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PPP in the Portuguese Health Sector: Contractual compliance assessment

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Abstract

Since 2001, in Portugal, constant reforms in hospital management have convoyed the transformations in the management models applied to public administration, aiming to ensure a higher quality of services and, concurrently, a more significant economic efficiency by applying the best contract management practices. This study aims to analyze, for the period between 2012 and 2021, the contract management evaluation of the PPP model in the Portuguese hospitals. It was used a mixed research approach based on multiple case studies and archival research. As main results, it was found that: i) production levels of the four PPP hospitals complied with the contractual stipulations; and ii) the State is inefficient in fulfilling its role as supervisor of the services provided throughout PPP management model and is unable to analyze the results obtained by the PPP project lifecycle. This study concluded that over the last 10 years, the Portuguese state should had taken advantage of all the experience gained from the four PPP projects and applying this experience to the PMH hospitals. Not only has the state failed to perform the tasks of supervising and monitoring the PPP model in an effective manner, which has prevented it from acquiring new competencies in terms of management, but it has also failed to adjust the level of service required of the PMH hospitals to that required of the PPP hospitals.

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1. Introduction and theoretical framework

Public Private-Partnerships (PPP) models are increasingly seen as a tool to improve the performance of health systems worldwide, bringing together the best features of the public and private sectors to improve efficiency, quality and innovation [1,2], despite the disagreement on the objectives of decentralized collaboration [3]. In this sense, PPPs tend to produce innovative strategies that, as [4] argues, are of utmost importance for the sustainability of organizations in a context of increasing globalization, generate positive consequences towards well-defined public health goals, and can also create powerful mechanisms to address difficult problems by harnessing the ideas, resources, and knowledge of different partners [5]. This allows for the argument that relationships between government and private partners result in the phenomenon of "hybridity," in which the parties develop both public and private orientations and interests [6].

Looking at the different areas of healthcare, most of the expenditure originates from the hospital sector [7]. In many countries, hospitals generate about one-third of healthcare spending, so even a small growth rate in the hospital sector has a large effect on total healthcare spending. The costs allocated to hospital infrastructure are of great importance because some countries have a lag in the development of their health infrastructure (*infrastrucutre gap*) [7], meaning that hospitals in these countries will need to renew their infrastructure over the next few years. Therefore, if governments wish to reduce spending in the health sector, it is important to analyze and optimize hospital spending and their management models [8]. Recently [9] concluded that in Portugal the users are more satisfied with the service provided by the PPP hospitals comparing with Public Management Hospitals (PMH) hospitals.

We cannot approach the subject of contractual management and supervision without first understanding that the entire process inherent to the creation of a PPP includes a set of complex and rigorous steps (tender procedure), both for the public partner and the private partner. The tender procedure is divided into the following phases: a) announcement of proposals; b) public act; c) qualification; d) selection of proposals; e) negotiation; f) awarding; and g) conclusion of the contract [10].

The bureaucratic burden required of private bidders during the tender phase, including strict specifications at the initial stage of bidding, leads to high costs, not only for the private sector, but also for the contracting public entity, increasing the deadlines for evaluating the proposals [11]. After evaluating the bids and issuing technical opinions, namely by the Audit Office Court (TC), the public entity awards the private partner the bid corresponding to the BAFO (Best and Final Offer) presented, subsequently giving way to negotiation and execution of the respective contract. Even before the contract is signed, a prior assessment of the immediate and future budgetary implications of the PPP project is required from the Ministry of Finance [10].

The problem of management and supervising PPP contracts is based on the principle that eventually governments will become the supervisors of the services provided, not the providers. There must be a balance between what is desired by the public partner, i.e., a reasonable price and achievement of a marginal value or benefit, and what is desired by the private partner, i.e., a reasonable risk/return profile and controllable transaction costs [12].

To achieve this balance, [12] identified some methods applied in various countries (e.g., business case analyses) that helped identify value creation in the project life cycle, as well as appropriate management strategies for various key issues in the PPP model.

PPP projects have shown considerable effectiveness in delivering new infrastructure and services, although this effectiveness will always depend on proper *ex ante* negotiation and *ex post* supervision [12]. [13] empirically investigated the differences and similarities regarding the implementation constraints of the PPP model in developing and developed economies, concluding that constraints related to the organization and negotiation of PPP projects are more latent in developing economies.

To sustain the benefits obtained in the construction and operation phase, there should be an active and continuous management of contractual obligations (supervision). Based on practical experience of the PPP market, [14] conclude that it is crucial not to lose sight of the fact that it is the service provider (private partner) who should have adequate monitoring of its performance, particularly regarding quality management and management information systems. Thus, the PPP project conceptual framework should encourage the private sector to obtain incentives through appropriate downstream project management. The (public) contract management team, should simply audit these systems, receiving regular reports, within a defined timeframe, in accordance with the obligations written into the

contract, supplemented by conducting random spot checks to ensure that performance is being measured and reported in a reliable, accurate and comprehensive manner [14].

[15] presented the main factors that can lead to PPP failure, arguing that there is no single recipe that can simplify the design of a PPP contract, for a given objective and sector (including health sector), concluding that in practice success depends critically on the tenders and contracts to be designed and operationalized. Thus, contracts should be implemented in an optimal way, from the point of view of economic theory, and this is an institutional factor that changes from country to country, depending on the responsibility and competence of the public sector.

We realize that the PPP model is a continuous nexus of contracts, ideally planned from the beginning of the partnership, however, in practice they may be subject to renegotiation. The contractual synthesis of conflicting interests needs constant monitoring and balancing (supervision). [16] concluded that there is a deficit of public sector skills for effective contractual management and oversight of the PPP model, noting numerous contractual failures that could have shielded the state against some of the poor results obtained during the execution of the PPPs analyzed by the author.

As mentioned by [17], and also pointed out by [18], there are some actions that the state can take that aim to address many of the aspects that are criticized and pointed out as flaws of the model; specifically, the mitigation of the lack of experience in negotiation, the change of the posture of 'blind trust' in the good faith of contractual performance, and the lack of skills, identified above, for the strict monitoring of all contractual clauses. However, we know that there are no 'complete' contracts, but rather there are detailed provisions, inspired by experience, that tend to protect the public interest against undesired outcomes and market failures [19].

Although in Portugal, during 2005 there was an attempt to establish PPP centers of expertise in sectoral ministries, with the creation of departmental PPP units in charge of developing specific PPP programs [20] and despite this systematic use of PPP models, Portugal is one of the few countries that still does not have a PPP agency that monitors PPP contracts, from contracting to operation, and that strictly manages the charges with these contracts [21].

The issues of contract management and supervision pose some problems and reveal some gaps on the part of the public partner, which should be addressed to ensure proper management of the Hospitals PPP contract's life cycle, including a correct production and performance according to the agreed initial terms. Thus, this study aims to answer the following question:

1. In the period between 2012-2021, is the performance, of PPP Hospitals om Portugal, adequate, according to what was contractually agreed with the State?

This question aims to evaluate the contractual obligations stipulated for each PPP, assess their completeness with the performance and production verified, and evaluate the effective contractual management carried out by the Public Partner.

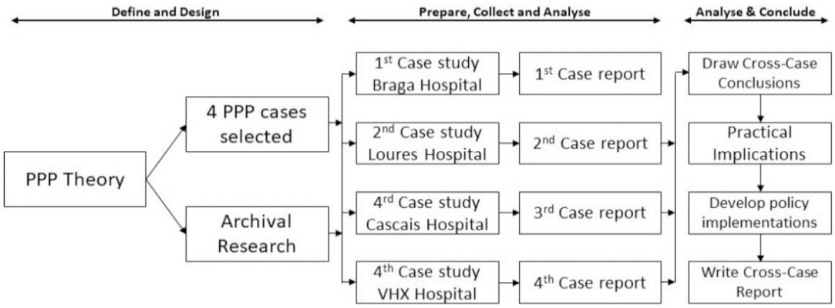
2. Methods

To answer the research question, we resort to an archival research method through document analysis of all official State reports, where the operational and production results of the four PPP Hospitals are reported, as well as the *ex-ante* analyses carried out by the public partner, as provided in the article 6.1 of the Decree-Law No. 111/2012. This Decree-Law was the first cross-cutting legislative initiative aimed explicitly at PPP, seeking to enhance the public sector's use of the management capacity of the private sector, improve the quality of the provided public services, and generate savings in the use of public resources.

We identified several sources of information, public and private, that will allow us to assess the performance results of PPP projects, namely the reports periodically produced by the Technical Project Monitoring Unit (UTAP) and the Technical Budget Support Unit (UTAO). In addition, the advice issued by the Audit Office Court (TC), and the financial studies produced over the years by several independent private entities, were analyzed.

The research methods were applied on a multiple case study of PPP Portuguese hospitals Figure 1. It is the most appropriate approach to the fact that there are (or have been) only four hospitals under the PPP model in Portugal [22]. Case studies are widely used in organizational studies and social sciences [23]. They should have clear designs, produced at a time before any data is collected. These designs should cover the main research questions, the unit of analysis, links between data, and data interpretation procedures [24].

Figure 1. Multiple Case Study Design



Source: Adapted from Yin (2003)

The presented work used the archival research method, which can be defined as secondary data that are collected and stored before research begins, intended for later use. Archival data can include statistical information, court files, institute records, credit histories, and educational records. Business archival data may consist of annual reports, analysis files, and responses to surveys conducted at different times [25]

For a data collection to be reusable, it must be 'processed', involving a series of activities: verification, digitization, optical character recognition, conversion, anonymization, organization, and metadata creation [26]. All these activities were performed, being the data set verified regarding the sources and scope of the documents and converted into a data list allowing correlations between all the information regarding the health PPP model management in Portugal. All collected data has public access; thus, anonymization was unnecessary.

2.1. Data processing

To be successful in this research methodology, three crucial documents must be elaborated [23], which will allow both the discovery of relevant data resources and informed reuse. The first document is a systematic 'Catalogue Record' that provides a detailed study overview, the size and content of the dataset, its availability and any terms and conditions of access. The second, a 'User Guide', which brings together key documentation from the research, containing information on how to use the data, how the data were collected, the original topic guides and publications. Finally, a 'Dataset Listing', that in our case contains 60 documents, detailing key features of the data, and was constructed to help readers identify particular types of data (Table 1). In many ways, these unique characteristics are analogous to 'variables' in quantitative data sets [23].

Table 1. Dataset listing.

Organizations	Type of document
Audit Office Court	Guidelines and Procedures 2008. Audit Report 2009, 2013, 2014, 2015, 2016, 2019, and 2021.
European Audit Office Court	Audit 2018.
Strategic Analysis Team	Final report 2008.
General Inspection of Health Activities	Benchmarking report 2013.
Health Regulatory Authority	Study 2016. Report 2020.
IASIST-IQVIA Economic and Clinical Information	Report 2016.
Portuguese Observatory on Health Systems	Report 2018.
General Inspection of Health Activities	Control and Monitoring of Hospital Management Contracts PPP 2018.
National Health System	Report 2018.

Technical Budgetary Support Unit	Technical Information 2015. Budget execution report 2015a, 2015b, 2016a, 2016b, 2017a, 2017b, 2018, 2019, and 2020.
Project Monitoring Technical Unit	Report 2016a, 2016b, 2016c, 2017a, 2017b,2017c, 2017d, 2017e, 2018a, 2018b, 2018c, 2018d, 2019a, 2019b, 2019c, 2019d, and 2019e. Management contract 2008, 2009a, 2009b, and 2010.
The Organisation for Economic Co-operation and Development	"Better Policies" Series 2013.
European PPP Expertise Centre	Official document 2011 and 2012.
United Nations	Official document 2008.
European Union	Official document 2013.
Catholic Lisbon University	Official document 2016.
PricewaterhouseCoopers International Limited	Official document 2013.
Health, Nutrition, and Population – World Bank	Official document 2006.
Republic Diary	Decree-Law nº 86/2003; Decree-Law nº 111/2012; Decree-Law nº 75/2019. Decree-Law nº 23/2020

Source: authors' elaboration

The results were discussed based on logical analysis, and this option may present some difficulties, especially concerning the rationality of empirical beliefs [27]. Empirical beliefs can be false even if they have been rationally and logically created. If a logical error is possible, there is a factual dispute about which logic is correct [27]. Thus, to overcome any doubts, data were collected from as many documents/studies as possible, aiming to discuss the results presented. The type of reasoning/form of research used the inductive method, which allows inferring generalisations for the population based on certain data [28].

3. Results and Discussion

We have identified in several audits related to PPP hospitals carried out by the [29, 30, 31], recommendations to the Ministry of Health to ensure the extension, to all SNS hospitals, of the mandatory monitoring of performance and result indicators provided for in PPP Management Contracts. We have also verified that the same audits recommend that user satisfaction surveys be conducted and published for all SNS hospital units, to allow benchmarking between hospitals managed in PPPs and other PMH hospitals. There are also recommendations to the Board of Directors of the Regional Health Administration of Lisbon and Tejo Valley, to ensure that the team responsible for monitoring and controlling the implementation of Management Contracts has the appropriate skills to minimize the permanent and systematic use of external consultants. Finally, we verified that the audits recommend to the Public Contracting Entity (EPC) that actions should be carried out to allow the team allocated to monitoring and control to develop the appropriate skills, incorporating the necessary know-how that would dispense with the permanent and systematic use of hiring external consultants, which should be an occasional resource and oriented to meet specific technical needs.

In general, we are faced with a clear gap in what contractual management activities concern, on the part of the public partner, and this idea is supported by the latest conclusions of the [32] when it states: "The EPC, through its managers, does not have a common understanding and uniform criteria in the analysis and decision of identical situations. There is a lack of articulation and sharing of information between the EPC and the ACSS on issues essential to the control and monitoring of management contracts" [32, p.7].

3.1. PMH Hospitals results

After analyzing the completeness of the contractual obligations assigned to each PPP, including the verified performance and production levels [29,30,31,32,33,34,35,36,37,38,39,40], it is important to present, prior to our discussion, a summary of the data regarding the results in contract management and production (Tables 2 and 3).

Table 2. Data related to contract management activity

Global to all 4 PPP	PPP VFX	PPP Loures	PPP Braga	PPP Cascais
There is no evidence regarding the EPC conducting *ex ante* assessments of the private entities' production contracting.	The 'contract manager' figure is the only resource assigned exclusively to these tasks.	Absence of constraints on the normal execution of audits, verifying the cooperation and availability of the parties.	The contract management activity is carried out by a 3-resource team from ARSN, using outsourcing for consulting services.	The contractual management functions of PPPs should be concentrated in a single entity that reports directly to the ministerial bodies.
The EPC does not develop the procedures for the procurement of services in a timely manner.	The relationship with the private partner runs without conflicts that threaten the normal execution of the contract.	There is no level of conflict between the partners that threatens the normal execution of the contract.	The level of disputes between the parties, since the beginning of the contract execution, has been decreasing, through conciliation.	Sufficiently robust solvency ratios, to be respected by private partners, should be introduced to avoid situations of insolvency of the managing entities.
The EPC does not perform control actions to the information systems of private entities.	There are divergences about the interpretation of the contract that may generate future litigation.	Ensure that the Contract Management team, gathers and develops the appropriate skills, in order to incorporate the necessary Know-How.	The evaluation of the performance of the Establishment Management Entity was positive.	The EPC must perform systematic and effective control over the performance of hospital care delivery.
Not conducting user satisfaction surveys makes EPC assessments of hospital PPPs impossible.	The execution of the contract is running with positive evaluations by the State, without the occurrence of disputes.	The evaluation of the performance of the Establishment Management Entity was positive.		The ARSLVT systematically hires external consultants to perform validation tests on hospital activity.
The evaluation and monitoring of management contracts becomes unfeasible due to the lack of comparable information on performance parameters.	The evaluation of the performance of the Establishment Management Entity was positive.			The evaluation of the performance of the Establishment Management Entity was positive.
The indicators required in the management contracts for PPP have no repercussions on the PMH hospitals.				
The ACSS does not have complete information about the economic-financial dimension for the 3 hospitals (Cascais, Loures and VFX).				
There is a lack of articulation and sharing of information between the EPC and the ACSS on issues essential to the control and monitoring of management contracts.				
The EPC must develop adequate skills for contract management, in order to incorporate the necessary Know-How, with the objective of avoiding the use of external consultants.				

Source: authors' elaboration

Table 3. Data related to production activity

Hospital de VFX	Hospital de Loures	Hospital de Braga	Hospital de Cascais
2015 - Overall growth trend in production.	2015 - Increased production in all lines of activity. Increase in external consultations and day hospital sessions	The quantities to be produced were adjusted based on the production agreed each year with EPC.	Unilateral determination of output by the public partner to the private partner, resulting in a reduction of the contracted output.
2016 - Increased production level, growth in emergency rooms and an increase in the number of day hospital sessions.	2016 - Increased production in terms of the number of day hospital sessions and the level of demand in the emergency room. Reduction of inpatient and outpatient activity.	ARS Norte and EGE agreed on annual production values that assumed an insufficiency of the contracted activity.	The EPC unilaterally fixed the output in order to respect the principle of budget affordability.
Growth in the number of equivalent inpatients and outpatients, in the number of outpatient consultations.	2018 - Increase in the number of inpatients and outpatients. Decrease in the number of day hospital sessions and emergency room visits.	As a result of the restrictions imposed on production, by agreement between the parties, the waiting time for users waiting for external consultations has increased.	The decrease in hiring, by the EPC, may have had a negative effect on the provision of health care to the population.
High utilization of the inpatient and surgical capacity.		2015 - Production increase was visible in practically all lines of activity	
		2016 - Decrease in the number of day hospital sessions.	
		2017 - Increased production in virtually all lines of activity.	
		2018 - Increased production in virtually all lines of activity.	

Source: authors' elaboration

3.2. Discussion

[41] highlighted that one of the steps in the PPP contracting process is contract management, where the transfer of responsibilities to the EPC contract management team takes place, management responsibilities are formalized, the project is delivered, results are monitored, and a defense of the contract's integrity is made. As we have already seen, the audits systematically refer to the insufficient human resources allocated to monitoring/supervision and audit by the public partner. In the entity responsible for monitoring and auditing hospital coding processes, ACSS, in 2016 there were only 2 employees allocated to clinical audits (one full-time and the other part-time) and external medical auditors (around 7) with limited availability.

[38] mentions that in June 2016 a team was set up to assess the options of the Portuguese State regarding the termination of the management contracts for the Cascais and Braga PPP Hospitals, considering the expiry of the contracts on 31st December 2018 and 31st August 2019, respectively. In October 2016, this project team submitted a report on the Cascais PPP Hospital, including an analysis of the PPP model currently in place and an assessment of the possibility of exercising the contractual option to renew the respective management contract. [38] refers that the assessment resulted in a proposal not to renew the current management contract of the Cascais Hospital for clinical management, with the launch of a tender procedure aimed at signing a new PPP for this purpose.

As [12] argues, PPP models have shown considerable effectiveness, and this effectiveness will always depend on effective *ex-post* supervision of contracts. One of the key stages of a PPP contract is precisely contract management, which includes the tasks of inspection, surveillance, and contract management, whereby the public partner must set up a team that receives and reviews regular reports in accordance with the obligations written into the contract,

supplemented by random spot checks to ensure that performance is being measured and reported in a reliable, accurate and comprehensive manner.

The [30] concluded in its audit of the VFX PPP Hospital that "the follow-up and monitoring of the contract execution have been compromised by limitations in hiring external consultants due to budget constraints" (p.21), which corroborates the findings of [16] indicating that there is a deficit of public sector skills for effective contractual management and oversight of the PPP model. This idea becomes even clearer when we analyze the conclusions of the [30] where it is stated that "the annual critical processes of follow-up and monitoring of the partnership proved to be slow, with frequent, and in some cases significant, delays in relation to what was foreseen in the Management Contract" (p.22). This conclusion is in line with the findings of [42] who indicate that effective management and regulation of contracts is not verified by the Portuguese public partner, having negative consequences and long-term impacts.

If we add to the previous findings the fact that [15] argue that, in practice, the success of a given PPP project depends critically on the contracts to be drawn up and operationalized, we find that the public partner has several shortcomings in the operationalization of management contracts, specifically regarding contract management tasks.

There is a clear dissonance between the indicators required and monitored for PPP hospitals and those required for PMH hospitals, which goes against the literature (e.g., [43]) that argues that the performance required from the private partner should not be substantially different from that required from the public partner in similar contracts. This idea had already been advocated by [44], when it stated that the State should strengthen its ability to control the effectiveness of contracts, starting this activity in the planning phase of the partnership and not only when the contract is signed.

4. Conclusions

To answer our research question, it is necessary to note that the public partner has a clear deficit of human resources allocated to the tasks of controlling and monitoring PPP contracts, as mentioned in the various audits carried out by the TC and summarized in Table 1. This deficit results in insufficient monitoring of SNS hospitals, including PPP hospitals, by the ACSS, despite the expenses described along several audits analyzed (i.e., [39,40]).

In addition, and according to our findings described in Table 2, we may conclude that the State is inefficient in fulfilling its role as supervisor of the services provided and is unable to analyze the results obtained by the PPP model, which makes it even more urgent to create a PPP agency to monitor PPP contracts in an effective and comprehensive manner.

Notwithstanding the shortcomings identified, with respect to the contractual management tasks performed by the public partner, according to the data summarized in Table 2 and 3, the production levels of the four PPP hospitals complied with the contractual stipulations, although some of the non-compliance recorded was due to restrictions imposed by the public partner, sometimes unilaterally, on the private partner.

Thus, we were able to assess that the performance (in terms of production) of PPP hospitals in Portugal was adequate throughout the analyzed period, according to what was contractually agreed with the State.

Over the last 10 years, we should have witnessed the State taking advantage of all the experience gained from the four PPP projects and applying this experience to the PMH hospitals. What we have concluded is that not only has the state failed to perform the tasks of supervising and monitoring the PPP model in an effective manner, which has prevented it from acquiring new competencies in terms of management, but it has also failed to adjust the level of service required of the PMH hospitals to that required of the PPP hospitals.

References

[1] Akintoye, A., Hardcastle, C., Beck, M., Chinyio, E., & Asenova, D. (2003) “Achieving best value in private finance initiative project procurement.” *Construction Management Economics*, **21(5)**: 461–470. https://doi.org/10.1080/0144619032000087285.

[2] Mitchell, M. (2003) “An overview of public private partnerships in health.” *Harvard*. https://www.hsph.harvard.edu/ihsg/publications

[3] Bradford, N. (2003) “Public-private partnership? Shifting paradigms of economic governance in Ontario.” *Canadian Journal of Political Science*, **36(5)**: 1005–1033. https://doi.org/10.1017/S0008423903778949.

[4] Carvalho, J. M. S. (2009). *Gestão e Marketing*. Ed. Sílabo, Lisboa.

[5] Torchia, M., Calabrò, A., & Morner, M. (2015) Public–Private Partnerships in the Health Care Sector: A systematic review of the literature." *Public Management Review*, **17(2)**: 236–261. https://doi.org/10.1080/14719037.2013.792380

[6] Chambers, N., Sheaff, R., Mahon, A., Byng, R., Mannion, R., Charles, N., Exworthy, M., & Llewellyn, S. (2013) "The practice of commissioning healthcare from a private provider: learning from an in-depth case study." *BMC Health Services Research*, **13(1)**:2003 https://doi.org/10.1186/1472-6963-13-S1-S4

[7] Caselli, S. Vecchi, V., & Corbetta, G. (2015) "*Public Private Partnerships for Infrastructure and Business Development*." Palgrave Macmillan

[8] Eicher, B. (2016) "Selection of asset investment models by hospitals: examination of influencing factors, using Switzerland as an example." *International Journal of Health Planning and Management*, **31(4)**: 554–579. https://doi.org/10.1002/hpm.2341

[9] Carvalho, João M. S., & Rodrigues, N. (2022) "Perceived Quality and Users' Satisfaction with Public–Private Partnerships in Health Sector" *International Journal of Environmental Research and Public Health* **19(13)**:8188. https://doi.org/10.3390/ijerph19138188

[10] Simões, P., & Marques, R. C. (2011) "Performance and congestion analysis of the Portuguese hospital services." *Central European Journal of Operations Research*, **19(1)**: 39–63. https://doi.org/10.1007/s10100-009-0122-2

[11] Nunes, R. (2014) "*Regulação da saúde*" (3ª ed.). Vida Económica, Lisboa.

[12] Garvin, M. J. (2010) "Enabling Development of the Transportation Public-Private Partnership Market in the United States." *Journal of Construction Engineering and Management*, **136(4)**: 402-411. https://doi.org/402–411. 10.1061/(ASCE)CO.1943-7862.0000122.

[13] Osei-Kyei, R., & Chan, A. P. C. (2017) "Implementation constraints in public-private partnership." *Journal of Facilities Management*, **15(1)**: 90–106. https://doi.org/10.1108/JFM-07-2016-0032.

[14] Grimsey, D., & Lewis, M. (2004) "The Governance of Contractual Relationships in Public–Private Partnerships." *The Journal of Corporate Citizenship*, **3(15)**: 91-109. https:// doi.org/10.9774/gleaf.4700.2004.au.00010.

[15] Iossa, E., & Saussier, S. (2018) "Public private partnerships in Europe for building and managing public infrastructures: An economic perspective." *Annals of Public and Cooperative Economics*, **89(1)**: 25–48. https://doi.org/10.1111/apce.12192.

[16] Hodge, G. A., & Greve, C. (2008) "The PPP phenomenon: performance and governance insights." *ANU Press*, 93-112.

[17] Barros, P. (2019) "*Economia da Saúde"* (4th ed.). Almedina, Lisboa.

[18] António, I. (2014) "Parcerias Público-Privadas no Setor da Saúde: Análise e reflexão sobre alguns Aspetos Economico-financeiros." *Revista Eletrónica de Direito*, **2**: 10-28.

[19] Visconti, R. M. (2014) "Multidimensional principal-agent value for money in healthcare project financing." *Public Money e Management*, **34(4)**: 259–264. https://doi.org/10.1080/09540962.2014.920198.

[20] Monteiro, R. S. (2005) "Public-private partnerships: some lessons from Portugal." *EIB Papers*, **10(2)**: 72–81.

[21] DGTF (2012) "*Parcerias Público-Privadas e Concessões - Relatório de 2012 (Relatório nº 2012)*." Ministério das Finanças e da Administração Pública – Direcção-Geral do Tesouro e Finanças.

[22] Jackson, P.R., Easterby-Smith, M., Thorpe, R. (2015) "*Management and Business Research"* (5th ed.). Sage Publications Ltd.

[23] Cassell, C. M., & Symon, G. (2012) "*Qualitative organizational research: core methods and current challenges*". Sage Publications Ltd.

[24] Cassell, C., & Symon, G. (2004) "*Essential guide to qualitative methods in organizational research*". SAGE Publications Ltd.

[25] Cassell Das, R.; Jain, K.K.; Mishra, S.K. (2018) "Archival research: a neglected method in organization studies." *Benchmarking: An International Journal*, **25(1)**: 138–155. https://doi.org/10.1108/BIJ-08-2016-0123.

[26] Yin, R. K. (2013) "*Case Study Research: Design and Methods*." (5th ed.). Sage.

[27] Weintraub, R. (2001) "Logical knowledge." *International Journal of Philosophical Studies*, **9(1)**: 3–18. https://doi.org/10.1080/09672550010011427

[28] Lakatos, E. M. & Marconi, M. A., (1991). "*Fundamentos de Metodologia Científica*". Atlas.

[29] TC – Tribunal de Contas. (2016) "*Auditoria à execução do Contrato de Gestão do Hospital de Braga em Parceria Público-Privada (PPP)*." Relatório n.º 24/2016-2ª Secção. Proc. n.º 09/15-Audit. Available at: https://www.tcontas.pt/pt-pt/ProdutosTC/Relatorios/RelatoriosAuditoria/Documents/2016/rel024-2016-2s.pdf

[30] TC – Tribunal de Contas. (2019) "*Auditoria de resultados à execução do contrato de gestão do Hospital de Vila Franca de Xira em PPP*." Relatório nº 24/2019 - 2.ª Secção. Available at: https://www.tcontas.pt/pt-pt/ProdutosTC/Relatorios/RelatoriosAuditoria/Documents/2019/rel024-2019-2s.pdf

[31] TC – Tribunal de Contas. (2015) "*Auditoria à execução do contrato de gestão do Hospital de Loures*". Relatório nº19/2015 - 2ª Secção. Available at: https://erario.tcontas.pt/pt/actos/rel_auditoria/2015/2s/audit-dgtc-rel019-2015-2s.PDF

[32] IGAS – Inspeção Geral das atividades em saúde. (2018) "*Informação Síntese – Controlo e Monitorização dos Contratos de Gestão dos Hospitais PPP*". Informação nº 78/2018 – PROC 18/2017-ESC-AIP. Available at: http://www.igas.min-saude.pt/wp-content/uploads/2017/07/Proc_18_2017_ESC_AIP_inf_78_2018.pdf

[33] TC – Tribunal de Contas. (2013) "*Encargos do Estado com PPP na saúde*." Relatório nº18/2013 - 2ª Secção. Available at: https://www.tcontas.pt/pt-pt/ProdutosTC/Relatorios/RelatoriosAuditoria/Documents/2013/rel018-2013-2s.pdf

[34] TC – Tribunal de Contas. (2014) "*Auditoria à execução do Contrato de Gestão do Hospital de Cascais*". Relatório nº11/2014 - 2ª Secção. Available at: https://www.tcontas.pt/pt-pt/ProdutosTC/Relatorios/RelatoriosAuditoria/Documents/2014/rel011-2014-2s.pdf

[35] TC – Tribunal de Contas. (2014) "*Auditoria à execução do Contrato de Gestão do Hospital de Cascais*". Relatório nº11/2014 - 2ª Secção. Available at: https://www.tcontas.pt/pt-pt/ProdutosTC/Relatorios/RelatoriosAuditoria/Documents/2014/rel011-2014-2s.pdf

[36] TC – Tribunal de Contas. (2021) "*Relatório Síntese Parcerias Público-Privadas hospitalares no SNS*." Relatório nº 5/2021 – OAC – 2ª Secção. Available at: https://www.tcontas.pt/pt-pt/ProdutosTC/Relatorios/relatorios-oac/Documents/2021/relatorio-oac005-2021.pdf

[37] UTAP – Technical Project Monitoring Unit. (2016) "*Relatório Intercalar – Hospital de Cascais*" (1º Relatório intercalar). Available at: https://www.utap.gov.pt/Publicacoes_utap/Hospital%20de%20Cascais%20-%20Relatorio%20intercalar%20-%20Outubro2016.pdf

[38] UTAP – Technical Project Monitoring Unit. (2017) "*Relatório Intercalar – Hospital de Braga*" (1º Relatório intercalar). Available at: https://www.utap.gov.pt/Publicacoes_utap/Relat%C3%83%C2%B3rio%20Fundamentado%20relativo%20ao%20Hospital%20de%20Braga.pdf

[39] UTAP – Technical Project Monitoring Unit. (2019a) "*Relatório Intercalar – Hospital de Vila Franca de Xira*" (1º Relatório intercalar). Available at: https://www.utap.gov.pt/Publicacoes_utap/Relat%C3%83%C2%B3rio%20Fundamentado%20relativo%20ao%20Hospital%20de%20Vila%20Franca%20de%20Xira.pdf

[40] UTAP – Technical Project Monitoring Unit. (2019b) "*Relatório Intercalar – Hospital de Loures*" (1º Relatório intercalar). Available at: https://www.utap.gov.pt/Publicacoes_utap/Relat%C3%B3rio%20Fundamentado%20relativo%20ao%20Hospital%20de%20Loures.pdf

[41] Grimsey, D., & Lewis, M. (2007). "*Public Private Partnerships and Public – The Worldwide Revolution in Infrastructure Provision and Project Finance*". Edward Elgar.

[42] Cruz, C. O., Marques, R. C., & Cardoso, P. (2015) "Empirical Evidence for Renegotiation of PPP Contracts in the Road Setor." *Journal of Legal affairs and Dispute resolution in Engineering and Construction*, **7(2)**. https://doi.org/0.1061/(ASCE)LA.1943-4170.0000151.

[43] Almeida, V. (2020). "*Concessões e Parcerias Público-Privadas (PPP)*." Instituto de Ciências Jurídico-Políticas. Lisboa.

[44] PWC (2013). "*Desafios da saúde em Portugal*". PWC. Available at: www.pwc.pt/saude/