Do differences in publicness explain differences in performance?

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Paper for the International Conference of Public Policy, Singapore, 28-30 June 2017

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Abstract

The impact of the degree of publicness, i.e. the extent to which organizations are publicly owned, funded, and controlled, on organizational performance has been subject to continuous academic debate. Empirical studies on the topic provide indefinite and contradicting conclusions, mostly focus on only one publicness or one performance dimension, and scrutinize simple rather than complex and highly professionalized service delivery. This study assesses the impact of different degrees of publicness on performance in the context of hospital care and takes into account various performance indicators at once. We compare three distinct hospital governance models with a varying degree of publicness in the Autonomous region of Madrid (Spain) and conduct statistical and qualitative analysis using survey and interview data on effectiveness, efficiency and quality. In a preliminary assessment, we find mixed results. In general, the efficiency and effectiveness are higher in hospitals with less degree of publicness, although not in all considered variables. Satisfaction with medical professionals and with the infrastructure is also higher in these hospitals. However, the results for which patients are in hospitals, for instance, the treatment of pain does not display any relevant difference in organizations with different levels of publicness.

Introduction

In search of more effective and efficient public service delivery, many governments implement private sector management techniques in the public sector or intensify private sector involvement through privatization, outsourcing, public-private partnerships, and other hybrid governance forms. Hybridization blurs the boundaries between the public and private sector therewith challenging the traditional dichotomous notion of ´public´ and ´private´ organizations. As described by Moulton (2009), the dichotomous approach considers organizations public or private, depending on the single dimension of ownership (Rainey, Backoff, and Levine 1976). The notion of a (multi)dimensional continuum of ´publicness´ or ´organizational publicness´ has gradually replaced this traditional approach (Andrews, Boyne and Walker 2011; Bozeman 2004; Bozeman et al., 1992; Bozeman and Bretschneider, 1994, Moulton 2009).

Organizational publicness "recognizes varying degrees of public influence (political authority) over all forms of organizations" (Moulton 2009, 889). The degree of publicness is measured along the dimensions of ownership, funding, and control (Bozeman 1987) and is suggested to explain organizational performance in terms of, amongst others, effectiveness, efficiency, and quality. Advocates of public sector reforms believe that private sector involvement and the use of private sector management techniques will improve public sector performance suggest that a high degree of publicness correlates negatively with organizational performance, while a lower degree of publicness correlates positively with organizational performance (Osborne and Gaebler 1992; Osborne and Plastrik 1998). Opponents of such reforms suggest that an improvement of organizational performance in terms of, for example, financial efficiency will be realized at the expense of service quality (Box 1999).

Whether public or private ownership, funding, and control have a positive or negative effect on organizational performance is subject to continuous academic debate. Andrews, Boyne and Walker (2011: 301) state that most claims on the relation between the degree of publicness and organizational performance "amount to little more than ideological assertions based on the preferences of protagonists." Various scholars have empirically scrutinized the relationship between the degree of publicness and organizational performance although not always explicitly referring to the publicness concept (Domberger and Jensen 1997; Fumagalli, Garrone and Grilli 2007; Galiani, Gertler and Schargrodsky 2005; Moulton 2009; Van Slyke 2003, Chakrabarty, Whitten, and Green 2008; Jensen and Stonecash 2005).

Research outcomes are mixed (cf: Domberger and Jensen 1997; Fumagalli, Garrone and Grilli 2007) and difficult to compare given that most studies define and operationalize publicness and performance differently (Andrews, Boyne and Walker 2011: 303). In that respect, Moulton (2009: 889) concludes that recent empirical studies on the effect of publicness demonstrate a modest or nonexistent effect on organizational performance and ascribes this to an inadequate and incomplete operationalization of the publicness concept. On the contrary, results of an international comparative analysis on dimensions of publicness and its

impact on organizational performance suggest that publicness makes a difference to the performance dimensions efficiency and equity but suggest these findings vary depending on specific case characteristics (Andrews, Boyne and Walker 2011: 301). The studies considered in this comparative analysis (N=31) focus on one performance dimension (mostly effectiveness or efficiency) and one publicness dimension (ownership, funding or control), with the exception of Bartel and Harrison (2005) and Heinrich and Fournier (2004).

Andrews, Boyne and Walker (2011: 301) conclude that there is a need "for research that includes all dimensions of publicness and a variety of performance measures" in order to explain organizational performance. Moreover, they propose that future research should take into account the moderating effects of the features of organizations and the environmental constraints on performance. In addition, Andersen and Blegvad (2006) suggest that the impact of publicness on organizational performance should not only be scrutinized in simple technical services for which performance indicators are easy to establish (Domberger and Jensen 1997; Boyne 1998; Blom-Hansen 2003), but should focus on highly professionalized services such as hospital care (Andersen et al. 2016). In this sector, the establishment of performance indicators might be far more complicated: whereas publicness might not be of great impact in standardized services, it might be relevant for highly professionalized service delivery.

In this article, we follow these suggestions by assessing the impact of publicness (including the dimensions ownership, funding, and control) on organizational performance (including effectiveness, efficiency and quality as performance dimensions) in the context of hospital care. We therefore consider three distinct hospital governance models with a varying degree of publicness in the Autonomous region of Madrid (Spain) and analyze quantitative survey data and qualitative interview data on efficiency, effectiveness, and quality.

The structure of the rest of this paper is as follows. The first section deals with the multidimensionality of performance; the way of measuring it; and the relation between performance and professionalism. The following section discusses the publicness concept and its relation with performance by reviewing theoretical arguments and hypotheses in this relation. The third section provides background information on reforms of public hospital care provision in the Autonomous region of Madrid that has resulted in the application of three different hospital governance models with a different degree of publicness. The method section describes the mixed method approach, the process of case selection, data collection, and data analysis. The finding section presents the results per performance dimension. Finally, we contrast our findings with results from earlier studies and suggest new routes for further research.

Conceptual and theoretical framework

Performance: multidimensionality, measurement, and professionalism.
In this section, we discuss the multidimensionality of the concept of performance, challenges related to its objective and subjective assessment and its relation to the concept of professionalism.

Performance can be defined as the actual organizational achievement of output or outcome relative to the intended goals and objectives in a specific period of time (Jung 2011: 195). According to Walker, Boyne and Brewer (2010), this definition hides its multidimensionality. Multiple values such as efficiency, effectiveness, equity, value for money, responsiveness to customer's needs and satisfaction of users with service delivery are of relevance when assessing performance. Moreover, performance may entail the combination of different degrees of achievement in each of these dimensions since organizations may set multiple goals. Organizations, for example, may provide high service quality in an inefficient way if resources are not scarce or effective cure of some patients may take place at the cost of equity of treatment to all citizens.

The *assessment of performance* is not straightforward. Performance is constructed on the definition of specific goals by an organization (Andersen, Boesen, Pedersen 2016: 1). However, in highly professional settings (health, social services, education), this "goal model" suffers complications given that there is often a clash between the goals of professionals, users, and managers and/or the way in which they consider that the organization has accomplished these goals. Andrews, Boyne and Walker (2011a) find in a meta-analysis on the perception of performance, for example, variance between the judgements of different stakeholders.

Furthermore, there are differences between subjective and objective measures of performance and its relation with performance achievements. Subjective measures of user satisfaction with service provision can be contrasted with other objective criteria that assess the outcomes of the health, education or social cohesion of citizens or the outputs of one organization like the grades obtained in high school, the number of surgeries per doctor or percentage of ambulatory surgery. The subjective criterion of patient satisfaction with medical services can often be considered a proxy of satisfaction with the service operation or the outcome of being treated (Moynihan et al. 2011: 143). Some studies show that subjective evaluations of citizens and objectively measured outputs and outcomes show close correspondence (Van Ryzin, Immerwahr and Altman 2008). Other studies that concern simple technical local services in which the degree of political authority and publicness is high, however, do not find this correspondence (Kelly 2003, Kelley and Swindell 2002). Overall, an assessment of performance using objective and subjective measures among organizations with different degrees of publicness is missing.

Finally, the *degree of professional control* on a particular public agency also influences the multidimensionality of performance. In the most classical sense, "profession" refers to an organized occupation in which its main actors have the power to determine who is qualified to execute a defined set of tasks, and who control the criteria through which its performance is evaluated (Freidson 2001). Professionalism replaced, to some extent, the bureaucratic rationality of public administration as proposed by Weber. Research, education or the provision of health care are considered too idiosyncratic and difficult to standardize through protocols and routines. In such professionalized areas, the judgment of professionals, rather than strict adherence to norms, constitutes service provision. These professionals are characterized by their membership to professional colleges (doctors, lawyers and architects, for instance) who control the training, certification, and the processes to create knowledge and skills to be used (Freidson 2001: 73, 79, 198).

Freidson (2001) contrasts the professional logic with the logic of the market (users) and the logic of the bureaucracy (managers and directors) and suggests that professionals act rather independently from political authority and market forces in their purest form. Rather than stressing efficiency, professionals value equity, the quality of their work, and the relevance of the provided service. These values move away from the logic of the market that focuses on consumers, choice and competitiveness. Professionals do not have a mechanical specialization, which puts the emphasis on producing goods and services in quantity. The focus lies on their adaptive capacity to address the qualitative differences that underlie individual tasks. However, since recently managerial approaches overlap with professional values. Rankings, performance contracts, choice and the like constitute the backdrop against which governments manage their own universities, hospitals, schools and primary care centres. Strong managerialism with tight control from the top on autonomous professionals ends up in a process of hybridization (Noordegraaf 2007). Therefore, it is expected that policy areas with the traditional professional dominance that are subject to increasing managerial top down control from authorities and general managers are likely to experience a greater emphasis on efficiency (and potentially choice by users) than in contexts in which professionalism is still prevalent. Likewise, the focus on the market and choice that undermines professional values may play against the equity of service delivery, understood as equal chances to receive equal treatment from professionals.

Publicness and performance: arguments and hypothesis

This section links different organizational degrees of publicness to the achievement of performance. An established tradition in public administration literature examines the differences between public and private sector organizations (Rainey, Backoff and Levine 1976, Allison 1979, Rayney 1983, Bozeman 1987, Bozeman and Bretschneider 1994, Chandler 1991). Due to developments such as the rise of the New Right and New Public Management, alternative modes of ownership, funding, and control have arisen and given way to a new generation of studies on how to understand the differences between public and private sector organizations (Andrews, Boyne and Walker (2011, 301).

The one-dimensional approach to classifying organizations as public or private based on ownership only has been replaced by a multidimensional lens known as “publicness” since the influential work of Bozeman (1987, 2007). His conceptualization of publicness includes the dimension of ownership, funding, and control and considers each dimension as continuous rather than categorical. The relative score of an organization on these dimensions represents the organization´s degree of publicness. The degree of publicness alongside these three dimensions is suggested to impact organizational performance and, furthermore, is understood to influence ´inter organizational variables´ like managerial values, structures, performance and goals (Boyne 2002; Andrews, Boyne and Walker 2011, 303).

In this study, we aim to understand the impact of the varying degree of publicness on performance defined as the efficiency, effectiveness, and quality of services provided in the specific context of public hospital health care provision. In order to formulate hypotheses on the relation between publicness and performance, we hereafter consider the theoretical arguments on the relation between publicness and performance considering respectively the three above-mentioned dimensions of publicness: ownership, funding, and control.

Ownership refers to who has the responsibility for organizational performance. Individuals and institutional shareholders own private firms while political communities (usually democratically elected municipalities and regional or national governments) collectively own public agencies. Andrews, Boyne, and Walker (2011: 303-304) derive the expectations on the impact of ownership on organizational performance from public choice theory. On the one hand, public ownership is suggested to lead to a less efficient use of resources because managers of publicly owned organization do not have an incentive to safeguard efficiency since they will not obtain any reward for doing so. Privately owned organizations, however, are believed to be more efficient given the use of specific management techniques and incentives in the form of higher rewards for managers and higher returns for shareholders.

Funding refers to the extent to which organizations deliver services financed with taxpayers’ money or customers’ payments. In general, public agencies are funded largely by taxation rather than fees directly paid by customers, which is a central feature of private sector organizations. Between these two extremes, there is a wide range of alternatives whereby users may support a publicly provided service through user charges. In many countries, for example, education is largely paid for by taxpayers’ money while students also cover partially the costs of education through fees. In most cases, public agencies obtain their financing ‘en bloc’ from political sponsors rather than in discrete sums in exchange for each provided service or product. Niskanen (1971) established that public agencies that obtain their financing from political sponsors are unlikely to be responsive to users’ needs. The payment of lump sums makes these agencies less effective and users will be less satisfied. Furthermore, these organizations are likely to experience information asymmetry as suggested by principal-agent theory. This means that bureaucrats are more knowledgeable on the resources that they really need to operate services while politicians sometimes lack expertise and concrete

knowledge to assess the correct level of appropriations of the agency. Organizations that solely receive public financing 'en bloc' are suggested to be less efficient and effective and are believed to provide less service quality in comparison to private or mixed types of funding via discrete sums or conditional payments.

Control refers to the extent to which political authority instead of market forces restrain organizational behaviour. More specific, it refers to the extent to which political demands and regulation rather than customer demands and competitive pressure constrain organizational behavior (Dahl and Lindblom 1953). Nutt and Backoff (1993) maintain that the priorities of political authorities affect the political expectations and the managerial behavior of the agency. Political control can be exercised through different mechanisms such as performance reports and monitoring meetings, inspections, audit reports and the like. If inspections, monitoring, and audits are initiated by different stakeholders they may impose contradictory demands on public agencies which may jeopardize the achievement of agreed upon objectives and may deem public agencies less effective in achieving their goals (Andrews, Boyne and Walker 2011: 304). Besides, a high level of political control normally implies a lower level of economic independence or market control. Andrews, Boyne and Walker (2011: 305) maintain that competitive market pressure facilitates consumer's responsiveness and satisfaction as well as more effective service delivery. Market pressure can be exerted by other private enterprises that are delivering the same service (such as private universities, schools or hospitals) or by the creation of quasi-markets with similar public agencies competing for resources (such as, health trusts or other publicly owned schools). Quasi-markets can be fostered either through league tables and choice by users or directly by rewarding higher levels of performance and punishing underperformance..

When analysing control, the role of the profession might be of relevance. Professionals are characterized by having access to similar education and norms that belong to a particular profession. Professional norms therefore may assimilate organizations that are on a different extreme of the publicness continuum since professional norms are likely to reduce the influence of market forces or political authority as suggested by Andersen et al. (2011). The share of strong professional norms that are sanctioned by the entire occupation may influence the behaviour regardless the ownership. This means that safety standards and surgery procedures, everything else equal, should be applied similarly in private and public sector clinics, for instance. Therefore, one would not expect a great variation in the satisfaction of patients with medical staff from organizations with different degree of publicness. However, as Andersen et al. (2011) suggest, non-clinical factors like the infrastructure and the auxiliary services may play a role in differentiating private and public hospitals. According to Conner-Spady et al. (2004) patients choose hospitals considering factors like the quality of the meals, the possibility to be alone in the room and the length of the waiting times, provided that health care is equal. Since non-clinical factors are not ruled by professional norms but by management and type of ownership, it is expected then that

private sector hospitals are likely to offer higher non-clinical standards than public sector hospitals.

Since the three dimensions ownership, funding, and control are likely to pull in the same direction, i.e. an organization subject to high level of political control is likely to receive block grants from taxpayers' money and be under overall public ownership, collinearity among variables are expected. Following the theoretical arguments described above, we expect hospitals that are publicly controlled, funded, and owned to be less efficient and effective and to provide less quality leading to the following hypotheses:

The higher the degree of publicness…

Hypothesis 1: …, the lower effectiveness will be.

Hypothesis 2: …, the lower efficiency will be.

Hypothesis 3: …, the lower the satisfaction of users with infrastructure quality.

Hypothesis 4: In professional environments, the higher the homogeneity of professionals, the lower the differences in satisfaction among users from organisations with different degree of publicness.

However, the degree of publicness of particular public sector organizations may differ for each of the above-mentioned dimensions. It may well be that all organizations are subject to the same level of political authority in terms of regulation, monitoring and inspection but differ in terms of ownership of the infrastructure and the services provided. This variation depends on the selected case studies. Furthermore, other intervening variables may affect the level of performance. For instance, Andrews, Boyne and Walker (2011) suggest that the organizational characteristics like the complexity of governance structures or the size of the organization may affect its performance.

Methodology

This section justifies the selection of the hospital care in Madrid in order to assess to what extent different degrees of publicness may have an impact on performance. The section deals with three issues: 1) the features of hospital care in the region of Madrid in line with the recent managerial approach in other countries; 2) the selection of the different hospital governance structure; 3) the quantitative and qualitative methods that have been used.

Public Hospital Care in Madrid

The health sector consumes an average of 17.7% of the public budget in OECD countries and 13.3% in Spain (OECD 2015: 73). The influence of the managerial approach in the health sector is visible in multiple facets at the international level. First, efficiency has priority over the

quality of service provision on many occasions (Kirkpatrick et al 2005). Second, the "trust" system (Le Grand 2009) has been weakened, based on the professionalism of doctors without control by management, as a system of hospital management. To this end, a "cadre" of professional hybrids has been created that must take into account both professional and managerial values (Bevan and Wilson 2013). Third, a number of governance structures have been introduced that resemble hospital management in the context of the "market" (Barlow et al., 2013). In particular, the creation of internal markets for patient choice has been fostered through which the allocation of resources follows the patient's choice. The patient, instead of being assigned a primary care physician and a hospital to attend, can choose the professionals and places to be cared for. Fourth, rankings and league tables are often used as instruments to inform patient's choice.

The Spanish healthcare system has experimented different management instruments and governance structures that echo these international developments. Spain can be considered a pioneer in the application of new organizational forms in public hospital care. The approval of Law 15/1997 (Enabling New Forms of Management of the National Health System) paved the way for new forms of government such as public enterprises and DBFMOs (Design-Build-Finance-Monitor and Operate) long-term contracts performed by a private consortium (Allard and Trabant, 2008). During the last decades, Spain has implemented different governance models for public hospitals in different Autonomous Communities. Originally, hospital care has been provided by the public sector in Spain. The Spanish Constitution recognizes the universal right to health and the obligation of public institutions to guarantee this right regardless the governance structure of hospitals. The Health Act 1986 laid the foundations of the current National Health Service to ensure the provision of free public health care financed with public funds. The hospitals of the system were initially financed with public funds and public officials operated both clinical and non-clinical services. Gradually, auxiliary services, such as cleaning and food supply, were outsourced to private enterprises via short-term contracts (2-5 years).

Together with this more traditional model, other formulas have emerged. Among these formulas, DBMFO contracts for hospital care have been used in Spain since 1999, with the pioneering experience of the Alzira hospital in the Autonomous region of Valencia (Sánchez, Abellán and Oliva 2013). After this example, other hospitals in Valencia and other regions such as Madrid and the Balearic Islands have followed suit. The Autonomous Community of Madrid uses DBFMO contracts for non-clinical hospital services since 2005 and for clinical services since 2009. In 2011, Barlow et al. (2013) catalogued 19 hospitals with a DBFMO regime in Spain representing a total value of 2.3 billion euros. Of the nine countries that these authors analysed, only Spain had examples that included clinical services in addition to secondary or non-clinical services.

Apart from the hybridisation of governance structures, the hospital system of the Madrid region has introduced several managerial techniques from the private sector. First, patients

are allowed to choose their primary care centres and hospitals. In a region with high density population and good public transportation network, most hospitals are within a range of no more than an hour drive from the citizens' residence. Second, regardless of who is the operator (private or public) managing the contract, there is a single corporate image of the whole hospital system. Hospitals have to display the logos and stationery of the regional ministry of health and they are forbidden to carry out active campaigns of marketing to attract clients. Third, since 2013, the regional ministry of health has created an observatory with a repository of performing data from hospitals publicly accessible. The information allows citizens to compare performance levels of different hospitals. These rankings, however, do not have any impact on the budgetary allocation or on the payment of bonuses of any sort. Fourth, hospitals have to sign a performance contract with the regional government in which they agree on the service levels to be provided. Finally, most hospitals have implemented quality excellence models. In sum, regardless of the degree of publicness of the different hospitals, there is certain managerial uniformization. This homogeneity also applies to the medical profession. The degree of homogeneity of the faculties of medicine, the entry in the professional associations and the acquisition of specialized training for the different specialities is applied to professionals working in both private and public hospitals.

Case selection

In this study, we scrutinize three different governance structures for the provision of public hospital care in the Autonomous Community of Madrid. Each modality represents a different degree of publicness, namely: direct public provision (N= 18); DBFMO operating non-clinical services but clinical services provided by public doctors (N= 8); and private providers that include pure private owners or public owners with public sector operators of clinical and non-clinical services (N= 8). Selecting different types of hospital modalities within the same Autonomous Community implies that political authority is equal for all hospitals although the degree of ownership, political control, and funding vary.

Regional officials manage *hospitals through direct public provision*. Doctors have a statutory status (quasi civil servants) and they depend directly on the regional government. The general manager of the hospital is a public servant. Ownership of this type of hospitals is public and they are financed with public money through yearly budgetary allocations. This type of hospital is subject to certain levels of competition due to the introduction of league tables as well as the possibility for patients to choose other hospitals for their treatment. Comparted to the other two modalities, this model represents the highest degree of publicness.

Non-clinical DBFMOs are managed through long-term performance contracts, also known as Design-Build-Finance-Maintain and Operate contracts. Such projects, also known as Private Finance Initiative (PFI) in the United Kingdom, transfer the responsibility for the design, construction, maintenance, operation, and financing of hospitals to a multi-headed consortium through a long-term performance contract ranging from 20 to 30 years (Reynaers 2014). Ownership, funding and control are mixed in the sense that the private consortium

owns, funds and controls the infrastructure and deliver up to 13 non-clinical services such as cleaning, transporting patients and catering on behalf of a public authority. Clinical services are not included in the contract and remain directly under public responsibility. Legal ownership of the infrastructure remains with the public authority, private investments are supposed to be earned back monthly through an agreed quota in the contract. The private consortium exerts the control on the quality of the infrastructure or service delivery and the regional government supervises this control. Compared to the other two modalities, this model represents a mix in terms of publicness and is neither completely public nor private.

The category of *private hospitals* includes clinical DBFMOs and privately run and owned hospitals. In clinical DBFMOs, auxiliary and medical services are provided by the private sector. Once the contract is finished, the hospital is returned to the public sector, who owns it. Although the provision of both non-clinical and clinical services is externalized, these hospitals only provide public hospital care. Patients do not pay fees in any of the two cases. A private consortium provides all services on behalf of the public authority. Funding has different formulas for both types of hospitals. Pure privately owned hospitals are financed through the fees for the different provided services. Clinical DBFMOs receive a capitation funding that is related to a formula that links the covered population in the district of the hospital and the actual number of patients that choose that hospital instead of choosing a hospital from another district.

The clinical DBFMOs are subject to public control (inspection, regulatory and sanctioning power) by the Administration and have to comply with clauses pre-established in the contract and the specifications by the Administration. Compared to the other two modalities, this model can be considered to represent the lowest degree of publicness.

Quantitative and qualitative data collection and analysis

In order to assess the relation between the degree of publicness and performance of public hospitals, we adopt a mixed method approach for which we analyse quantitative survey data and qualitative interview data (Creswell, 1999; Creswell, Plano Clark, Gutmann & Hanson 2003). Roughly, two groups of mixed method designs can be distinguished. Sequential designs start with the data collection and analysis of quantitative data followed by the collection and analysis of qualitative data (Creswell, Plano Clark, Gutmann and Hanson (2003, 178). In the case of concurrent designs, the collection of qualitative and quantitative data happens simultaneously. In this study, we adopt a concurrent triangulation design, through which we integrate the results of the qualitative and quantitative data analysis during the interpretation phase (Creswell, Plano Clark, Gutmann and Hanson 2003, 183). Hereafter we describe the characteristics of the selected cases and the process of the quantitative and qualitative data collection and analysis.

In order to study the effect of the degree of publicness on performance, we use data provided by the local ministry of health of Madrid in the year 2015. The section “hospital indicators” of their website includes results on the activities and health care provision of all (34) hospitals

that provide public health care in the Madrid Region. Data on general hospital activities, clinical effectiveness, patient safety, efficiency, patient care, teaching and research can be consulted on the website of the Observatory[1]. Other data like the choice of hospital, year of creation or governance structure have been consulted in the annual activity reports of the hospitals.

The dependent variable, performance, consist in this study of the dimensions efficiency, effectiveness, and quality. With respect to the first dimension, we consider the following two variables: the average cost of doctor's prescriptions and the percentage of ambulatory surgery that do not need over-night stay in the hospital. With respect to effectiveness, we use the average stay in the hospital and average time spent on the waiting list. Finally, with respect to quality of service and of infrastructure, we employ overall satisfaction; satisfaction with medical staff; satisfaction with nurses, and satisfaction with the room. All the continuous scale dependent variables have been converted into ordinal variables of three categories (High, medium and moderate) by dividing the scale in three tertiles in most of the cases.

Our key independent variable of this study is the degree of publicness. The three types of hospital care modalities described in the previous section represent a different degree of publicness. Whereas the first model represents the highest degree of publicness (we label it "public hospital", the third model represents the lowest degree of publicness (private hospital). The second model is situated in between these two extremes and its label is non-clinical DBFMO. For this preliminary study, we use the complexity of the hospital as a control variable. The local ministry of health distinguishes low, medium, and highly complex hospitals taking into account their activity, number of beds, technological provision, human resources, treated cases and services portfolio.

In order to study to what extent the degree of publicness influences the efficiency, effectiveness, and quality of health services, we use successive multinomial regression models analysis of the effect of two independent variables in each of the dependent variables (see reported results in the tables of Appendix I).

In order to contrast the results of the quantitative data analysis, we have conducted 16 semi-structured interviews with hospital managers and private consortium directors of all types of governance structures. Given that most respondents have worked in all three hospital modalities we were able to ask our respondents to reflect on and compare quality, effectiveness, and efficiency in all three modalities. The interviews had an average length of one hour, were recorded and transcribed verbatim. Appendix II contains the list of interviewees. The data analysis consisted of a '[p]rocess of organizing data into categories and identifying patterns (relationships) among categories' (McMillan and Schumacher 1993, p.

[1] http://www.madrid.org/cs/Satellite?cid=1354183538063&language=es&pagename=PortalSalud%2FPage%2FPTSA_servicioPrincipal&vest=1354183538063

479), also known as coding which refers to the labelling of text fragments (Boeije 2005). Citations used in the findings section represent the general findings except when explicitly stated that citations represent an atypical finding.

Findings

Effectiveness

The effectiveness of the hospitals has been measured through two indicators: average stay in a hospital after surgery and duration of the waiting list for any type of surgery. Although these indicators are an indirect measure of efficiency too, we have especially focused on the efficacy with which patients are treated leading to a reduction of waiting lists and their stay in the hospital. As regards to this dependent variable, the *Hypothesis 1 states that the higher the degree of publicness, the lower effectiveness will be.*

The average number of days in the hospital after surgery has been steady from 2013 to 2015 (5.92 and 5.7 days respectively). The multinomial regression analysis shows that private hospitals and non-clinical concessions have considerable lower average stays than public hospitals (see **Table 1** in Appendix I). At the same time, hospitals of high and medium complexity have higher average stays. One of our interview partners exemplified this effectiveness with the critic he received as a general manager of a private hospital from the shareholders:

> *"My shareholders tell me: 'Don't be silly! Don't be so effective in getting people out of the surgery room and don't send them home directly!' Then, I have to defend my strategy. I don't want to have people here telling them that they can be warm and have food. I want them to see that I do things quick and well so that they can tell other potential patients. I will be earning less from a patient that is sent home, but it will be compensated if I receive patients from other health districts. My strategy is to be effective in order to be competitive" (I-11).*

The waiting list does not differ in a relevant way between the analysed hospitals according to their level of publicness. Private hospitals, non-clinical DBFMOs and public hospitals behave similarly in the way they manage their waiting list for surgery) (see **Table 2**). In terms of the impact of publicness on effectiveness is inconclusive.

Efficiency

Efficiency refers to the ratio between results and inputs needed to achieve these results. In interviews with main stakeholders of different hospitals, efficiency was an element taken into account when preparing the long-term contracts for the DBFMOs. The efficiency was rather linked to the auxiliary services. One interviewee, who had had responsibilities from the regional ministry in developing the guidelines for all DBFMO contracts remembered the discussions with the medical staff as regards to the auxiliary personnel they would be allowed to have in the new DBFMOs: *"Doctors used to complain a lot saying that there was not enough*

staff. They were used to other public hospitals where the auxiliary staff is overwhelming since every doctor has his own secretary and this did not make sense. Of course, we did not agree and we did not include this requirement in the clauses of the contract" (I-04). Therefore, the DBFMO contracts already left some issues regarding personnel out of the efficiency equation, as I-03 asserted: "*We never requested a specific amount of staff to deliver the service. We were more concerned about getting some results and the consortium needed to figure out how to achieve them*".

In terms of efficiency, *hypothesis 2 maintains that the higher the degree of publicness, the lower efficiency will be.* From a basket of indicators from the Observatory of hospitals of the region of Madrid, two indicators were selected for this primary analysis: the monetary value of doctors' prescriptions collected at the pharmacy and the percentage of ambulatory surgery or same-day surgery (i.e. a surgery that does not require an overnight hospital stay). Both are measures of efficiency since a lower prescription value reduces the share of the public sector subsidized bill in drugs and ambulatory surgery reduces the costs linked to staying in a hospital room.

From 2013 to 2015, the share of ambulatory surgery slightly increased from 62.09% in 2013 to 64.94% in 2015. One clinical DBFMO of medium complexity had the most efficient ratio of 80.15% (Torrejón) in 2015 while one public hospital of medium complexity had the lowest efficiency with 37% of ambulatory surgery (Gómez Ulla). The multinomial regression shows that private hospitals and non-clinical DBMFOs have a higher share of ambulatory surgeries than public run hospitals. At the same time, the higher the complexity, the lower the efficiency in ambulatory surgery (see **Table 4** in Appendix I). Complexity could have then some mediating effect since public hospitals are distributed among high and medium complexity while private hospitals and non-clinical DBFMOs are concentrated in medium and low complexity. In any case, the general manager of a clinical DBFMO (purely private operator for clinical and non-clinical services) stated that the DBFMO contract did not foster efficiency gains since it paid activity and not the ability to make savings. "*I do not receive now more money for better management. For instance, I have 16-18 caesarean sections compared to 25 in the public hospitals. This efficiency does not bring me any benefit. In fact, I would be better off if I go for 25 given that a normal birth is better paid than a caesarean delivery*" (I-11).

However, the general average value of the doctors' prescriptions has experimented a slight increase between 2013 and 2015 from 25.47€ to 26.16€. A decrease of this average value took place since 2010 when the prescription of generic medicaments was mandated. However, the drug bill seems to be stable. The highest and lowest average prescription is paid in a public hospital (Niño Jesús 38.87€ of medium complexity) and Fuenfría (11.44€ of low complexity) respectively. According to the multinomial regression analysis, the differences between the private hospitals and non-clinical DBFMOs compared to public hospitals are not high. However, average prices are considerably higher in hospitals of high complexity (see **Table 3** in Appendix I).

Quality

The regional government has made a considerable effort to promote quality in hospital management. In 2015, 82% of all analysed hospitals had carried out the self-assessment of the European Quality Management Excellence Model (EFQM), similar to other schemes around the globe like Malcolm Badlrige in the United States or Fundibeq Award for the Latin American countries. Although there is no information on the scores that the self-assessment exercise has produced in each hospital, it shows that quality is part of the management policy. Furthermore, the regional government carries out a yearly general survey of patients that enquires on the satisfaction with hospital services in several dimensions. Finally, clinical and non-clinical DBFMOs have to carry out surveys according to the contract on the auxiliary services for which they have the responsibility of operation. If the results are not as expected according to the contract, they consortium could get a fine and a discount in the monthly payment. Public hospitals are not compelled to carry out these surveys.

The overall satisfaction with hospital services has been relatively high in all hospitals since 2013 with 90.94% to 88.92% (2015) of patients that are satisfied or very satisfied with the service that they received in the hospital. However, this overall satisfaction masks some internal differences amongst the dimensions of quality.

For further assessing the quality of the different hospitals, we use perceptual information and distinguish between the quality of the services provided by the clinical staff and the quality of the infrastructures that includes the hospital itself, the rooms and the surgical theatres. Both dimensions are considered in turns.

Service quality

For the quality of the service, *hypothesis 3 reads that in professional environments, the higher the homogeneity of professionals, the lower the differences in service quality satisfaction among users from organisations with different degrees of publicness.*

In general, the average levels of satisfaction (including those who are very satisfied) is high (92.79% in 2015). Unlike other dimensions, the dispersion of scores between the highest (96.97% in El Escorial) and the lowest (79.39% in Rodríguez Lafora) is relatively low. The multinomial regression did not show relevant differences among hospitals with different degrees of publicness (see **Table 5** in Appendix I). Small hospitals though offer comparatively higher scores in global satisfaction compared to hospitals of high and medium complexity.

The satisfaction with the doctors is considerably higher in private hospitals and non-clinical DBFMOs than in public hospitals and in high-medium complexity hospitals than in small hospitals. Although this difference is relatively small, there are differences among different types of hospitals. The satisfaction with nurses shows similar results (see **Table 6** and **Table 7** in Appendix I).

However, when the perception of the treatment of pain is considered, the multinomial regression analysis demonstrates that there are no relevant differences among hospital with different degree of complexity and different degree of publicness (see **Table 9** in Appendix I).

Infrastructure quality

For the quality of the infrastructure, *hypothesis 4 states that the higher the degree of publicness, the lower the satisfaction with infrastructure quality.* We assess the quality of the infrastructure through patients' satisfaction with the room they stayed. We complement this with the insights derived from the interviews with hospital managers.

In general, the global satisfaction with the room has declined from 86.94% in 2013 to 79.84% in 2015 (of those patients that were satisfied or very satisfied with the quality of the room). The highest proportion of satisfied patients is found in the hospital Rey Juan Carlos (98.18% in 2015), a privately run hospital of medium complexity, while the lowest quality is perceived in *12 Octubre,* a public hospital with high complexity (58.9% satisfaction rate). The complexity of the hospital does not make a big difference as regards to the satisfaction with the room, but patients of private hospitals and non-clinical DBFMOs display higher satisfaction rates than patients from public run hospitals.

When interviewing consortium managers and hospital managers on the quality of the infrastructure, of the auxiliary services of the hospitals, we invited them to reflect on the quality provided by public sector hospitals and DBFMOs. Mostly, there is unanimity that the DBFMO has a higher quality in terms of infrastructure and auxiliary services (I-01, I-03). For instance, I-03 was eloquent in this regard after having managed five different hospitals:

> "*In this hospital (public), for me it is very difficult to find out the level of cleanliness of the surgery theatres, how the service of transporting patients is working, or whether there are mistakes in the patients' room. However, this was easier in a DBFMO. The medical staff reported immediately any deficiency in the system. I did not need to pull out the information on a daily basis, each monthly report allowed for monitoring the whole contract of all auxiliary services and permitted for the allocation of sanctions to the consortium. In a public hospital, any deficiency is difficult to correct since a disciplinary sanction is required for any deficiency*". This quality is maintained throughout the life of the contract although there were some minor problems in the initial phase of adjustment, which the contract stipulates in 6 months (I-09).

An interviewee from the side of the private consortium corroborated this assessment:

> *"The problem is that we ought to have an immaculate hospital 100% of the times according to the contract. If we do not achieve it, there will be official reports from the medical staff and if we don't have money, we have to look for it… and this does not happen in public hospitals since the level of control and demand is far lower" (I-05).*

The DBFMO contract (unlike the traditional construction contract to build up a hospital) has advantages that affect the quality of the hospital. In a traditional contract, the Administration is paying the construction of the infrastructure along the way with a final payment when the hospital is finally opened for its operation. Since the constructing company is receiving money during the construction phase, delays have to be normally renegotiated, as one interviewee declared (I-02). However, a typical DBFMO contract requests that the private consortium finances in advance the infrastructure and the payment will begin the moment in which the hospital starts providing the services. Since most consortia have to borrow money from the bank, it is in their interest to build the hospital with the requested quality in the shortest period in order to service the mortgage and start receiving the agreed quota (I-10).

Furthermore, thanks to a "progress contract clause", the Administration can force the private consortium to implement and finance technical innovations. Of course, this may imply the purchase of new technology and this may create certain risks of financial viability for the private consortium according to our interview partner (I-05).

Since the Madrid regional government allows for a choice of hospital among patients, the difference between opt-in and opt-out from the reference hospital of the district gives an indication of to what extent patients are expecting to have a better treatment or surgery in a particular hospital. The multinomial regression analysis shows that patients elect more private run hospitals than non-clinical DBFMOs and public hospitals.

Conclusions and discussion

The central aim of this article is to assess the impact of publicness (including the dimensions ownership, funding and control) on organizational performance (including effectiveness, efficiency and quality as performance dimensions) in the context of complex hospital care. We considered three modalities of governance hospital structure with a varying degree of publicness in the Autonomous region of Madrid (Spain) and analyzed a series of performance indicators (including subjective survey data) and interview data with hospital managers on efficiency, effectiveness, and quality. The literature on publicness allows describing governance structures as regards to different dimensions in order to demonstrate the amount of political and economic authority that is exerted on the hospitals. Ownership, for instance, is not enough to define publicness. For instance, the regional government owns clinical DBFMOs, however, they are fully operated by private sector firms. All the hospitals are financed by the budget but through different formulas: public hospitals follow the normal budgetary procedure, non-clinical DBFMOs have a hybrid financial scheme where auxiliary services are monthly funded if there are no sanctions and private hospitals as well as clinical DBMFOs receive a per capita funding.

These results are preliminary due to the reduced number of variables analyzed for this study. With respect to effectiveness, we find that there are hardly any differences with respect to the length of the waiting lists between the different hospital modalities. Private and non-

clinical hospitals are, however, more effective when it comes to the average stay of patients. Rather than the degree of publicness, the degree of complexity seems to explain differences in terms of average stay.

With respect to efficiency, we find similar results. While there are no differences with respect to the price of prescribed medication between different hospital modalities, we do encounter differences with respect to this variable when considering the complexity of the hospitals under scrutiny. With respect to the efficiency of ambulatory surgery, we find that private and non-clinical hospitals are more efficient than public hospitals. This difference, however, again seems to be related to the degree of complexity. Hence, the higher the degree of complexity, the lower the efficiency of ambulatory care.

The preliminary analyzed information shows that there is a mixed picture on the impact of publicness on the effectiveness-efficiency of the organizations. In general, private hospitals try to reduce the occupation of hospital rooms. As one interviewee explained (a general manager of a private hospital), this strategy does not yield necessarily higher financing from the regional government. However, the effective delivery of surgery has the purpose of increasing choice among patients since financing through capitation has more relevance in the end.

With respect to service quality, we do not find any differences with respect to pain treatment, but considerable differences with other items. Satisfaction with doctors and nurses is higher in private and non-clinical DBFMOs when compared to public hospitals. This result is somewhat unexpected since there is a firm professional norm regulating the behavior of the medical profession in Spain. We therefore expected the degree of publicness not to have a strong impact (see for different results Andersen et al. 2011 as regards to hip surgery in Danish hospitals). It may be that the role of the profession is more relevant for the “treatment of pain” (regulated by the medical profession), where publicness does not play a role. However, rather than the professional norm, patients rate doctors and nurses as regards to their empathy and these results are higher in private hospitals, which would like to attract a higher number of patients in order to increase their returns. This is not regulated by the professional norms. In fact, when using their right to choose a care provider, patients tend to opt for private hospitals rather than non-clinical or public hospitals. Therefore, the impact of publicness on performance in professionalized settings may show different results. In services without professional norms (Domberger and Jensen 1997; Blom-Hansen 2003), the impact of publicness is more linear.

Contrary to what happens in efficiency and effectiveness, the independent variable of the complexity of the hospital does not interfere with respect to the satisfaction with service quality. With respect to satisfaction with infrastructure, higher satisfaction with infrastructure is found in private and non-clinical hospitals than in public hospitals. Our interviewees corroborated this finding. Hospital general managers find that the facilities are better kept and they have better control of auxiliary services. The impact of the degree of publicness on

effectiveness and efficiency is not conclusive, since different dependent variables show distinct results. More variables have to be considered. However, in terms of satisfaction, patients are more satisfied with doctors, nurses and their rooms in private hospitals than in public hospitals. Finally, there are no different satisfaction scores with the treatment of pain. Regarding quality, everything surrounding the purpose for being in a hospital seems to be better rated in private sector organizations. However, being cured seems to have a similar satisfaction rate in different hospital modalities.

Taking into account more than one performance dimensions provides a more complete and perhaps more complex understanding of the relation between publicness and performance. We do not only find differences in each dimension but also between the three dimensions. The region of Madrid is also a laboratory to study to what extent different governance structures with varying degrees of publicness may affect the principle of equality when dealing with patients. First, like other Spanish regions, there is a universal principle of coverage for all Spaniards regardless their source of income. This even includes immigrants who do not have as of yet a citizen residency permit but can prove to be living in a city of the region (normally through a house-residence declaration). Second, the regional government has implemented freedom of choice among patients but has ensured at the same time that there is no restriction in the way in which this choice is exerted. There is no capping system, for instance, for patients wishing to go to private hospitals. This choice is an informed choice since there is a regional website with information on the performance of different hospitals as regards to most relevant services. Furthermore, the activity reports of the hospital are complete as regards to the information about their services and performance in areas that are not reported on the government's website. Finally, the regional government has made sure that the external corporative appearance of the hospital (not necessarily the stage of the infrastructure) is the same for all hospitals working under the umbrella of the regional government either through concerted agreements or as a direct public provision.

There are several limitations to the findings of this paper. First, the analysis of efficiency and effectiveness have been limited for this paper in three ways. On the one hand, the number of variables covered does not allow for a conclusive statement. Other variables will be added for the next version of the paper. On the other hand, a proper efficiency measure should consider a number of resources invested for achieved output, like the cost of the services. The regional government qualifies the selected variables for their website as efficiency, but they are rather a measurement of effectiveness, in absence of the ratio of these variables and the personnel or the finances of the hospital. Finally, we have used a global measurement of efficiency and effectiveness, for instance, the average stay in the hospital after a surgery without considering different averages for different types of surgery. A more specific analysis should offer a more precise comparison.

Second, the multinomial regression applied models have included publicness first and a combination of publicness and degree of complexity of the hospital. Other moderators

related to the organizational characteristics highlighted by the literature (Andrews et al. 2011), like the age of organization, should be included in the regression models.

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Appendix I - Tables of the multinomial regression

Table 1 Multinomial regression on the probability of having a high or medium **average stay in a hospital after a surgery is done** *versus* a moderate stay (ref. cat.).

HIGH AVERAGE STAY	Constant	-17.602
Low complexity (ref.)	High	20.762
	Medium	20.074
Public sector management (ref.)	Private management	-22.775
	Non-clinical DBFMO	-20.241
MEDIUM AVERAGE STAY	Constant	.903
Low complexity (ref.)	High	1.476
	Medium	1.481
Public sector management (ref.)	Private management	-3.214
	Non-clinical DBFMO	-.501

Table 2 Multinomial regression on the probability of having a high or medium **wait on the list to get a surgery done** *versus* a moderate wait (ref. cat.).

HIGH WAIT	Constant	-19.612
Low complexity (ref.)	High	21.638
	Medium	19.686
Public sector management (ref.)	Private management	-2.042
	Non-clinical DBFMO	.349
MEDIUM WAIT	Constant	1.424
Low complexity (ref.)	High	-.127
	Medium	-1.709
Public sector management (ref.)	Private management	-2.366
	Non-clinical DBFMO	-1.597

Table 3 Multinomial regression on the probability of having a high or medium **average price of a doctor's prescription** *versus* a moderate price (ref. cat.).

HIGH AVERAGE PRICE	Constant	-2.674
Low complexity (ref.)	High	22.088
	Medium	2.546
Public sector management (ref.)	Private management	.509
	Non-clinical DBFMO	3.668
MEDIUM AVERAGE PRICE	Constant	-1.013
Low complexity (ref.)	High	20.810
	Medium	1.753
Public sector management (ref.)	Private management	-.746
	Non-clinical DBFMO	1.440

Table 4 Multinomial regression on the probability of having a high or medium **proportion of ambulatory surgery** *versus* a moderate proportion (ref. cat.).

HIGH AVERAGE PRICE	Constant	-.430
Low complexity (ref.)	High	-56.661
	Medium	-19.152
Public sector management (ref.)	Private management	56.669
	Non-clinical DBFMO	19.176
MEDIUM AVERAGE PRICE	Constant	19.845
Low complexity (ref.)	High	-38.956
	Medium	-20.538
Public sector management (ref.)	Private management	37.088
	Non-clinical DBFMO	-.405

Table 5 Multinomial regression on the probability of having a high or medium **global satisfaction with the hospital** service delivery *versus* a moderate satisfaction (ref. cat.).

HIGH SATISFACTION	Constant	.884
Low complexity (ref.)	High	18.019
	Medium	-.863
Public sector management (ref.)	Private management	1.257
	Non-clinical DBFMO	-.770
MEDIUM SATISFACTION	Constant	.875
Low complexity (ref.)	High	20.398
	Medium	.553
Public sector management (ref.)	Private management	-.963
	Non-clinical DBFMO	.587

Table 6 Multinomial regression on the probability of having a high or medium **satisfaction with** the **room** *versus* a moderate satisfaction (ref. cat.).

HIGH SATISFACTION	Constant	-2.477
Low complexity (ref.)	High	-1.507
	Medium	.382
Public sector management (ref.)	Private management	2.948
	Non-clinical DBFMO	4.508
MEDIUM SATISFACTION	Constant	.081
Low complexity (ref.)	High	-21.294
	Medium	-20.335
Public sector management (ref.)	Private management	-18.366
	Non-clinical DBFMO	.687

Table 7 Multinomial regression on the probability of having a high or medium **satisfaction with** the **treatment of doctors when staying in the hospital** *versus* a moderate satisfaction (ref. cat.).

HIGH SATISFACTION	Constant	.644
Low complexity (ref.)	High	19.575
	Medium	18.481
Public sector management (ref.)	Private management	18.047
	Non-clinical DBFMO	18.750
MEDIUM SATISFACTION	Constant	-2.336

Low complexity (ref.)	High	20.119
	Medium	21.001
Public sector management (ref.)	Private management	17.034
	Non-clinical DBFMO	21.128

Table 8 Multinomial regression on the probability of having a high or medium **satisfaction with** the **treatment of nurses when staying in the hospital** *versus* a moderate satisfaction (ref. cat.).

HIGH SATISFACTION	Constant	.324
Low complexity (ref.)	High	19.851
	Medium	18.316
Public sector management (ref.)	Private management	18.221
	Non-clinical DBFMO	19.007
MEDIUM SATISFACTION	Constant	-.483
Low complexity (ref.)	High	18.816
	Medium	19.776
Public sector management (ref.)	Private management	16.939
	Non-clinical DBFMO	19.011

Table 9 Multinomial regression on the probability of having a high or medium **satisfaction with** the **treatment of pain** *versus* a moderate satisfaction (ref. cat.).

HIGH SATISFACTION	Constant	-.619
Low complexity (ref.)	High	.444
	Medium	.999
Public sector management (ref.)	Private management	.426
	Non-clinical DBFMO	.807
MEDIUM SATISFACTION	Constant	-.209
Low complexity (ref.)	High	.940
	Medium	1.618
Public sector management (ref.)	Private management	-.472
	Non-clinical DBFMO	.147

Appendix II - List of interviews

Code	*Position*
01	General manager of the private consortium operating a non-clinical DBFMO
02	Head of the contracting team from the private consortium (non-clinical and clinical DBFMO)
03	Hospital general manager (with experience in private hospital, non-clinical DBFMO and in public hospital)
04	High official of the regional government in charge of clinical and non-clinical DBFMO projects
05	Manager of the private consortium operating a non-clinical DBFMO
06	Expert member of the monitoring units of DBFMOs
07	Legal expert for DBFMOs contract and monitoring units
08	Hospital general manager (with experience in non-clinical DBFMO and in public hospital)
09	General manager of the nursing team of a non-clinical DBFMO with experience in public and private hospital
10	High official of the regional government in charge of clinical and non-clinical DBFMO projects
11	Private hospital general manager with experience in managing public hospitals
12	High official of the regional government in charge of clinical and non-clinical DBFMO projects
13	Legal expert for clinical DBFMO contract
14	Finance manager of a private hospital
15	Chief Executive of a holding firm that manages several private hospitals and clinic DBFMOs
16	Hospital general manager (with experience in non-clinical DBFMO and in public hospital)