not only on complete externalization than on plural governance (column 1), but also on complete in-house provision than on plural governance (column 2). While the sign and significance of multinomial logit coefficients can be interpreted, their value cannot. Hence, the three right-hand side coefficients display marginal effects to estimate effect size. For example, the first coefficient in the fourth column of Table 5 indicates that an increase in the debt of 1,000 euros per inhabitant increases the probability of plural governance by 20%.

As explained earlier, the three estimates differ according to the construction of the dependent variable: externalization to public companies is considered as in-house provision in Table 5, as externalization to private companies in Table 6, and as a distinct alternative in Table 7.

Table 5. Multinomial logit 1: considering the externalization to public companies as in-house provision

	Private versus plural	Public versus plural	Private	Plural	Public
	Multinomial logit (MNL)		Marginal effects at mean (MEM)		
Mean debt	−1.456**	−1.005**	−0.199	0.200**	−0.001
	(0.579)	(0.488)	(0.128)	(0.078)	(0.105)
Mean population	−0.008	−0.029**	0.003	0.003**	−0.005***
	(0.008)	(0.011)	(0.002)	(0.001)	(0.002)
Mean income per capita	−0.202***	−0.362**	0.008	0.044***	−0.051**
	(0.069)	(0.146)	(0.018)	(0.014)	(0.026)
Changes of affiliation	0.203	−0.249	0.090	0.000	−0.090
	(0.367)	(0.419)	(0.067)	(0.057)	(0.070)
Mean density	0.187**	0.087	0.032***	−0.023	−0.010
	(0.081)	(0.097)	(0.011)	(0.014)	(0.014)
Mean unemployment	−0.006	−0.017	0.001	0.002	−0.003
	(0.188)	(0.195)	(0.030)	(0.029)	(0.030)
Number of car parks	−0.150	0.055	−0.046**	0.009	0.036
	(0.113)	(0.161)	(0.022)	(0.019)	(0.029)
Constant	5.874***	8.527***			
	(2.080)	(2.778)			
N	97	97	97	97	97
Pseudo-R^2	0.221	0.221			

Note: Significance levels: ***$p < 0.01$, **$p < 0.05$ *$p < 0.1$. Standard errors clustered at the departmental level in parenthesis. This table presents the result of a multinomial logit, where the dependent variable is the chosen method of management of car park services in 2010 (in-house provision, plural provision, or long-term contracts with the private sector). The 'plural' alternative is the base category and corresponds to situations where the municipality chooses to use both in-house provision and long-term contracts. The externalization to public companies is considered as in-house provision. The two left-hand columns present the coefficients of the MNL, while the three right-hand columns display the marginal effects at mean.

All three specifications present high values of pseudo R^2,[9] indicating that the model enables to accurately understand the governance choices of cities for car park services. The robustness of our results across the three different specifications further increases confidence in the model. Interestingly, pseudo R^2 is slightly higher in Table 7, indicating that using public companies should be considered as a distinct alternative. However, the sign and significance of multinomial logit coefficients are relatively comparable in columns 1, 2, and 3 of Table 7, which indicates that the trade-offs are not fundamentally different when we oppose plural to complete private provision (column 1), to complete externalization to public companies (column 2), or to complete in-house provision (column 3). This suggests that the important issue is to combine different structures, and that externalization to public companies is not an alternative to plural governance. As previously mentioned, the use of public companies could provide the benefits of externalization while ensuring that the public interest is taken into account. However, it may not improve the efficiency of public service delivery as it does not enable benchmarking strategies if not associated with another governance structure.

Our results do not indicate that externalization increases with the level of debt, but rather that, in indebted cities, plural sourcing is favored over both in-house provision and contracting out. The size of the effect is not trivial: across specifications, an increase in debt of 1,000 euros per inhabitant increases the probability of plural governance by 20% (Table 5) to 24% (Table 7). Externalization may indeed replace one problem (public sector inefficiency) with another (opportunism of the contracting partner), and plural governance can then be used as a way to control for supplier opportunism. Finally, we should point out that endogeneity issues are mitigated by our single service approach. While we might claim that the governance choices for public services influence levels of debt, which may, of course, be true, the influence of the governance structure of one public service certainly has a moderate impact on the overall level of debt of a municipality. Moreover, if anything, cities that use plural strategies should have lower levels of debt, which can only attenuate the size of the estimated coefficients. Overall, our results therefore provide strong support for Hypothesis 1.

Plural governance is used by richer, and to a lesser extent, larger cities. While a per capita income increase of 1,000 euros

[9] Values of 0.2–0.4 for pseudo R^2 represent an excellent model fit (Hensher & Johnson, 2018).

Table 6. Multinomial logit 2: Considering the externalization to public companies as private provision

	Private versus plural	Public versus plural	Private	Plural	Public
	Multinomial logit (MNL)		Marginal effects at mean (MEM)		
Mean debt	−1.976***	−1.138**	−0.307**	0.228***	0.079
	(0.575)	(0.470)	(0.129)	(0.073)	(0.093)
Mean population	0.001	−0.025**	0.004***	0.001*	−0.005***
	(0.003)	(0.010)	(0.001)	(0.001)	(0.001)
Mean income per capita	−0.218***	−0.288**	−0.010	0.031***	−0.021
	(0.066)	(0.128)	(0.017)	(0.009)	(0.018)
Changes of affiliation	0.241	−0.226	0.090	−0.014	−0.075
	(0.400)	(0.453)	(0.068)	(0.050)	(0.058)
Mean density	0.179**	0.074	0.032**	−0.020	−0.012
	(0.085)	(0.103)	(0.013)	(0.012)	(0.013)
Mean unemployment	0.001	−0.104	0.015	0.004	−0.019
	(0.207)	(0.193)	(0.036)	(0.025)	(0.025)
Number of car parks	−0.192**	−0.076	−0.035**	0.021**	0.014
	(0.082)	(0.119)	(0.016)	(0.011)	(0.017)
Constant	6.647***	8.859***			
	(2.179)	(2.933)			
N	97	97	97	97	97
Pseudo-R^2	0.252	0.252			

Note: Significance levels: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Standard errors clustered at the departmental level in parenthesis. This table presents the result of a multinomial logit, where the dependent variable is the chosen method of management of car park services in 2010 (in-house provision, plural provision, or long-term contracts with the private sector). The 'plural' alternative is the base category and corresponds to situations where the municipality chooses to use both in-house provision and long-term contracts. The externalization to public companies is considered as outsourcing. The two left-hand columns present the coefficients of the MNL, while the three right-hand columns display the marginal effects at mean.

increases the probability of plural governance by 3.1% (Table 6) to 4.7% (Table 7), the influence of the *Mean population* variable is significant but close to zero. It is useful to recall that the *Mean income per capita* variable might capture the supposed preferences of high-income households for privatization. However, this does not seem to be the case as high-income cities also favor plural sourcing over complete externalization. The results thus suggest that plural governance is adopted by cities that have sufficient capabilities, that is large and rich ones (Hypothesis 2). However, the size of the effect is small, indicating either that capabilities do not play a large role in plural governance decisions or that the two variables do not correctly measure cities' capabilities.

Hypothesis 3 is not supported by the results, and plural governance does not seem to result from political changes at the head of the city. Political effects were also tested in two other ways: using a dummy that identifies the cities that have had at least one change in political affiliation (instead of a number of changes), and with a finer distinction of political parties instead of a simple left-or-right dichotomy. The coefficients associated with political variables are never significant across specifications (tables of results are available upon request). The results, by dismissing Hypothesis 3, provide stronger support for Hypothesis 1: plural sourcing of public services is not the result of 'historical accidents,' that is different decisions taken by different mayors. Rather, it appears to be a deliberate choice for improving the economic efficiency of public service delivery.

Interestingly, denser cities rely more on complete externalization than on plural sourcing. Even if the result is rather small (an increase of 1,000 inhabitants per square kilometer results in a 3.2% increase in the probability of outsourcing, see Tables 5 and 6), *Mean density* still plays a significant role. The transaction-level analysis has shown that externalization is more likely when uncertainty is low (Table 3), and, as underlined before, dense cities face more demand for parking services. They are, therefore, more likely to benefit from externalization, because the supplier market is more competitive. Thus, there is less of a need for plural governance to employ benchmarking strategies in such municipalities, and complete externalization is more likely to reduce the cost of service delivery.

Unemployment does not seem to play a role in sourcing decisions. This may be linked to the fact that citizens' sensitivity for car park services is low (Levin & Tadelis, 2010), which is in line with the previously discussed results on the *Mean*

Table 7. Multinomial logit 3: considering the externalization to public companies as a distinct alternative

	Private versus plural	Public comp. versus plural	Public versus plural	Private	Plural	Public comp.	Public
	Multinomial logit (MNL)			Marginal effects at mean (MEM)			
Mean debt	−1.562***	−2.358**	−0.955**	−0.224*	0.241***	−0.054	0.037
	(0.604)	(1.013)	(0.471)	(0.136)	(0.089)	(0.042)	(0.088)
Mean population	−0.007	−0.019	−0.032***	0.003*	0.003**	−0.000	−0.005***
	(0.007)	(0.013)	(0.011)	(0.002)	(0.001)	(0.000)	(0.001)
Mean income per capita	−0.214***	−0.698***	−0.327**	0.001	0.047***	−0.021	−0.027
	(0.073)	(0.210)	(0.138)	(0.018)	(0.014)	(0.015)	(0.020)
Changes of affiliation	0.143	−0.245	−0.340	0.082	0.005	−0.009	−0.078
	(0.346)	(0.588)	(0.410)	(0.068)	(0.056)	(0.019)	(0.060)
Mean density	0.215**	0.193**	0.112	0.036***	−0.031*	0.002	-0.007
	(0.098)	(0.090)	(0.114)	(0.013)	(0.017)	(0.003)	(0.013)
Mean unemployment	−0.022	0.124	−0.094	0.003	0.006	0.007	−0.016
	(0.205)	(0.374)	(0.211)	(0.033)	(0.033)	(0.011)	(0.026)
Number of car parks	−0.207*	0.011	−0.056	−0.045**	0.025	0.005	0.015
	(0.107)	(0.173)	(0.131)	(0.022)	(0.017)	(0.007)	(0.019)
Constant	6.502***	9.820**	9.215***				
	(2.298)	(4.131)	(3.021)				
N	97	97	97	97	97	97	97
Pseudo-R^2	0.254	0.254	0.254				

Note: Significance levels: ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Standard errors clustered at the departmental level in parenthesis. This table presents the result of a multinomial logit, where the dependent variable is the chosen method of management of car park services in 2010 (in-house provision, long-term contracts with public companies, plural provision, or long-term contracts with the private sector). The 'plural' alternative is the base category and corresponds to situations where the municipality chooses (1) to use both in-house provision and contracts with private companies, (2) to use both in-house provision and contracts with public companies, or (3) to use both private contracts and contracts with public companies. The two left-hand columns present the coefficients of the MNL, while the three right-hand columns display the marginal effects at mean.

income variable. However, our estimates may not be precise because this variable could not be measured at the municipal level.

Finally, the results indicate that we should see plural governance as a distinct governance structure that can be preferred to complete externalization (to private and/or public firms) and complete in-house provision (Parmigiani, 2007). More specifically, the results show that indebted and rich cities are more likely to resort to plural governance rather than complete outsourcing and complete vertical integration.

Conclusion, limitations, and future research

In this article, we aimed to study the behavior of local governments through the lenses of strategic and public management. Studies conducted in private settings are useful for understanding plural governance as a strategic behavior, and public administration studies allow us to better understand the specificities of the public sector in general, and more specifically, of local governments and their management of public services.

We show that the level of uncertainty that characterizes transactions negatively influences the probability of outsourcing. But transaction-level analyses are not sufficient for understanding cities' sourcing strategies. Beyond the fact that the explanatory power of the models in 'Study of make-or-buy choices: Transaction-level sample' section is very low, an aggregation at the city level is necessary to observe plural governance. City-level analysis shows that richer and more indebted cities favor plural governance over complete externalization and complete in-house provision. Our results indicate that plural governance is a distinct governance choice, which should not be considered as an intermediate solution on a make-or-buy continuum. Cities with high debt burdens are more likely to implement strategies to increase economic efficiency of service delivery, and larger and richer cities have the capabilities to implement plural governance. We therefore contribute to the contract literature: if transaction-related attributes are an important dimension to design governance, we demonstrate that contractor characteristics are equally important. As contractors, cities have political and population traits that provide them with a specific style when they cope with transaction problems. Contracting perspectives and resource-based

view must then be seen as complementary approaches to understand plural governance for the management of local public services.

Our work is in line with recent studies that build bridges between strategic and public management. When previous studies have shown that plural governance is used by private firms because it enables the use of benchmarking strategies and gives valuable information to control for the opportunism of suppliers (Heide et al., 2014; Kidwell & Nygaard, 2011; Parmigiani, 2007), we demonstrate that these insights are also helpful for understanding public actors' interactions with firms through local procurement. Strategic management scholars have shown an increased interest in interactions between public and private actors because of their complexity (Cabral et al., 2019) and their importance in delivering social value (Quelin et al., 2017). We believe that it is important to study the strategic behaviors of public actors, without ignoring their specificities, which are mostly due to their public nature and exposure to political factors (Spiller, 2008). By transferring contracting theories to the public sector, we aim to shed light on the importance of political dimensions in governance choices for public services. Variables such as debt, unemployment, income, or political affiliations must be taken into account in empirical investigation of public actors' behaviors. Surprisingly, our results indicate that plural governance does not result from political alternations at the head of the city. This may be due to the fact that car park services are characterized by low levels of resident sensitivity (Beuve & Le Squeren, 2016; Levin & Tadelis, 2010). Citizens may be more sensitive to the mode of provision of other types of public services, such as crime prevention or emergency medical services (Levin & Tadelis, 2010).

We also believe that we contribute to the public management literature, as our study adds knowledge about the sourcing decisions of local governments. Although make-or-buy choices have been extensively studied in the literature (Bel & Fageda, 2009), they still need further investigation (Porcher, 2016). We believe that adopting a strategic management perspective is useful for understanding the trade-offs that are at stake in plural governance for local public services. Our results indicate that studies that investigate governance choices as belonging to a make-or-buy continuum are likely to be biased, as plural governance should be considered as a distinct governance structure. Our empirical findings also suggest that externalization is not necessarily the key to reducing costs associated with the delivery of public services. Specific governance mechanisms, such as plural governance, appear crucial to control for the opportunism of suppliers. We therefore believe that cities should not only base their make-or-buy decisions on service characteristics but also invest in contract-management capabilities and adopt plural governance, especially when the risk of opportunistic behaviors from suppliers is high. Plural governance may also be crucial for public services that are particularly important for citizens' welfare, and the ones that generate high budget expenditure.

Our study, of course, has some limitations, which open avenues for future research. First of all, our analyses could be enriched by the use of a larger dataset: the robustness of the results and the precision of the estimates would be improved with a higher number of observations. Finer-grained data would also help to better measure transaction and city characteristics. Transaction-level measures of asset specificity, management complexities, and need for capabilities, such as in Levin and Tadelis (2010) or Brown and Potoski (2003), would allow to better disentangle the potential theoretical explanations for make-or-buy choices for each infrastructure. However, this was not the main focus of the paper, and the car park sector was chosen because of the high standardization of its infrastructure. Moreover, finer data to measure city-level characteristics would enhance our understanding of the rationales behind plural governance. In particular, city capabilities could be further investigated using measures such as the number of employees in teams responsible for parking policies or past experience of public employees. An additional questionnaire would be needed to construct such measures.

The external validity of our results can also be questioned. We believe that our results are not only useful to understand the management of car park services, but also of other local public services. If plural governance is used to increase economic efficiency of service delivery, it can be used for every service. However, public services may vary according to some dimensions, such as their complexity or the sensitivity of citizens. We believe that more complex public services are even more likely to be managed using plural governance, because internal provision is even more important to get access to relevant information. We also believe that services that are characterized by higher levels of resident sensitivity are more likely to be influenced by political variables. This may be the case, for example, for household waste collection. Citizens are usually sensitive to the quality of this service (Levin & Tadelis, 2010), which is largely privatized in Europe as in the United States. However, Bel, Fageda, and Warner (2010) have shown that privatization of solid waste does not necessarily reduce costs, and they highlight the importance of government management, oversight, and regulation to ensure the efficiency of service delivery. We therefore believe that this kind of service would typically benefit from plural governance.

Future research investigating the stability of plural governance over time and the influence of plural governance on efficiency would be of particular interest. Our results indicate that cities adopt plural governance because they believe it can increase the efficiency of service delivery. A longitudinal study would help to validate this interpretation: if plural governance

is adopted as a strategy for decreasing costs, it should be stable over time. Moreover, studies that would confirm – or disprove – that plural governance helps to decrease costs are needed to adopt a normative perspective on that question. More generally, while studies that assess the efficiency of sourcing modes are particularly valuable, they require very precise panel data in order to properly identify a causal effect. Such studies also need convincing measures of public service efficiency, which are often difficult and costly to construct. These limitations open rich avenues for future research.

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