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Modeling political mimetic isomorphism versus economic and quality factors in local government privatizations

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Abstract

Numerous studies have considered the economic impact and political influence of privatization. However, the theoretical approaches previously applied to model privatization, whether economic or political, have not obtained robust results. To address this question, we present a new political approach, based on mimetic isomorphism, which enables us to more accurately define the relationship between privatization, political theory and economic aspects. This new focus, termed *political mimetic isomorphism*, hypothesizes that the privatization of public services is influenced by an imitation effect between neighboring municipalities that share a common political ideology. In our study, this approach is applied, using geostatistical tools and logistic regression analysis with spatial variables, to a sample of municipalities that privatized their water and/or waste collection services during the period 2014–2019. The results obtained demonstrate the validity of the theoretical model of political mimetic isomorphism and show that this factor exerts a stronger influence on privatization than certain economic variables.

Resumen

Son numerosos los estudios que han considerado el impacto económico y político sobre la decisión de privatización. Sin

embargo, los enfoques teóricos aplicados anteriormente a los modelos de privatización, tanto económicos como políticos, no proporcionan unos resultados concluyentes. Para abordar esta cuestión, en este trabajo se presenta un nuevo enfoque teórico en el que enmarcar las decisiones de privatización, basado en el isomorfismo mimético, el cual permite definir con mayor precisión las relaciones existentes entre la privatización, la teoría política y el ámbito económico. Este nuevo enfoque, denominado *Isomorfismo Mimético Político*, plantea la hipótesis de que la privatización de los servicios públicos está influenciada por un efecto de imitación entre municipios vecinos que comparten una ideología política. Para abordar este enfoque se han aplicado herramientas geoestadísticas y modelos espaciales econométricos a una muestra de municipios españoles que han privatizado sus servicios de agua o basura durante el periodo 2014–2019. Los resultados obtenidos demuestran la validez del modelo teórico del Isomorfismo Mimético Político, y muestran que este factor ejerce sobre la privatización una mayor influencia que ciertas variables económicas.

1 | INTRODUCTION

One of the most important decisions policymakers must take is that of how public services should be provided: managed directly by the public administration concerned, or indirectly through the intervention of a private sector agent (de la Higuera et al., 2023; Esteve et al., 2023; Schoute et al., 2018). In the late 1970s, during the premiership of Margaret Thatcher, the United Kingdom began a major privatization of its public services, under the premises of new public management (NPM). This approach has since acquired great importance in many countries and is a significant consideration for the managers of public services (Mercille & Murphy, 2016). Privatization can be defined as the process by which public sector functions are partially or completely transferred to private providers (Butler, 1991; Minicucci & Donahue, 2004). In the present article, the term privatization is used in the sense of contracting out services, or outsourcing, to the private sector, for provision and management, while the public sector retains ownership and decision-making capabilities (Anguelov & Brunjes, 2023; Cuadrado-Ballesteros et al., 2012; Qian et al., 2022). In Spain, public services may be contracted out via administrative concession, interested management, leasing, corporations, cooperatives, consortia or agreement (Pina & Torres, 1997). The present study considers the analysis of administrative concessions, whereby the private provider undertakes the management and exploitation of the service and assumes all operational risks thereof, in accordance with the relevant legislation (Art. 15 of Law 9/2017 on public sector contracts).

The decision to privatize municipal services is often criticized (Campos-Alba et al., 2019), with some currents of opinion citing the Communicative Planning Theory to argue that privatization can create unfairness, impair the community spirit and work against good citizenship (Morgan & England, 1988), if citizens believe it leads to their preferences being ignored (Hefetz & Warner, 2007). Similarly, exponents of the theory of transaction costs (Brown &

Potoski, 2003) affirm that privatization may not even generate the expected financial saving (Zafra-Gómez, López-Hernández, et al., 2016; Zafra-Gómez, Plata-Díaz, et al., 2016), while other authors have argued that cost savings can be achieved without privatization and without impacting on service quality (Van Slyke, 2003). In view of these considerations, many studies have sought to identify the factors that determine how and why public services are privatized (Furlong & Bakker, 2010; Lobina, 2005; Petersen et al., 2018; Pinto et al., 2015), albeit with inconclusive results to date (Dijkgraaf & Gradus, 2013). Within the public sector, concerns have arisen that privatization may not in fact deliver its presumed advantages over public provision (Albalate et al., 2021), and recent years have witnessed a global trend towards remunicipalization (Gradus & Budding, 2020; Pérez-López et al., 2021).

However, privatization is a reality in the provision of numerous local public services (Mercille & Murphy, 2016). This is especially so in Spain, where waste collection and water supply services have been privatized in more than 50% of municipalities (Warner & Bel, 2008). This conspicuous presence highlights the timeliness of determining the factors that favor or hinder the presence of this form of management.

Numerous studies have analyzed the effects of factors that, in accordance with the tenets of NPM (Diefenbach, 2009; Du Gay, 2000; Kuhlmann, 2010; Osborne & Gaebler, 1992), account for the privatization of public services (Bel & Fageda, 2017). But in addition, especially in recent years, many researchers have incorporated aspects of a political nature to explain the phenomenon of privatization at the local level (Bortolotti & Pinotti, 2008; de la Higuera-Molina et al., 2021; Peña-Miguel & Cuadrado-Ballesteros, 2020). As observed by Bel and Fageda (2017) in their literature review, previous studies have suggested that the ideology of the party in government is a significant determinant of the privatization decision, although to date no conclusive results corroborating this relationship have been reported. Some authors have pointed out that this may be due to the technical or social nature of the services (Elinder & Jordahl, 2013), although Bel and Fageda (2007) in their review of the literature on privatization observed that widely differing results had been obtained for the influence of political ideology on a given public service. In view of these considerations, the question arises as to whether another relevant aspect may have been overlooked.

The ambiguous results obtained regarding the provision of municipal services by different delivery forms places policymakers in a difficult position, and in many cases, they are uncertain as to the best policy option. According to DiMaggio and Powell (1983), in situations of uncertainty, many organizations will imitate the practices adopted by others in a similar situation, hoping to optimize performance and legitimize their decisions. In other words, municipal decisions concerning privatization may be subject to an environmental influence, both within and beyond the municipal boundaries. The outcome of this influence is termed mimetic isomorphism. Some research has been conducted into such mimetic effects, with respect to policy diffusion (Dobbin et al., 2007; Gilardi & Wasserfallen, 2019). For example, the prices of certain municipal services, such as domestic water supply, may be influenced not only by economic factors, but also by a spatial spillover effect (Chica-Olmo et al., 2013). Indeed, studies have shown that certain privatization operations have been inspired by those adopted previously in neighboring municipalities (Alonso et al., 2016; Ruíz-Villaverde et al., 2018).

Therefore, in order to understand the privatization of public services, the systems adopted by neighboring administrations should be considered (Zhang & Gibson, 2017). Furthermore, such a mimetic (imitative) relationship would be more likely if municipalities shared not only geographical space, but also political ideology.

Accordingly, the present study aims to enhance our theoretical understanding of the relations between ideological attitudes and mimetic isomorphism, as no previous investigation has jointly considered these two factors, either theoretically or empirically. With this approach, we aim to determine the factors underlying and accounting for the privatization of public services. To do so, a theoretical framework, termed *political mimetic isomorphism* (PMI) is proposed as a useful means of analyzing the presence or otherwise of privatization in local public services.

The theoretical modeling proposed in this article is employed as the basis for developing various PMI models, including pragmatic managerial considerations of cost, quality and efficiency, aspects traditionally used in the NPM approach to explain the privatization of public services. However, the principles of NPM were first expounded in the neoliberal movement popularized by Ronald Reagan and Margaret Thatcher (Storbjörk & Stenius, 2019), which

suggests that the reforms formulated under the NPM umbrella were drawn from an ideological background. Nevertheless, researchers have shown that although NPM has not achieved its stated goals of efficiency, quality and cost reduction, privatization still plays a major role in the provision of public services. PMI might explain this contradictory phenomenon. Specifically, an analysis focused on this concept could enable us to determine whether pragmatic decisions regarding the provision of public services are outweighed by ideological considerations and by the influence exerted by neighboring municipalities.

To do so, we introduce the impact of PMI gradually, incorporating in turn different variables measuring the geographic proximity and ideological alignment of neighboring municipalities, to determine their effect on privatization. This analysis is based on the application of various geostatistical tools and econometric models—in particular, a logistic regression model with panel data—in which spatial variables are applied to two public services that are often considered candidates for privatization and which have been addressed in many research studies, namely municipal water supply and waste collection (Bel et al., 2010). The study data were obtained from municipalities with populations ranging from 1000 to 50,000 inhabitants. Two groups of samples were obtained, one from 467 municipalities and the other from 657 municipalities, for the water supply and waste collection services, respectively, with respect to the period 2014–2019.

The study results obtained corroborate the validity of the proposed PMI model, regarding the privatization of water and waste collection services in Spanish municipalities, showing that mimetic criteria exert a significant influence on the privatization decision, together with the factors highlighted under NPM. Other relevant factors presented in the PMI model include the level of unemployment in the municipality, its population size and the proximity to the coast.

The rest of this article is structured as follows: first, we review the literature on privatization, its causes and consequences; the question of PMI and its possible effect on privatization is then addressed; the following section presents the study data, the variables considered and the econometric strategy employed, after which the study results are discussed, and the main conclusions summarized.

2 | PRIVATIZATION, ITS DRIVERS, AND ITS CONSEQUENCES

The privatization of public services has often been justified by reference to advantages ascribed to the private sector, such as greater innovation and technical expertise (Alonso et al., 2015; Zafra-Gómez et al., 2023), or expected improvements in service quality (Christoffersen & Bo Larsen, 2007). However, it is the economic and political aspects that have most attracted the attention of experts, due to the well-known influence of these factors on policymakers' decisions in this respect (Bel & Fageda, 2009). However, much debate has arisen, with authors such as Bel and Fageda (2009, 2017) and Warner and Aldag (2019) affirming that pragmatic and economic considerations are prioritized in deciding whether to privatize municipal services, while others believe that political criteria are of greater importance (Alonso et al., 2016; Gradus & Budding, 2020). It is important to highlight the administrative contexts in which different privatization studies have been carried out. As Bel and Fageda (2007), Warner and Aldag (2019), and Warner (2023) have pointed out, in the United States, decisions about service management are often made on more technical grounds, with political power playing a less prominent role. Furthermore, local elections are not as partisan as in Europe, for example, and therefore political ideology may not exert the same influence on privatization decisions.

In studies of privatization, economic questions such as cost savings, financial distress and efficiency are usually included in the analysis (Carr et al., 2009; Greco et al., 2015; Laitinen et al., 2023; López-Hernández et al., 2018; Olmo & Brusca, 2021; Silvestre et al., 2018; Wassenaar et al., 2013), reflecting widely-held theoretical views in support of this approach, such as the theories of public choice, of ownership or of agency. Advocates of these postulates suggest that privatization promotes innovation in the provision of services, achieves significant cost savings, due in part to economies of scale and exposure to competition (Albalate et al., 2020; Zafra-Gómez & Chica-Olmo, 2019), and improves service quality, among other advantages (Brown et al., 2007; López-Hernández et al., 2018). Moreover,

these benefits may be heightened in periods of cross-border crisis such as the Great Recession of 2008 or the COVID-19 pandemic.

In their literature review, Petersen et al. (2018) concluded that, from the numerous empirical studies undertaken to analyze the outcomes of privatization, cost savings are mainly obtained for services of a technical nature compared to social services. This review identified few studies specifically focused on the level of quality achieved following privatization. Nevertheless, Kavanagh and Parker (2000) in their study of technical services in the UK, and Gilmer (2007) in an analysis of social services (mental health) in the United States, reported that privatization was associated with cost savings and improved quality. However, other articles have found that privatization leads to increased costs and reduced quality—see, for example, Purse (2009) for employment services in Australia, or Thompson (2011) for school bus services in the United States. On the other hand, many other studies have concluded that privatization does not generate significant differences in costs (Kuhlmann, 2008; Laun & Thoursie, 2014; Stanley et al., 2013) or in service quality (Bennmarker et al., 2013; Laun & Thoursie, 2014; Leland & Smirnova, 2009; Mouwen & Rietveld, 2013; Pérotin et al., 2013).

It may be argued that the results of privatization are significantly influenced by the type of service in question. But even within a specific context, research findings are conflicting. For example, with respect to municipal water services, some researchers have associated privatization with reduced service costs (Correia & Marquez, 2011), and others, with increased costs (Le Lannier & Porcher, 2014), while a third group of studies observed no change or no significant relation with privatization (González-Gómez et al., 2013; Saal & Parker, 2000).

Nor can we generalize the empirical results obtained previously regarding the effect of privatization on service cost or quality for municipal waste collection. While Tickner and McDavid (1986) and Reeves and Barrow (2000) found that privatization reduced service costs, others observed a decrease in cost efficiency (Máñez et al., 2016; Pérez-López et al., 2018; Soukopová et al., 2022). In this context, too, Gómez-Lobo and Szymanski (2001) found that the cost reduction was greater when there was significant competition between potential suppliers. However, there may be no such association (Bae, 2010; Bel & Mur, 2009; Dijkgraaf & Gradus, 2013) or costs may even have increased with privatization (Ohlsson, 2003). In addition, Dijkgraaf and Gradus (2013) reported that over time the initial cost saving from privatization decreases and ultimately disappears.

Among the few studies to have considered the relation between privatization and service quality, Le Lannier and Porcher (2014) analyzed municipal water services and observed no changes in this respect, corroborating the earlier work of Domberger and Jensen (1997) regarding waste collection services.

From the articles cited above, it is apparent that the advantages attributed to privatization are not always achieved, and that consensus is lacking about the real economic and service-quality effects of adopting this form of public service provision (Dijkgraaf & Gradus, 2013; Silvestre et al., 2018).

With all the above, the question arises, therefore: what leads policymakers to privatize public services? The answer has traditionally been sought in the economic situation of the local entity, in the level of service performance and, in recent years, in certain political factors (Flink & Xu, 2023). These were examined, for example, by Bel and Fageda (2009), who performed a meta-regression analysis of the factors underlying privatization. In addition, Levin and Tadelis (2010) and Zullo (2009), among others, found no empirical evidence that financial difficulties impelled municipalities towards privatization, but Nelson (1997), Brown et al. (2007), and Hebdon and Jalette (2008) all reached the opposite conclusion, regarding municipal public services in general. In the case of water services, Pérard (2009) found that high costs were associated with privatization in US municipalities, a conclusion mirrored by Zafra-Gómez, López-Hernández, et al. (2016) and Zafra-Gómez, Plata-Díaz, et al. (2016) in a similar study conducted in Spain. Miralles (2009) argued that privatization was performed not only to reduce costs, but also to improve service efficiency. Moreover, some empirical studies report that the complexity of the environment is a crucial driver of privatization (Carpentier et al., 2006; González-Gómez & Guardiola, 2009; Martínez-Espiñeira et al., 2009; Ménard & Saussier, 2000).

Studies of the privatization of municipal waste services have found that a municipality in financial difficulties is more likely to change its form of service management than one which is more financially stable (Wassenaar et al., 2013). On the other hand, Bel and Miralles (2003) reported that a corporation's financial situation had no effect

on its decision to privatize. For their part, both Zafra-Gómez, López-Hernández, et al. (2016) and Zafra-Gómez, Plata-Díaz, et al. (2016) and Dijkgraaf et al. (2003) observed that privatization of this service was more likely with a worsening financial situation. From a cost perspective, Walls et al. (2005) argued that this service is less likely to be privatized when its provision is especially costly; however, Dijkgraaf and Gradus (2007) and Bel and Fageda (2008) found the opposite to be true.

Service quality has been considered in several empirical studies. Ruester and Zschille (2010) and Carpentier et al. (2006) found that higher service quality was associated with a lower probability of privatization of the water service, and the same inverse relationship was obtained by Zafra-Gómez, López-Hernández, et al. (2016) and Zafra-Gómez, Plata-Díaz, et al. (2016) for municipal waste collection services.

From the above, it can be seen that the search for greater efficiency, reduced costs and improved quality, by means of privatization, in line with NPM, has traditionally led these aspects to be considered in studies of an empirical nature. However, policy reforms such as privatization, in line with NPM principles, are undeniably inspired by convictions featuring a strong ideological content. Accordingly, any study of the factors underlying privatization should include not only the more pragmatic aspects of service provision, but also a consideration of the associated political ideology.

Although the increasing acceptance of NPM-inspired reforms in the 1980s was attributed to the actions of governments led by right-wing parties (Storbjörk & Stenius, 2019), measures focused on the marketization of public services were also present in the agendas of more progressive governments, as was the case of the Australian Labor Party Government (ALPG) (Johnston, 2000) and the Swedish Social Democratic Party (Jansson et al., 2021; Storbjörk & Stenius, 2019). Indeed, Hood (1991) pointed out many years before that NPM principles were posited in a framework of ideological neutrality. Furthermore, some authors have suggested that the influence of political ideology may vary according to the technical or social nature of the service (Bel & Fageda, 2017; Elinder & Jordahl, 2013).

In short, ideology, together with other political factors, has been considered in various studies related to privatization. (Bel & Fageda, 2007, 2017; Gradus & Budding, 2020). As observed by Bel and Fageda (2009), in recent years the impact of political factors on the privatization decision has become increasingly significant, leading researchers to consider whether economic concerns may play a stronger role than political issues in this question, for municipal services in general (Bel & Fageda, 2017; Warner & Aldag, 2019). This belief has been corroborated by Ruíz-Villaverde et al. (2015), González-Gomez et al. (2011), and Chong et al. (2015) with respect to the water service in particular. However, other studies suggest that political criteria may be of greater importance (Alonso et al., 2016; Gradus & Budding, 2020). In this respect, Picazo-Tadeo et al. (2012) in a study of municipal water services, concluded that political issues outweigh those of an economic nature in the decision-making process.

This ongoing debate on the influence of the political sphere on privatization reaffirms the need to undertake a more detailed study of these factors, and especially those related to political ideology, since in European local governments, at least, the privatization decision is taken by politicians.[1] The fact that the political ideology of the policymakers concerned may influence the decisions taken regarding service provision should not be ignored.

According to the Partisan Theory (Hibbs, 1977) postulates, center-right parties are more likely than center-left ones to implement market solutions, such as privatization (Bortolotti & Pinotti, 2003; Obinger et al., 2014; Schoute et al., 2018; de la Higuera-Molina et al., 2021). However, there is not enough empirical evidence to establish this relationship (de la Higuera-Molina et al., 2019).

In the European context, various empirical studies have observed an ideological influence on decisions taken regarding the privatization of public services (Bhatti et al., 2009; de la Higuera-Molina et al., 2021; Jansson et al., 2021; Plantinga et al., 2011; Schoute et al., 2018). Others have shown, specifically, that more conservative governments tend to favor privatization (Cuadrado-Ballesteros et al., 2012; Elinder & Jordahl, 2013; Gradus et al., 2014; Zafra-Gómez, López-Hernández, et al., 2016; Zafra-Gómez, Plata-Díaz, et al., 2016; Guo & Willner, 2017; Gradus & Budding, 2020; Jansson et al., 2021). At the local level, this question has mainly been addressed with respect to the provision of waste collection services (Bel & Fageda, 2007). Thus, Gradus et al. (2014), Zafra-Gómez, López-Hernández, et al. (2016) and Zafra-Gómez, Plata-Díaz, et al. (2016), and Gradus and Budding (2020), among others, have reported the existence of a positive relationship between privatization and

control of local government by a conservative administration. On the other hand, for the water supply service, most studies have failed to detect any influence of political ideology on the privatization of this service. To our knowledge, the only exception is Picazo-Tadeo et al. (2012), who reported that water services were more likely to be privatized when political control was exercised by progressive parties.

In view of these considerations, it seems clear that more empirical evidence is needed to clearly establish the relationship between political ideology and privatization.

Most previous research into political ideology and its effect on privatization has addressed this question in isolation, but it is important to consider that political decisions by municipal policymakers could be influenced by external forces, environmental factors or other agents (Hammer & Green, 1996), and therefore these decisions should be analyzed taking all factors into account. This scenario would be in line with the Structural Theory of economic development (Chica-Olmo, González-Gómez, et al., 2019), and with the Institutional Theory (Scott, 1987). According to the latter, any organization has to develop its activity within contexts where a set of institutions shape the structure of rules, values and behavior accepted, and for its survival it must adapt itself to that institutional environment (Fusco & Allegrini, 2020). In the public administration context, this awareness has traditionally provided the theoretical background for addressing relationships between individuals and organizations, and for understanding the decisions taken at this level to gain legitimacy and acceptance, and to respond to environmental pressures (Lowndes, 2001).

3 | PRIVATIZATION AND PMI

Numerous studies defend the view that some institutional decisions replicate those adopted in other jurisdictions, thus generating a diffusion of policies. At the local level, this means that a decision to implement a given policy may be taken because one or more neighboring municipalities have previously done the same (Gilardi, 2010; Gilardi & Wasserfallen, 2019; Simmons & Elkins, 2004). Four types of policy diffusion can be distinguished: coercion, competition, imitation, and learning (Meseguer & Gilardi, 2009; Shipan & Volden, 2008).

In the same vein, empirical studies of local government have observed spatial interdependence between municipal authorities in their decision-making on fiscal matters (Ndiaye, 2018; Revelli, 2005), spending (Ermini & Santolini, 2010), levels of service efficiency (Balaguer-Coll et al., 2019; Prior et al., 2019) and service costs (Zafra-Gómez & Chica-Olmo, 2019). Similarly, it has been argued that the public policies adopted by one authority may be influenced by those implemented by others with which it interacts; hence, the decisions of public managers would be affected by those taken in neighboring municipalities (Dahl & Hansen, 2006; Massey, 2009; Zafra-Gómez, López-Hernández, et al., 2016; Zafra-Gómez, Plata-Díaz, et al., 2016).

In the specific case of privatization, it has been suggested that geographic proximity may influence its acceptance or rejection (Dahl & Hansen, 2006; Zafra-Gómez, López-Hernández, et al., 2016; Zafra-Gómez, Plata-Díaz, et al., 2016). Indeed, empirical studies have shown that privatization decisions by local entities are influenced by how the service in question is provided in nearby municipalities (Alonso et al., 2016; Chica-Olmo, Cano-Guervos, et al., 2019; Chica-Olmo, González-Gómez, et al., 2019; Zhang & Gibson, 2017).

Bel and Miralles (2003) showed that in Spain management decisions regarding municipal waste collection services are subject to a neighboring effect. Similarly, Zafra-Gómez, López-Hernández, et al. (2016) and Zafra-Gómez, Plata-Díaz, et al. (2016) concluded that a municipality is more likely to privatize a service if a neighbor has previously taken the same decision. The same influence has been demonstrated by González-Gomez et al. (2011) with respect to the privatization of water services. Going beyond earlier studies, Ruíz-Villaverde et al. (2018) specifically analyzed the question of diffusion in decisions regarding water service privatization, finding that the imitation mechanism is of greatest importance in this respect.

The diffusion model of decisions on the privatization of public services is based on earlier research such as that conducted by DiMaggio and Powell (1983), who defined organizations' imitation of practices and procedures in response to environmental pressures as institutional isomorphism. More specifically, they differentiated three types

of institutional isomorphism: coercive, normative and mimetic. Coercive isomorphism refers to the homogenization produced by external forces (such as those exerted by other bodies on which the organization depends). This concept underpins the coercive mechanism of policy diffusion. Normative isomorphism takes place when this homogenization is inspired by the wish to act in a professionally correct manner, as with the learning mechanism proposed in theories of policy diffusion; and mimetic isomorphism describes the situation that arises when a lack of information encourages the imitation of processes, structures or actions taken by similar organizations, which is comparable with the imitation mechanism in policy diffusion. The above authors did not consider isomorphism separately, as a consequence of competition, as policy diffusion does, possibly because behavior that is responsive to competition is usually accompanied by learning or professionalization (Ruíz-Villaverde et al., 2018).

As mentioned above, some studies have indicated the presence of isomorphic behavior in local governments' decisions on privatization, noting that in the provision of local services, municipalities are subject to various pressures, including customers' demands and the impositions of supramunicipal entities (i.e., the national or regional government). Nevertheless, in the Spanish context, the final decision regarding the form of service delivery is taken by the local government, which is legally independent from supramunicipal forces, and so this decision is not subject to institutional or legal pressures. Accordingly, any decision to privatize a municipal service would not arise from coercive isomorphism, due to the independence of the local public entities from supramunicipal public entities (Ruíz-Villaverde et al., 2018). Nevertheless, it should be clarified that Article 85 of the Local Government Act (7/1985) states that local public services must be managed in the most sustainable, efficient way possible. Accordingly, the privatization decision is subject to this stricture. In practice, however, this condition imposed on policymakers has negligible real effect, since there is no objective yardstick for determining which of various forms of service management is most efficient and sustainable, since socioeconomic, demographic and geographical differences between municipalities make it difficult to determine which form of service management, among those legally accepted, is most efficient. This problem is aggravated by the fact that for services that have already been privatized there is no information on what would be the real cost of direct management by the municipal authority, or that of management by local autonomous agencies, public companies or mercantile companies. In addition, in the political context, a relevant consideration is that party discipline may mean that local government decisions are significantly affected by political pressure (Azfar et al., 2018), rather than the above legislative requirement. In short, although a municipality might decide to privatize one or more public services as a consequence of certain pressures to which its policymakers are subjected, it is not possible to determine or measure the effect of coercive isomorphism.

A further important consideration is that, to date, the empirical results obtained by researchers do not enable us to generalize the relative efficiency benefits generated by privatization (Bel et al., 2010; Dahlström et al., 2018; Pérez-López et al., 2016). Moreover, as observed by Strang and Meyer (1993), public policies are highly theorized, and a cause-effect presumption is usually made. Under this premise, it is difficult to control or measure the presence of normative isomorphism in the municipalities responsible for privatization, as the decision does not always achieve the expected results and the rationale for its adoption might be open to question; in consequence, the technocratic reasoning is not applicable (Fink, 2011). The above arguments should not be taken to imply that normative isomorphism cannot exist, following consultations with experts in decision-making, rather that this process is not usually recorded or communicated publicly, and therefore it cannot be considered in the present analysis of privatization. Ultimately, then, only mimetic isomorphism is considered in this study, that is, the situation in which a local entity seeks to legitimize its privatization decision by citing and imitating that taken by a neighboring authority (Fusco & Allegrini, 2020).

In relation to its potential effect on privatization, this form of isomorphism has received little research attention. Nevertheless, the issue is worthy of consideration since, as noted by Ruíz-Villaverde et al. (2018), the privatization of municipal services such as water supply and treatment may fail to achieve the desired improvements in efficiency or quality if the decision is taken as a consequence of inter-municipal processes of policy diffusion.

However, as DiMaggio and Powell (1983) pointed out, mimetic isomorphism takes place between organizations that are not only active in the same field but are perceived to be similar. In consequence, a local entity might only

imitate the practices of its neighbor when the two share a common political ideology. In this respect, Fink (2011) observed that privatization depends on the successful adaptation of policies to the pre-existing beliefs of the governing authority. This idea is supported by the opportunistic behavior theory (Blais & Nadeau, 1992; Nordhaus, 1975), according to which politicians base their decisions (including those on the management of public services) according to their own political interest (e.g., obtaining re-election) (de la Higuera-Molina et al., 2021). In other words, politicians will replicate the behavior of neighboring municipalities that have a similar political ideology, aligning their decisions with those of their political surroundings, in order to seek legitimacy and the approval of their electors.

To our knowledge, this aspect has not been studied previously, and further theoretical and empirical analysis is required to properly determine the drivers of privatization.

While several articles have considered the influence of political ideology on a municipality's decision regarding the privatization of its public services (Bel & Fageda, 2007, 2017; Gradus & Budding, 2020) and, as a separate analysis, have determined the neighborhood effect on this decision (Alonso et al., 2016; Chica-Olmo, Cano-Guervos, et al., 2019; Chica-Olmo, González-Gómez, et al., 2019; Zhang & Gibson, 2017), the considerations set out above lead us to believe that these two factors may present significant interdependence and therefore should not be addressed in isolation.

Against this backdrop of interdependence between neighboring municipalities, and taking due account of the possible impact of political ideology on the privatization dynamic, this article proposes a theoretical approach, termed PMI, according to which the decisions of public managers may be influenced by the actions taken by others with whom they share both a common geographic space and a common political ideology. This circumstance would increase the probability of local policymakers imitating the way in which others manage the provision of public services, for example, via privatization.

The above theoretical approach can be modeled to confirm its validity and to clarify how privatization decisions are taken, enabling us to evaluate the aptness of considering not only the economic theories or the reforms proposed by NPM, but also the influence of political theories, in order to characterize the relevant factors according
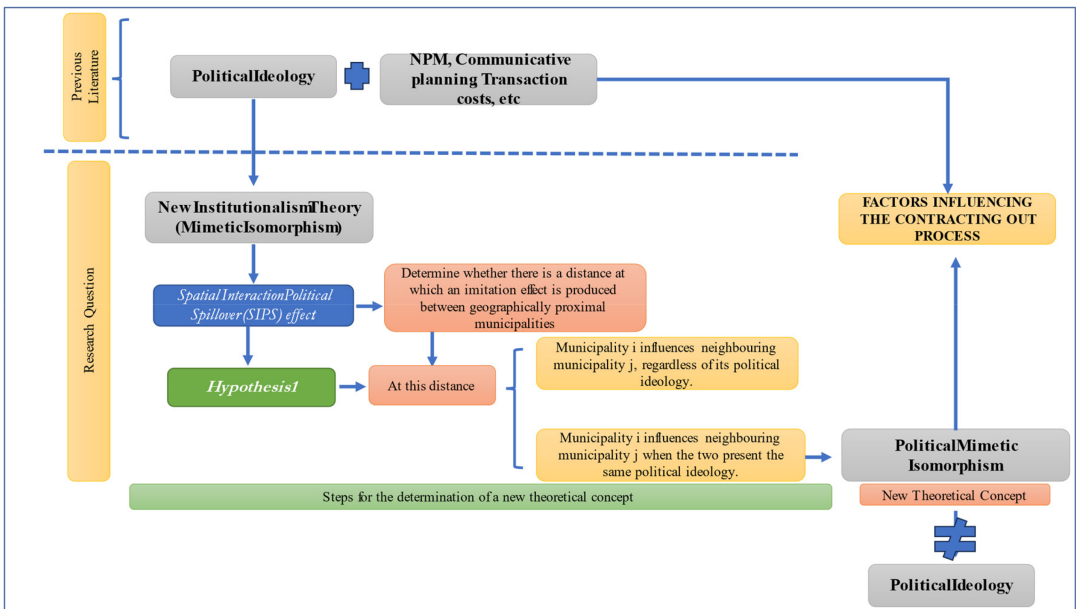

FIGURE 1 Summary of the theoretical novelty and the research question. [Color figure can be viewed at wileyonlinelibrary.com]

to the nature of the service in question (Alonso et al., 2016; González-Gómez & Guardiola, 2009; Zhang & Gibson, 2017).

For the above purpose, we define PMI as a gradual process by which political influence is generated on decisions to be taken by entities sharing a common geographical, technological, economic and/or social space and which generates an interest common to all these entities. The degree of PMI depends, firstly, on the specific distances conforming the space in question and, then, on whether this influence is heightened by the existence of a shared political ideology between the political authorities concerned. To our knowledge, the latter question has not been addressed in previous research. Figure 1 illustrates and summarizes the relationships between the theories used to define MPI and their relationship with our hypothesis.

In view of these considerations, the following hypothesis is posed:

> **Hypothesis 1.** The privatization of municipal services is strongly influenced by geographic proximity to authorities that have previously taken this decision and where a similar political ideology prevails (in accordance with PMI).

The control variables considered in this study are the following socioeconomic and demographic factors: the distance to the coast (taken as a proxy variable for the sun-and-sand focused tourist nature of the municipality), an aspect that has been considered a determinant of privatization processes (Huete-Alcocer et al., 2019; Rogge & De Jaeger, 2013); the population density, taken as an approximation of the demand for municipal services (Greco et al., 2015; Rogge & De Jaeger, 2013); and unemployment, taken as a proxy for personal wellbeing (Balaguer-Coll et al., 2019).

4 | STRATEGY TO CHARACTERIZE THE MAIN FACTORS UNDERLYING THE PRIVATIZATION OF PUBLIC SERVICES

To address the study of privatization, this article addresses two important local public services, waste disposal and water management, which are often contracted out (Bel et al., 2010). Specifically, for the water service we consider a sample of 467 Spanish municipalities, and for the waste service, a sample of 657. In both cases, the sample consists exclusively of municipalities with between 1000 and 50,000 inhabitants. This population size was selected because appropriate data were not readily available for larger or smaller authorities. The data were analyzed for the period 2015–2019, although information for 2014 was also considered in order to account for the possibility of a cause-effect lag on the privatization decision (Campos-Alba et al., 2020; López-Hernández et al., 2018).

To address the question of mimetic isomorphism, this study was divided into two phases. The first focuses on the spatial influence of the management form considered. This approach reveals the degree to which the service-delivery mode employed in one municipality influences that adopted in a neighboring one. In the second phase, the outcome of the latter analysis was used to define an econometric strategy, using a logit data panel model with random effects to quantify the effects produced by PMI. These phases are described in detail below.

4.1 | The impact of spatial autocorrelation on the privatization decision

The spatial analysis was performed as follows. First, we obtained the cartographic coordinates of the urban centers of each municipality included in the analysis, in order to determine the Euclidean distances between each urban center, using a geographic information system (GIS). With the illustrative maps thus constructed, we analyzed the presence or otherwise of spatial autocorrelation for the two variables of interest: Privatization_Water (PWr) and Privatization_Waste (PWs) (these variables are defined in Table 4). Spatial dependence is assumed to exist if a
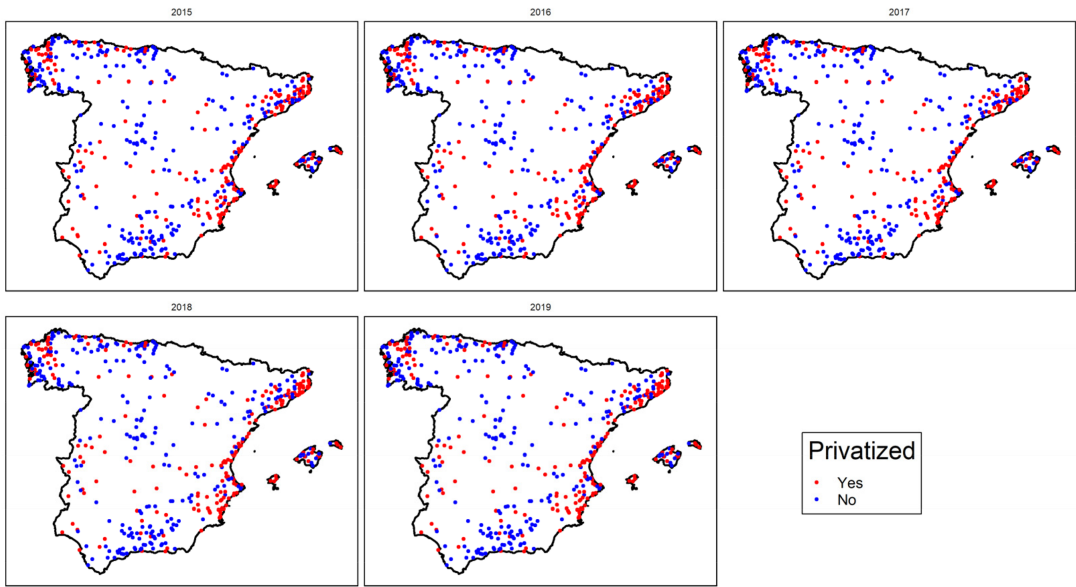
FIGURE 2 Location of urban centers (points) of municipalities and type of water service management, private (in red) or direct (in blue), for each year considered. [Color figure can be viewed at wileyonlinelibrary.com]
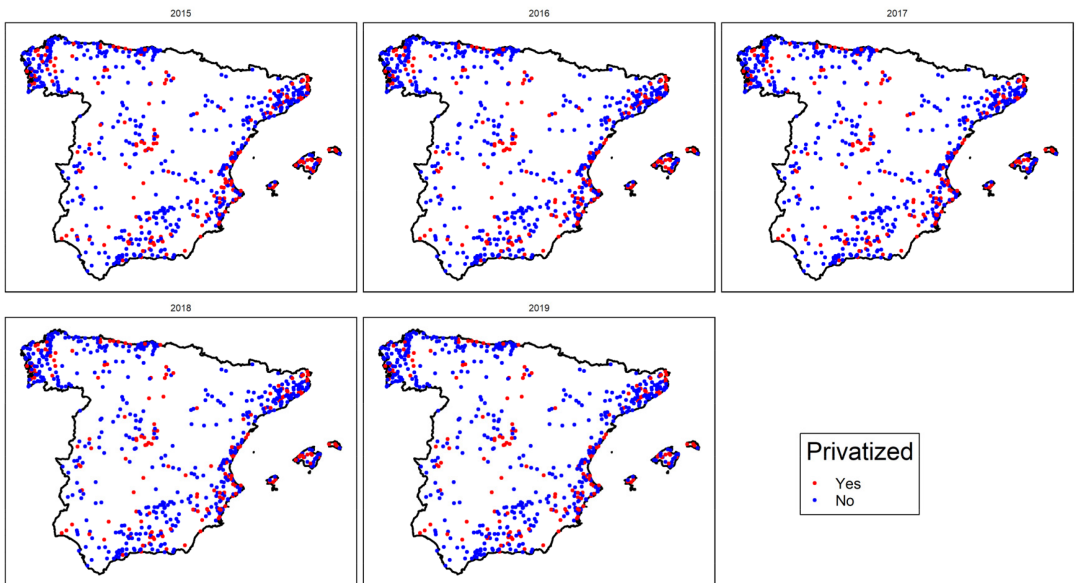
FIGURE 3 Location of urban centers of municipalities and type of waste service management, private (in red) or direct (in blue), for each year considered. [Color figure can be viewed at wileyonlinelibrary.com]

municipality's decision to privatize a public service is related to corresponding decisions made by neighboring authorities. Figures 2 and 3 show that the spatial distribution of these variables does not appear to be totally random, as geographically proximal municipalities are seen to make similar decisions (i.e., spatial clusters are formed), both for the water service (Figure 2) and the waste service (Figure 3). This finding indicates the possible presence of spatial

FIGURE 4 Experimental variograms (points) for the 5 years analyzed, with fitted model (solid line) of the management forms for the water service (a) and the waste collection service (b). [Color figure can be viewed at wileyonlinelibrary.com]

autocorrelation for the variables considered. As a theoretical explanation, this apparent spatial dependence may occur due to the existence of spatial m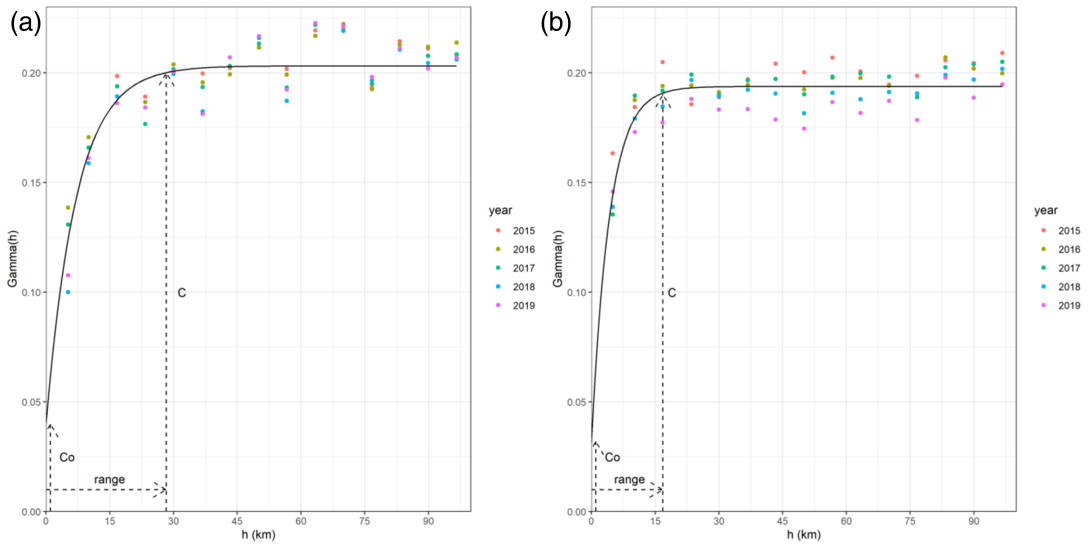imetic isomorphism, caused by the effect of mimetic variables such as the ideology of the governing political party or a prior decision to privatize the service in question. When such a spatial dependence exists, it is then of interest to determine the spatial range of this spatial mimetic isomorphism.

The spatial autocorrelation (if any) of the variables was determined, and the corresponding spatial range calculated, using the variogram function (Cressie, 1991), a geostatistical method that makes it possible to determine the spatial range of influence exerted by geographic proximity on municipal decisions regarding the delivery form for local public services. The first step in this process was to obtain an experimental variogram (Matheron, 1970).[2] Figure 4 illustrates the experimental variograms (points) obtained for different values of h (Euclidean distance in km between the urban centers) and the variogram model fitted for each of the 6 years analyzed (continuous line). The experimental variogram obtained consists of a scatterplot, or point cloud, indicating that, as the distance (h) between municipalities increases, so does the spatial variability (Gamma) of the variables of interest for each year; in other words, with greater distance, the spatial autocorrelation decreases. Thus, the decisions made by proximal municipalities are more alike than those taken by municipalities that are more distant from each other. In short, the study variables considered present spatial dependence for each of the years in the study period.

To determine the spatial range of PWr and PWs, a function or model must be fitted to the scatterplot of the experimental variogram. In the present case, an exponential model was used (Cressie, 1991; Matheron, 1970).[3] From this, the following estimates were obtained for the parameters of the variogram model of water service management: $C_0 = 0.0401$, $C = 0.1629$, and the effective range $a' = 28$ km, while for the waste collection service they were: $C_0 = 0.0317$, $C = 0.1619$ and the effective range $a' = 16.7$ km, where C_0 is the nugget effect representing the spatial random variability, C is the partial sill, and $C_0 + C$ is the sill representing the total variability. The relationship between the nugget effect and the sill is very low in both models ($0.0401/(0.0401 + 0.1629) * 100 = 16.75\%$ [water] and $0.0317/(0.0317 + 0.1619) * 100 = 16.37\%$ [waste]), indicating strong spatial dependence (Chica-Olmo & Cano-Guervos, 2020).

TABLE 1 Joint Count test (Jtot) for the variables WTr (water service) and WTs (waste service) during the 5 years considered.

	Water service					Waste service				
Year	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Jtot	424.0	420.0	410.0	405.0	404.0	360.0	346.0	348.0	332.0	320.0
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

As well as obtaining the variograms for the WTr and WTs variables for each year of the study period, the presence or otherwise of their spatial autocorrelation was determined statistically using the Joint Count test (Cliff & Ord, 1981). The results shown in Table 1 indicate that for a 99% confidence level, within the ranges indicated above, a municipality's decision on service privatization is indeed related to the corresponding decisions taken by neighboring authorities.

The above results indicate that the decision to privatize a local public service, by municipality *i*, is related to the corresponding decision taken by one or more neighboring municipalities, at a maximum distance of 28 km for the water service, and 17 km (approximately) for the waste collection service.

Assuming the above distances as the effective range of influence in each case, Figure 5 illustrates the neighborhood networks observed among the municipalities studied. Table 2 shows the descriptive statistics for the service relationships (water and waste) between neighboring municipalities. As can be seen, there is a stronger association for the water service than for the waste service. Thus, the average number of neighbors or links for the water service is almost double (4.8) that for the waste service (2.9). The opposite is the case for the numbers of municipalities that have no such link (44/467 * 100 = 9% [water], 124/657 * 100 = 19% [waste]). Very similar results were obtained for the case of municipalities with only one neighbor (47/467 * 100 = 10% [water], 125/657 * 100 = 19% [waste]). Thus, although the sample of municipalities analyzed for the waste service was much larger (*n* = 657) than that for the water service (*n* = 467), greater connectivity was observed in the latter.

From the above, we conclude that during the study period, there existed spatial isomorphic mimicry in each of the services considered (in view of the spatial autocorrelation detected) and that the spatial range of the water service was almost double that of the waste service (28 vs. 17 km, respectively). Taking these ranges into account, it can also be said that the degree of connection between the privatization decisions taken for the water service was, on average, almost double that for the waste service.

Having obtained the above results from analysis of the variograms, and after defining the neighborhood of a municipality according to the spatial range of influence calculated from the services it had or had not privatized, while taking into account the findings obtained regarding the neighborhood networks (Figure 5), the following questions arise: (a) how many neighbor municipalities are governed by conservative-leaning political parties?; (b) how many provide the service in question via privatized management?; (c) how many neighbor municipalities present a significant interaction between a) and b)? The answers to these questions provide the basis for defining three variables of a spatial nature, reflecting the three aspects of PMI addressed in our analysis of privatization. The first of these variables, termed "*Neighbor_Ideology*," is the number of municipalities that are within the range of influence of municipality *j* and which are governed by a party with a conservative ideology. The second variable "*Neighbor_Privatization (t − 1)*," indicates the number of municipalities that are within the range of influence of municipality *j* and which have privatized the service in question during the previous year. Finally, "*Neighbor_Ideology_Privatization (t − 1)*" indicates the number of municipalities that are within the range of influence *j* and which, in addition to having the same political ideology as municipality *j*, provided the service via a privatized management form during the previous year. By analyzing these three variables, the theoretical PMI framework can be instrumentalized.

The next step in the process is to specify other factors, mainly of an economic and socio-economic nature, that may account for privatization. A relevant geographic factor may be the local importance or otherwise of tourism,
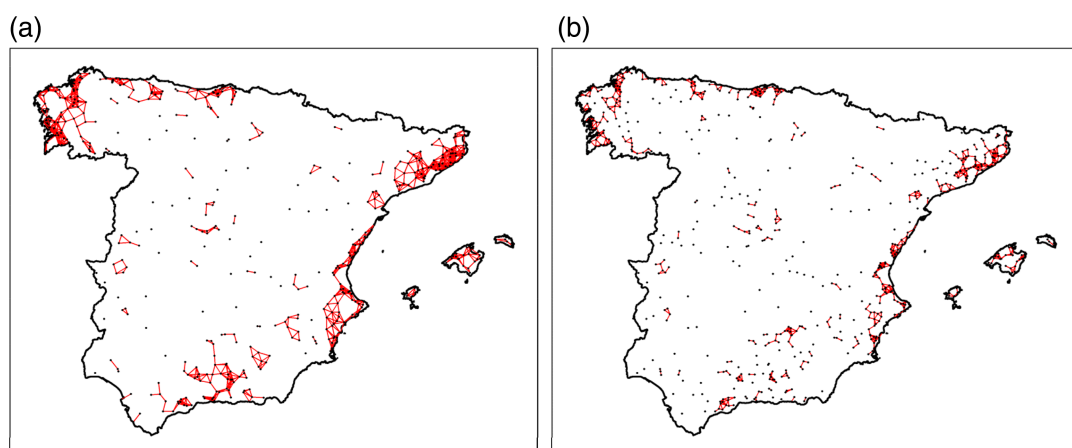
(a) (b)

FIGURE 5 Neighborhood networks of urban centers of municipalities for water (a) and waste services (b), for distances ≤28 km (water service) and ≤17 km (waste service). [Color figure can be viewed at wileyonlinelibrary.com]

TABLE 2 Descriptive statistics of the neighborhood networks for the water and waste services considered.

	Water service	Waste service
Number of municipalities	467	657
Average number of neighbors	4.775	2.907
Number of municipalities with only one neighbor	47	125
Number of municipalities with no neighbors	44	124
Number of municipalities most connected	8 (with 15 neighbors)	1 (with 11 neighbors)

that is, privatization could be associated with proximity to coastal areas where tourism is significant. Many previous studies have included this variable, using indices drawn from economic institutes (Zafra-Gómez, López-Hernández, et al., 2016; Zafra-Gómez, Plata-Díaz, et al., 2016; Da Cruz & Marques, 2014). However, in the present case the geographic influence on privatization was approached by means of a GIS, which was applied to the variable related to the tourism index, namely the proximity to the coast of the municipalities studied and the service management form adopted in each case. The use of this proximity as a proxy variable also reflects the impact of tourism on the coastal municipalities considered, a question of great interest in our context, as Spain is a country where sun-and-beach tourism is of major importance to the national economy (Huete-Alcocer et al., 2019).

Figures 2 and 3 show that, for the water supply service, municipalities closer to the coast are more likely to privatize the service, especially in eastern Spain. However, the opposite is true for waste collection, in which case the municipalities closer to the coast tend not to privatize the service.

This contrast between the two services may arise from the differing characteristics of each one. The water supply service in coastal areas tends to suffer from water stress due to the seasonality of demand produced by patterns of tourist arrivals (González-Gómez et al., 2011). This circumstance increases the complexity of service provision, and may be conducive to privatization (Carpentier et al., 2006). For the waste collection service, on the other hand, municipalities characterized by their economic dependence on tourism usually achieve greater service efficiency via public management, and therefore privatization of this service would not be considered as an option to improve the economic situation of the municipality (Guerrini et al., 2017).

In the present study, an iterative procedure was used to determine the zone within which proximity to the coast influences policymakers' decisions on privatization (Chica-Olmo, Cano-Guervos, et al., 2019; Chica-Olmo, González-
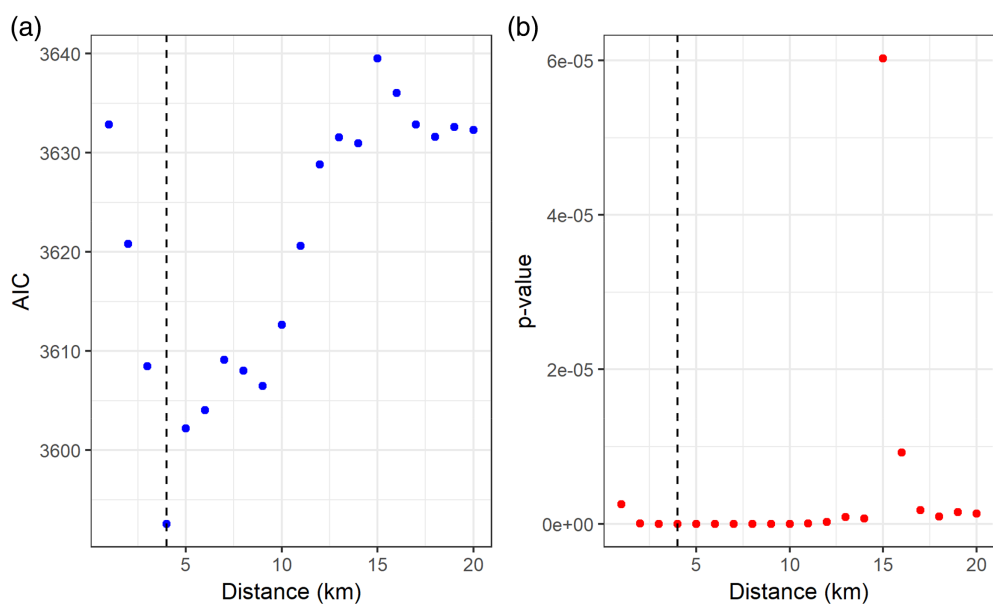
FIGURE 6 AIC of the model (a) and *p*-value (b) of the variable "Coast" in the final model for different distances between the coast and the urban center. [Color figure can be viewed at wileyonlinelibrary.com]

TABLE 3 Number of municipalities that have privatized (Private provision) or not (Direct provision) the water and waste services considered.

	Water service					Waste service				
Year	2015	2016	2017	2018	2019	2015	2016	2017	2018	2019
Direct provision	264	264	263	264	266	469	475	478	484	491
Private provision	203	203	204	203	201	188	182	179	173	166
Total	467	467	467	467	467	657	657	657	657	657

Note: *Source*: The authors.

Gómez, et al., 2019), as follows. First, we determined the distance from the coast at which the Akaike information criterion (AIC) value of the model was minimized. Figure 6 shows the AIC values and the *p*-value of the Coast variable obtained for distances ranging from 1 km to 20 km. Application of the iterative method shows that the radius of influence of the coast that minimizes the AIC value is 4 km (Figure 6a) and, moreover, that for this distance the coefficient of these variables is highly significant (Figure 6b). Accordingly, a new dummy variable, *Coast*, was incorporated, in which the value 1 was assigned to municipalities located 4 km or less from the coast, and the value 0 otherwise.

4.2 | Econometric analysis of the influence of political and economic factors on the privatization of local public services

After having defined PMI using geostatistical tools, in the second phase of this study an econometric strategy was applied to identify to the extent to which this phenomenon affects the privatization of local public services, and the intensity of its impact. To do so, four models were created for each service, using a pooled logit regression analysis, which revealed the goodness of fit in each case, thus showing which was most appropriate for the present case.

TABLE 4 Description of variables.

Variable	Description	Source
Privatization_Water (PWr)	Dummy variable that takes the value 1 if the water service is privatized and 0 if it is managed directly.	Ministry of Finance and Public Administration
Privatization_Waste (PWs)	Dummy variable that takes the value 1 if the waste service is privatized and 0 if it is managed directly.	Ministry of Finance and Public Administration
Ln_Cost per inhabitant ($t - 1$)	Natural logarithm of the service cost per inhabitant in the preceding year.	Ministry of Finance and Public Administration
Water_Quality ($t - 1$)	Dummy variable that measures service quality according to the sufficient provision of water flow, appropriate water purification treatment, and the internal pressure in domestic water supply. When these aspects were satisfactory during the preceding year, the variable takes the value 1, and 0 otherwise.	Survey of Local Infrastructure and Equipment Ministry of Territorial Policy and Public Function
Waste_Quality ($t - 1$)	Dummy variable that measures service quality according to the availability of containers, their condition and cleanliness and the periodicity of the service. The value 1 is assigned when the service quality in the preceding year is good, and 0 otherwise.	Survey of Local Infrastructure and Equipment Ministry of Territorial Policy and Public Function
Unemployment	Rate of unemployment in the municipality.	National Institute of Statistics
Population_Density	Population density in the municipality.	Ministry of Finance and Public Administration.
Surface	Surface area of the municipality (km^2).	Ministry of Finance and Public Administration.
Coast	Dummy variable that takes the value 1 when the municipality is no more than 4 km from the coast, and the value 0 otherwise.	Determined using a GIS
Ideology	Dummy variable that takes the value 1 if the municipality is governed by a conservative political party, and 0 if it is governed by a progressive party.	Ministry of the Interior
Neighbor_Ideology	Number of neighboring municipalities governed by a conservative political party.	Determined using geostatistical software
Neighbor_Privatization ($t - 1$)	Number of neighboring municipalities where the service was privatized in the preceding year.	Determined using geostatistical software
Neighbor_Ideology_Privatization ($t - 1$)	Number of neighboring municipalities i governed by a party with the same ideology as municipality j and where the service was privatized in the preceding year.	Determined using geostatistical software

Note: *Source*: The authors.

TABLE 5 Models of water service.

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Coeff.	Odds ratio	Coeff.	Odds ratio	Coeff.	Odds ratio	Coeff.	Odds ratio	Coeff.	Odds ratio
Constant	−1.794***	0.166	−2.252***	0.105	−2.593***	0.075	−2.626	0.090	−2.404***	0.090
Ln_Cost per inhabitant (t − 1)	0.056	1.057	0.066*	1.069	0.061*	1.063	0.064	1.048	0.047*	1.049
Water_Quality (t − 1)	0.297***	1.346	0.336***	1.399	0.347***	1.414	0.311***	1.390	0.329***	1.390
Unemployment	0.001***	1.000	0.001***	1.000	0.001***	1.000	0.001***	1.000	0.001***	1.001
Pop_Density	2.541***	12.688	2.382***	10.826	1.977***	7.218	0.937***	8.029	2.083***	8.031
Surface	0.021***	1.021	0.028***	1.028	0.034***	1.034	0.027***	1.033	0.033***	1.033
Coast	1.103***	3.012	1.072***	2.922	1.162***	3.195	1.069***	3.060	1.118***	3.060
Ideology	0.423***	1.527	0.365***	1.440	0.454***	1.575	0.381***	1.463	0.380***	1.463
Neighbor_Ideology			0.133***	1.143						
Privatization_Neighbor (t − 1)					0.272***	1.313				
Neighbor_Ideology_Privatization (t − 1)							0.370***	1.456	0.376***	1.456
AIC	2859.091		2818.708		2656.202		2651.05		2651.05	

Note: The influence of socioeconomic, political, and spatial variables on the privatization of the water service (2015–2019) (*n* = 467). Significance degree is indicated as follows: * 0.05 < *p* < 0.1; ** 0.01 < *p* < 0.05; *** *p* < 0.01.

TABLE 6 Models of waste service.

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Coef.	Odds ratio	Coef.	Odds ratio	Coef.	Odds ratio	Coef.	Odds ratio	Coef.	Odds ratio
Constant	−2.004***	0.135	−2.016***	0.133	−2.141***	0.118	−2.105	0.130	−2.042**	0.130
Ln_Cost per inhabitant ($t-1$)	0.262***	1.300	0.262***	1.300	0.248***	1.281	0.261***	1.299	0.261***	1.298
Waste_Quality ($t-1$)	−0.135	0.873	−0.132	0.877	−0.106	0.900	−0.126	0.882	−0.126	0.882
Unemployment	0.001***	1.001	0.001***	1.001	0.001***	1.001	0.001***	1.001	0.001***	1.001
Pop_Density	−0.278	0.757	−0.278***	0.757	−0.292***	0.747	−0.278***	0.757	−0.278***	0.757
Surface	−0.002	0.998	−0.002***	0.998	−0.001***	0.999	−0.001***	0.999	−0.001***	0.999
Coast	−0.377	0.686	−0.395***	0.674	−0.497***	0.607	−0.437***	0.646	−0.437***	0.646
Ideology	0.101	1.107	0.099	1.104	0.115	1.122	0.098	1.105	0.099	1.104
Neighbor_Ideology			0.013	1.013						
Privatization_Neighbor ($t-1$)					0.241***	1.272				
Neighbor_Ideology_Privatization ($t-1$)							0.131**	1.139	0.131**	1.140
AIC	3609.124		3610.925		3574.251		3568.292		3568.292	

Note: The influence of socioeconomic, political, and spatial variables on the privatization of the waste service (2015–2019) ($n = 657$). Significance degree is indicated as follows: * $0.05 < p < 0.1$; ** $0.01 < p < 0.05$; *** $p < 0.01$.

The models included in this econometric strategy included various control variables as socioeconomic and demographic factors, in addition to the variables discussed in the previous section. This approach enabled us to analyze the spatial influence of these factors on whether the public local services considered were privatized.

Table 3 details the municipalities considered, according to the management form adopted for each service. Table 4 lists all the variables analyzed in this phase of the study; the corresponding descriptive statistics and correlation matrix are shown in Annexes I (Tables A1a and A1b) and II (Tables A2a and A2b).

For each service, Model 1 shows the effect of the socioeconomic, political and demographic variables shown in Table 2, without including the effects of the PMI variables identified in the previous section. Model 2 introduces the effect of PMI on privatization, including mimetic variables and incorporating the variable *Ideology_Neighbors* to reflect the influence exerted by neighboring municipalities according to their political ideology, conservative or otherwise. Model 3 includes the variable *Privatization_Neighbors (t − 1)* to represent the effect produced on privatization decisions by neighboring municipalities that have previously privatized the services in question. Finally, Model 4, with the variable *Privatization_Neighbors_Ideology (t − 1)*, extends our understanding of this phenomenon by focusing on the interaction between the above variables, highlighting the effect produced on privatization when neighboring municipalities have a conservative political ideology and have already privatized the service(s).

Tables 5 and 6 show the AIC statistic calculated for each of the four models generated, for the water management and waste collection services. According to this statistic, Model 4 produces the lowest value and therefore performs best. In addition, the Breusch-Pagan (1980) test was performed to determine whether a pooled model or one with random effects was more appropriate. The result obtained indicates that a model with random effects is preferable to a pooled one, for both services (water management: BP = 11.32, *p*-value = 0.019, waste management: BP = 105.97, *p*-value = 0.000). The Hausman test (1978) was also performed to determine whether a model with fixed or random effects was preferable, and showed that one with random effects was more appropriate, for both services (water management: H = 36.45; *p*-value = 0.11; waste management: H = 0.13, *p*-value = 1.000). In view of these findings, we conclude that the most appropriate specification for our model is that of random effects, both for water supply and for the management of urban solid waste (Campos-Alba et al., 2020; Frondel & Vance, 2010).

The following is the mathematical specification of the logistic regression analysis with panel data:

$$y_{it} = \begin{cases} 1 \text{ if } y_{it}^* > 0 \\ 0 \text{ if } y_{it}^* \leq 0 \end{cases}$$

where y_{it} is the Privatization_water (PWr) (or Privatization_waste (PWs)) binary variable for municipality i and year t and y_{it}^* is a latent variable as follows:

$$y_{it}^* = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + \beta_6 X_{6it} + \beta_7 X_{7it} + \beta_8 X_{8it} + \eta_i + u_{it}$$

in which X_1 is the variable *Ln_Cost per inhabitant (t − 1)*; X_2 is the variable *Quality (t − 1)* specific for each service; X_3 is the variable *Unemployment*; X_4 is the variable *Population_Density*; X_5 is the variable *Surface_area*; X_6 is the variable *Coast*; X_7 is the variable *Ideology*; X_8 is the variable *Privatization_Neighbors_Ideology (t − 1)*, specific for each service; u_{it} is the standard error for each municipality in each year; and η_i is the constant or random variable, depending on whether fixed or random effects are considered, with a mean value and a variance other than 0 Var (η_i).

5 | RESULTS AND DISCUSSION

Tables 5 and 6 present the results obtained by each of the models described in the previous section, for the water supply and waste collection services, respectively. These results confirm the effect of PMI.

Thus, the basic model (Model 1), in which PMI is not included, shows there are differences between the two services according to political ideology. In the case of the water service, this parameter is significant, with a coefficient of 0.423 (p-value of 0.000) and odds ratio of 1.5267 (Table 3), but for the waste collection service, it is not, with a coefficient of 0.101(p-value of 0.221) and odds ratio of 1.1066 (Table 4). In summary, for the water service, there is a 52.67% greater chance that this service will be privatized when the municipality is governed by a conservative-leaning party. However, no such relationship can be established for the waste collection service.

With the inclusion of the Ideology_Neighbors variable in Model 2, we introduce the consideration that for both of these public services the existence of a neighboring municipality governed according to a conservative ideology might have an impact on any decision taken regarding privatization. This relationship was found to be significantly positive for the water service, but not for the waste service (coefficient = 0.133, p-value = 0.000; coefficient = 0.013, p-value = 0.656, for the water and waste services, respectively). Thus, the odds ratio of 1.143 of this variable for the water service tells us that for each neighboring municipality i, managed by a conservative party, unlike municipality j, the chances of j having privatized its water service would increase by 14%. Furthermore, from the results obtained for the variable Privatization_Neighbors ($t-1$) in Model 3, it follows that the existence of a neighboring municipality where these services have been privatized also increases the probability of the presence of privatization for both services (coefficient = 0.272, p-value = 0.000; coefficient = 0.241, p-value = 0.001, for the water and waste services, respectively). The odds ratios of this variable for the water and waste services (1.3125 and 1.2718, respectively), show that the water and waste services are 31.25% and 27.18%, respectively, more likely to be privatized when a neighboring municipality has previously done so. Finally, the inclusion in Model 4 of the Privatization_Neighbors_Ideology variable ($t-1$) seems to indicate the presence of PMI, showing that the existence of a neighboring municipality where the governing authority has a similar ideology and where the service was privatized in the previous year is positively related to the private provision of both services (coefficient = 0.370, p-value = 0.000; coefficient = 0.131, p-value = 0.018, for water and waste, respectively). This conclusion is corroborated by consideration of the odds ratio, with values of 1.4564 and 1.1398 for the water and waste services, respectively. These values indicate there is a 45.64% greater probability of the water service being privatized when the neighboring municipality is governed by a party with a conservative ideology, and a 13.98% greater probability for the waste collection service.

In view of the confirmation by Model 4 of the influence of PMI on the presence of privatization, and in accordance with the AIC analysis performed (which corroborates the validity of the logit models considered), we conclude that Model 4 is the most appropriate means of explaining the phenomenon addressed.

The results of the panel data logistic regression with random effects are presented in Model 5, the suitability of which was confirmed by the Breusch–Pagan test and the Hausman test. This model determines whether the time effect has a significant impact on the privatization decision. In this case, too, the results corroborate the existence of a positive relationship between PMI and privatization, for both services (coefficient = 0.376, p-value = 0.000 for the water service; coefficient = 0.131, p-value = 0.017 for the waste service; Tables 3 and 4). These results confirm the study hypothesis, suggesting that the privatization decision may indeed be influenced by the presence of neighboring municipalities with the same political ideology and where the service in question is already privatized.

In the following, we comment on the results obtained by Model 5.

In addition to the significant association between PMI and privatization, other theoretical arguments in this respect concern economic criteria and the quality of service provision. In these respects, our results show that, for the water service, the variable Ln_Cost per inhabitant ($t-1$) is not significant (Table 3), which contrasts with previous research findings, according to which the expected cost saving is one of the most important factors underlying the privatization decision (Carr et al., 2009; López-Hernández et al., 2018; Wassenaar et al., 2013). This association was empirically established by Pérard (2009). However, for the waste collection service a significant positive relationship was observed between service provision cost and privatization (coefficient = 0.261, p-value = 0.000, Table 4), which corroborates the results obtained by Dijkgraaf and Gradus (2007) and by Bel and Fageda (2008), since, in terms of the odds ratio, the probability of the waste collection service being privatized as costs increase, rises by 29.79%. This difference between the two services might arise from the particular characteristics of each

one. Thus, for the water service, a large proportion of the costs incurred are fixed, reflecting the necessary maintenance of the network (Sauer & Frohberg, 2007), and these costs are unlikely to be reduced by privatization. However, in the case of the waste service, privatization may lead to improvements in cost efficiency, as observed by Pérez-López et al. (2018) and Soukopová et al. (2022).

With respect to other variables that may be associated with privatization, our results indicate that service quality, for the water service (Table 3), has a coefficient of 0.329 (p-value = 0.002 and odds ratio = 1.390). In other words, the service quality achieved during the previous year bears a positive significant association with the privatization of the service, increasing the probability of the service being privatized by 39%. This finding contrasts with the results obtained by Ruester and Zschille (2010), who reported that good service quality tended to reduce the probability of privatization. In the case of the waste collection service, however, we find that considerations of service quality are not significant to the privatization decision (Table 4), which confirms previous findings in this respect by Zafra-Gómez, López-Hernández, et al. (2016) and Zafra-Gómez, Plata-Díaz, et al. (2016).

Bel and Fageda (2017) and Warner and Aldag (2019), among others, have suggested that economic concerns play a stronger role than political issues in the privatization decision, for municipal services in general. This belief is corroborated by Ruíz-Villaverde et al. (2015), González-Gomez et al. (2011), and Chong et al. (2015) with respect to the water service in particular, although Picazo-Tadeo et al. (2012) reached the opposite conclusion. Nevertheless, the results obtained in the present analysis lead us to believe that the presence of PMI may affect the relationships between privatization and the factors that, according to NPM, have traditionally been considered determinant in this decision, that is, cost and quality. As commented above, in the present study, quality and cost are not significantly associated with the privatization decision in all of the models analyzed or for all of the services studied. The same is true for political ideology. Furthermore, the detailed model considered in our analysis shows that the inclusion of PMI improves the quality of the model (AIC = 2651.05 and 3568.292, for the water and waste services, respectively), reflecting the greater importance of political considerations when this possible mimicry effect is included in the model, for both services.

According to our results, the *Coast* variable exerts a positive influence on privatization, with a coefficient of 1.118 (p-value = 0.000) and an odds ratio of 3.059 for the water service (Table 3). Accordingly, this service is 206% more likely to be transferred to private management when the municipality is relatively close to the coast (Carpentier et al., 2006; Miralles, 2009). On the other hand, for the waste service, the same variable has a significant negative effect (coefficient = −0.437, p-value = 0.000; odds ratio = 0.646), meaning that proximity to the coast reduces the probability of the service being privatized by 35.4% (Table 4). This finding is contrary to our expectations, and also to the conclusions of Bel and Mur (2009), among others, that the existence of greater seasonal demand for this service would make it more likely to be privatized.

Our results show that the unemployment rate is significantly, and positively associated with the provision of both services via privatization, which is in line with the theoretical arguments of Balaguer-Coll et al. (2019) and Pérard (2009). Thus, the higher the rate of local unemployment (as a proxy of economic distress), the greater the probability that the service will be managed privately.

For the water service, population density was found to affect privatization significantly and positively, which contrasts with the results obtained by González-Gomez et al. (2011) for the same service (Table 3). Our findings may be explained by the lower transaction costs of privatization in densely population areas, which is in line with Pérard (2009). For the waste service, however, this factor has a significant negative association with privatization, with a coefficient of −0.278 (p-value = 0.001 and odds ratio of 0.757) (see Table 4). Thus, for a higher population density, the probability of the waste collection service being privatized decreases by 24.3%. This finding corroborates the earlier results of Gradus et al. (2014), and Domberger et al. (1986), who observed that a high population density is often associated with shorter distances involved in providing the service, which reduces costs and therefore decreases the probability of privatization.

For the water service, the surface area of the municipality exerts a significant positive influence on the privatization decision, with a coefficient of 0.033 (p-value = 0.000 and odds ratio of 1.0332) (Table 3). In other words, the likelihood of this service being managed privately rises by 3.32% for municipalities with a larger

surface area, which is in accordance with the results reported by Antonioli and Filippini (2001). For the waste collection service, on the other hand, more extensive municipalities are less likely to privatize the service (coefficient $= -0.001$; p-value $= 0.000$; odds ratio $= 0.9985$; Table 4), which is contrary to the conclusions of Greco et al. (2015) in this respect.

6 | CONCLUSIONS

To date, research has not fully corroborated the NPM arguments in favor of privatization, such as the cost saving and/or quality improvement it is claimed to provide. The continuing debate underscores the need to conduct a more extensive study of privatization, including aspects previously ignored in most previous analyses, in order to obtain a better understanding of why local authorities decide to privatize public services.

The expansion of privatization in the provision of some local services may be a response from policymakers to the uncertain scenario whereby they must decide which management mode is most suitable. When similar local public entities privatize, public managers will usually take similar decisions, thus seeking to legitimize their actions, as DiMaggio and Powell (1983) pointed out in their study of institutional isomorphism. This imitational behavior will be stronger between public entities presenting greater similarities, thus producing mimetic isomorphism.

In view of these considerations, we propose the consideration of a theoretical approach to public administration, framed within that of institutionalism, namely PMI, according to which an imitation effect is exerted on the outcome of privatization decisions when neighboring municipalities share the same political ideology. To examine this question, we employ various geostatistical tools based on spatial econometrics and logistic regression, applied to the water supply and waste collection services of Spanish municipalities for the period 2014–2017.

The results obtained show that, in recent years, the political/ideological association between municipalities has acquired increasing importance in the privatization of their services, and that this relationship could impact on the decisions taken by policymakers, over and above the factors traditionally considered in this respect. This hypothesis rests on the well-established imitation effect between neighboring municipalities in terms of the privatization of local services. Specifically, municipal governments with a similar political ideology tend to adopt the same decisions regarding the public/private management of their services. Future research should contextualize this understanding within the global economic panorama that emerged following the 2008 financial crisis (the 'Post-Great Recession'), in which the principles of economic theory were subordinated to the presence of responses derived from PMI, concerning political-geographic relationships, the neighborhood effect and mimetic-political influences. All of these factors underlie local governments' decisions on the privatization of public services.

Despite the above, however, previous studies in this field have concluded that economic considerations outweigh political ones in deciding whether to privatize a public service or to maintain the public delivery form (Chong et al., 2015; González-Gómez et al., 2011; Warner & Aldag, 2019). The reason for this is that, although the PMI model appears to account for the decisions to privatize municipal services, the results we present should be considered within the specific context addressed, that of local government in Spain. This country has a continental European tradition, but this is not always the case. For example, in the United States, ideological considerations do not exert a strong influence on local government, due to their particular administrative structure (Hytönen, 2016). Moreover, the application of the theoretical framework we present is focused on services characterized by their great complexity and high asset specificity. Further research is needed to analyze the application of the PMI model to other municipal services with different characteristics.

A significant limitation to the present study is that it was not possible to separate the effects of normative and coercive isomorphism (if any) within our analysis of the explanatory factors of privatization.

Nevertheless, the study presented in this article makes an interesting contribution to the literature on the privatization of municipal services, presenting a new theoretical model to account for this decision in terms of political interests and possible mimetic behavior between neighboring municipalities. It should be noted that in the current social panorama, in which the COVID-19 pandemic has had a devastating effect, the provision of public services may soon be affected by another major cross-border economic crisis (Ansell et al., 2010), provoking severe financial difficulty, aggravated by a probable increase in the demand for municipal services. In consequence, the recent tendency for local governments to remunicipalize services that had previously been privatized (Campos-Alba et al., 2020) may be halted or inverted in the not too distant future (López-Hernández et al., 2018). Accordingly, further research should be undertaken, focusing on the privatization of municipal services, especially those most exposed to the above-mentioned economic consequences, such as healthcare or welfare services. Finally, the importance of pragmatic or political factors may present a cyclical pattern. Thus, according to Warner and Aldag (2019) and Gradus and Budding (2020), some privatization-remunicipalization processes may reflect a pendulum swing. Accordingly, further study of this phenomenon is needed to enhance our understanding of the factors underlying privatization.

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

PEER REVIEW

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DATA AVAILABILITY STATEMENT

Dataset was uploaded to Harvard Dataverse, and is submited for review. It can ben checked in the following link: https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi%3A10.7910%2FDVN%2FRHS4L6&version=DRAFT

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ENDNOTES

[1] The role of the public authority manager in Spain is very different from that found in the United States. In Spain, public managers are appointed directly by politicians, which at the local level means the mayor, and their legitimacy is acquired at the ballot box (Garrido Falla, 1980). For this reason, the decisions taken on service provision do not always have an economic justification, but may also depend on political factors (Miller & Whitford, 2016).

[2] The mathematical expression for the unbiased estimator of the experimental variogram (Matheron, 1970) is:

$$\widehat{\gamma}(h) = \frac{1}{2N(h)} \sum_{i=1}^{N(h)} \left[y(s_i + h) - y(s_i) \right]^2$$

where $y(s_i + h)$ and $y(s_i)$ represent the type of management adopted in two municipalities, geographically separated by a Euclidean distance h, where $N(h)$ is the number of neighboring municipalities that are separated by this distance.

[3] The theoretical exponential model of the fitted variogram (Cressie, 1991; Matheron, 1970) is defined as

$$\gamma(h) = \begin{cases} C_0 & h = 0 \\ C_0 + C\left[1 - \exp\left(-\dfrac{h}{a}\right)\right] & h > 0 \end{cases}$$

where C_0 is the "nugget effect", a is the range and $C_0 + C$ is the threshold. The range represents the zone of influence of the management type and is equal to the distance at which the threshold is reached.

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ANNEX I

DESCRIPTIVE STATISTICS

TABLE A1a Descriptive statistics for the water service, period 2015–2019 ($n = 467$).

Variables	Obs.	Mean	SD	Min	Max
Ln_Cost per inhabitant ($t - 1$)	2335	3.704	1.363	−3.148	15.860
Water_Quality ($t - 1$)	2335	0.707	0.455	0	1
Unemployment	2335	606.863	816.558	18	5170
Pop_Density	2335	0.211	0.474	0.003	4.815
Surface	2335	11.164	13.720	0.228	96.899
Coast	2335	0.096	0.295	0	1
Ideology	2335	0.535	0.499	0	1
Neighbor_Ideology	2335	2.603	2.425	0	11
Neighbor_Privatization ($t - 1$)	2335	2.313	2.729	0	15
Neighbor_Ideology_Privatization ($t - 1$)	2335	1.431	1.849	0	11

TABLE A1b Descriptive statistics for the waste collection service, period 2015–2019 ($n = 657$).

Variables	Obs.	Mean	SD	Min	Max
Ln_Cost per inhabitant ($t - 1$)	3285	3.606	0.866	−3.500	5.934
Water_Quality ($t - 1$)	3285	0.657	0.475	0	1
Unemployment	3285	711.427	890.833	15	5179
Pop_Density	3285	0.243	0.616	0.003	9.689
Surface	3285	108.461	133.707	2.285	968.999
Coast	3285	0.610	0.488	0	1
Ideology	3285	0.509	0.499	0	1
Neighbor_Ideology	3285	1.520	1.706	0	7
Neighbor_Privatization ($t - 1$)	3285	0.784	1.064	0	6
Neighbor_Ideology_Privatization ($t - 1$)	3285	0.464	0.781	0	5

ANNEX II

CORRELATION MATRIX

TABLE A2a Water supply service.

	1	2	3	4	5	6	7	8	9	10	11
1. Privatization	1										
2. Ln_Cost per inhabitant ($t-1$)	0.048**	1									
3. Water_Quality ($t-1$)	0.079***	0.029	1								
4. Unemployment	0.197***	−0.143***	0.082***	1							
5. Pop_Density	0.239***	0.004	0.013	0.262***	1						
6. Surface	0.027	−0.043**	−0.021	0.191***	−0.222***	1					
7. Coast	0.206***	0.046**	0.086***	0.231***	0.155***	−0.115***	1				
8. Ideology	0.115***	0.018	−0.018	0.077***	0.061***	−0.136***	0.103***	1			
9. Neighbor_Ideology	0.152***	0.013	−0.027	−0.050**	0.138***	−0.334***	0.152***	0.186***	1		
10. Neighbor_Privatization ($t-1$)	0.314***	0.041**	0.006	−0.013	0.252***	−0.289***	0.098***	0.055***	0.655***	1	
11. Neighbor_Ideology_Privatization ($t-1$)	0.306***	0.072***	0.023	0.012	0.195***	−0.288***	0.159***	0.131***	0.807***	0.854***	1

Note: The significance degree is indicated as follows: * $0.05 < p < 0.1$; ** $0.01 < p < 0.05$; *** $p < 0.01$.

TABLE A2b Waste collection service.

	1	2	3	4	5	6	7	8	9	10	11
1. Privatization	1										
2. Ln_Cost per inhabitant $(t-1)$	0.084***	1									
3. Water_Quality $(t-1)$	−0.004	−0.045***	1								
4. Unemployment	0.248***	0.066***	0.079***	1							
5. Pop_Density	0.056***	0.075***	−0.151***	0.372***	1						
6. Surface	0.009	−0.052***	0.179***	0.246***	−0.204***	1					
7. Coast	−0.015	0.215***	−0.139***	0.082***	0.127***	−0.243***	1				
8. Ideology	0.026	−0.026	−0.083***	0.031*	0.042**	−0.086***	0.093***	1			
9. Neighbor_Ideology	−0.003	0.139***	−0.168***	−0.041**	0.085***	−0.308***	0.467***	0.109***	1		
10. Neighbor_Privatization $(t-1)$	0.112***	0.119***	−0.113***	0.029	0.108***	−0.253***	0.274***	0.017	0.475***	1	
11. Neighbor_Ideology_Privatization $(t-1)$	0.053***	0.097***	−0.103***	0.056***	0.097***	−0.227***	0.324***	0.053***	0.646***	0.733***	1

Note: The significance degree is indicated as follows: * $0.05 < p < 0.1$; ** $0.01 < p < 0.05$; *** $p < 0.01$.