



**THE PORTUGUESE PUBLIC PROCUREMENT SYSTEM AS A STRATEGIC
INSTRUMENT OF PUBLIC MANAGEMENT**

**EL SISTEMA DE CONTRATACIÓN PÚBLICA PORTUGUÉS COMO INSTRUMENTO
ESTRATÉGICO DE LA GESTIÓN PÚBLICA**

**O SISTEMA NACIONAL DE COMPRAS PÚBLICAS PORTUGUÊS COMO
INSTRUMENTO ESTRATÉGICO DA GESTÃO PÚBLICA**

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Recibido: 09 de mayo de 2022

Aprobado: 09 de septiembre de 2022

DOI: <https://doi.org/10.22267/rtend.222302.221>

Abstract

This research aims to evaluate the National Public Procurement System (NPPS) as a strategic instrument of public management, in Portugal. The creation of NPPS, in 2007, followed the European Union model for public procurement, based on criteria of economy, efficiency, and effectiveness that leads to greater transparency and accountability and reflects public value. This



experiment analysis which are the weakest and the strongest dimensions of the NPPS and to what extent does the performance of the NPPS fit as a strategic instrument of public management. A research survey, based on the conceptual model developed by Essig et al. (2010) and later applied by Thi et al. (2012), adapted to Portuguese context, was applied to 1,500 entities linked to the NPPS. The sample size of 101 valid questionnaires corresponds to an effective response rate of 5.6%. The data analysis used exploratory factor analysis to validate the distribution of the variables and performed a principal component analysis with varimax rotation. The research concluded that NPPS has, in general, a low level of performance, despite the positive contribution of the “Information and control” and “Electronic platforms” factors in process management. These results corroborate the need for a realignment of the public procurement strategy in Portugal.

Keywords: administrative sciences; factor analysis; Portugal; public administration; public sector.

JEL: C38; H11; H57; K12; O38

Resumen

Esta investigación tiene como objetivo evaluar el Sistema Nacional de Contratación Pública (NPPS) como un instrumento estratégico de gestión pública, en Portugal. La creación de NPPS, en 2007, siguió el modelo de la Unión Europea para la contratación pública, basado en criterios de economía, eficiencia y eficacia que conduce a una mayor transparencia y rendición de cuentas y refleja el valor público. Este experimento analiza cuáles son las dimensiones más débiles y más fuertes de la NPPS y en qué medida encaja el desempeño de la NPPS como un instrumento estratégico de la gestión pública. Una encuesta de investigación, basada en el modelo conceptual desarrollado por Essig et al. (2010) y posteriormente aplicado por Thi et al. (2012), adaptado al contexto portugués, se aplicó a 1.500 entidades vinculadas al NPPS. El tamaño de la muestra de 101 cuestionarios válidos corresponde a una tasa de respuesta efectiva del 5,6%. El análisis de datos utilizó análisis factorial exploratorio para validar la distribución de las variables y realizó un análisis de componentes principales con rotación varimax. La investigación concluyó que NPPS tiene, en general, un bajo nivel de desempeño, a pesar de la contribución positiva de los factores “Información y control” y “Plataformas electrónicas” en la gestión de procesos. Estos resultados corroboran la necesidad de un realineamiento de la estrategia de contratación pública en Portugal.

Palabras clave: ciencias administrativas; análisis factorial; Portugal; administración pública; sector público.

JEL: C38; H11; H57; K12; O38

Resumo

Esta investigação tem como objetivo avaliar o Sistema Nacional de Compras Públicas (NPPS) enquanto instrumento estratégico de gestão pública, em Portugal. A criação da NPPS, em 2007, seguiu o modelo da União Europeia para as compras públicas, baseado em critérios de economia, eficiência e eficácia que conduzem a uma maior transparência e responsabilização e refletem o valor público. Este experimento analisa quais são as dimensões mais fracas e mais fortes das NPPS e em que medida a atuação das NPPS se enquadra como instrumento estratégico da gestão pública. Uma pesquisa de levantamento, baseada no modelo conceitual desenvolvido por Essig et al. (2010) e posteriormente aplicado por Thi et al. (2012), adaptado ao contexto português, foi aplicado a 1.500 entidades ligadas às NPPS. O tamanho da amostra de 101 questionários válidos corresponde a uma taxa de resposta efetiva de 5,6%. A análise dos dados utilizou a análise fatorial exploratória para validar a distribuição das variáveis e realizou uma análise de componentes principais com rotação varimax. A pesquisa concluiu que o NPPS apresenta, em geral, baixo nível de desempenho, apesar da contribuição positiva dos fatores “Informação e controle” e “Plataformas eletrônicas” na gestão de processos. Estes resultados corroboram a necessidade de um realinhamento da estratégia de contratação pública em Portugal.

Palavras-chave: ciencias administrativas; análise factorial; Portugal; administração pública; setor público.

JEL: C38; H11; H57; K12; O38

Introduction

In a context of scarce resources and restricted public spending, public procurement is an important strategic tool for political intervention aimed at implementing public policies, simplifying procedures, modernizing structures, reducing expenditure and increasing efficiency of Public Administration operations (Arrowsmith, 2014; Boyne & Walker, 2010; Kelman, 2002; Organisation for Economic Co-operation and Development [OECD], 2015, 2019). Public

procurement has not only an operating component, but also a strategic and politically sensitive dimension, which involves large amounts of public money and contributes strongly to economic dynamics (Essig et al., 2009; Guarnieri & Gomes, 2019; Karjalainen, 2011; OECD, 2021; Schapper et al., 2006; Thai et al., 2005). However, Grandia (2018) alludes that despite the enormous impact of public procurement on the economy, public sector and citizens, this sub-field of investigation has not yet been recognised as an important policy instrument in public administration research. Hudon et al. (2021) also draw attention to this fact and suggest how to improve the visibility and relevance of public procurement research in public administration journals.

According to OECD (2021), public procurement in 2019 represented 12.6% of GDP and 29.6% of overall government spending in OECD countries. In the European Union (EU) public procurement also plays a significant role in the economies of the Member States and is estimated to be about 14.9% of GDP and 27.9% of the total government expenditure in 2020. Given this high relevance, studies have concluded that a strategic approach to procurement may help to improve the national objectives and the government's responses (OECD, 2019).

The EU assigns an essential role to public tendering as one of the market instruments to be used, namely with a focus on innovation and incentive objectives towards a competitive economy, with high levels of employment that ensure social and territorial cohesion (European Commission, 2011; The European Parliament and the Council of the European Union, 2014). Thus, the focus should not only be on reduced spending. Regarding the effectiveness, efficiency and economy triangle, other objectives to be achieved with public procurement must be included: influencing market behaviour and structure, greater social cohesion, better environment and more innovation (Edler & Georghiou, 2007; Harland et al., 2019; Knutsson & Thomasson, 2014; McCue et al., 2015; OECD, 2019; Thai, 2017).

In line with this, budget constraints throughout the last decade in Portugal, highlighted the need for an efficient and sustainable public procurement system, which should be guided by public interest, based on accountability and transparency. Therefore, the Programme of the XXI Constitutional Government of Portugal (2015) set forth that public procurement would be used as

one of the key instruments for Public Administration efficiency. With this in mind, the Government simplified procedures, reduced costs for businesses and public services, promoted the dissemination of electronic public procurement and the creation of a network of shared services, among others. The Programme of the XXII Constitutional Government of Portugal (2019) reinforces the use of public procurement to prevent corruption and fraud, improving public procurement processes, increasing transparency and eliminating unnecessary bureaucracy. This means investing in energy efficiency, emphasizing the sustainability of bids as an award criterion; and simplifying administrative activity, by promoting the use of electronic platforms.

The paradigm shift occurred in 2007, with the creation of the NPPS, a new single public procurement regime that replaced the scattered legislation and made the transition to electronic platforms. The NPPS was aimed at ensuring the simplification and transparency of the processes, as well as the introduction of public e-procurement (electronic procurement) and centralized procurement through framework agreements for goods and services across the entire Public Administration. This system was designed to reach a greater efficiency in public expenditure and to be an instrument for the effectiveness of public procurement management, by creating synergies and economies of scale (Decree-Law 37, 2007).

The NPPS has been a strategic bet of recent governments because: (i) public procurement has a very significant weight in public spending; (ii) there has been continued overuse of direct award procedures (Instituto dos Mercados Públicos, do Imobiliário e da Construção [IMPIC], 2021); and (iii) framework agreements have not led to initially expected gains.

In this framework, the research aims to understand whether the NPPS displays a quality performance as a strategic public management tool in Portugal, identifying which are the weakest and the strongest dimensions of the system and their contribution to the performance of the NPPS. To reach this purpose, the study stated the following research question: To what extent does the performance of the NPPS fit as a strategic instrument of public management in Portugal?

The works developed by Essig et al. (2010), inspired by Schapper et al. (2006), were used as methodological support for the development of this research, regarding the creation of a questionnaire aimed at evaluating the performance of the public procurement activity based on a construct that would allow to represent “Excellence in Public Procurement”. This questionnaire was applied in Germany, by Thi et al. (2012) described in the article *Public Procurement Benchmarking: Conceptual Model and First Empirical Findings*.

According to Pollitt & Bouckaert (2011) and Thi et al. (2012), benchmarking plays an important role in public administration studies. The research may also support the development of a performance benchmark, by comparing results from Portugal and Germany, which are countries from different ‘families’ of European states, characterized by a Rechtsstaat culture of governance, but with different models and traditions of public administration (Kuhlmann & Wollmann, 2014). The German government has also been highlighting strategic procurement (OECD, 2019).

The great relevance of this study is due to the research gap in the field of public procurement in Portugal. Moreover, the only few studies carried out point to a low performance of the NPSS and to the non-fulfillment of the initial objectives, namely regarding economy and competition, despite the positive contribution of transparency (Lopes & Romão, 2021). At the international level, namely in the EU and the OECD, comparative studies have also been given relevance, to promote knowledge and debate on public procurement.

The organization of this paper is as follows. The first section provides the theoretical lens based on the New Public Management impetus to the improvement of efficiency and performance in the public sector. Strategic management also plays a key role in public management, contributing to a better performance of public services, namely with regard to public procurement. Then, it is presented an overview of the Portuguese public procurement system, focused on the NPSS. The following section provides the methodology for this study, including the methods and the conceptual model, based on a construct that represents the concept of “Excellence in Public Procurement”. The next section presents the data analysis and a critical discussion of the results of the empirical study. Finally, the conclusion presents the contributions and limitations of the research.

Theoretical framework

The New Public Management (NPM) paradigm, despite the diversity and ambiguity of interpretations, encourages the improvement of efficiency and performance in public sector organizations, following private sector practices, deemed more efficient (Hood, 1991, 1995; Secchi, 2009). The introduction of new technologies and tailor-made procedures would lead to increasing the productivity and quality of public services. The creation and monitoring of key performance and benchmarking indicators would enable the assessment and control of results (Dunleavy & Hood, 1994; Hood, 1995; Pollitt et al., 2007), as well as the introduction of new public procurement tools, among other innovations (Callender & Matthews, 2002; Thai, 2009).

NPM promotes efficiency, effectiveness and economy, advocating for greater responsibility, transparency and accountability in the public sector (Hood, 1991; Secchi, 2009). Scenario-based decision making also favours increased transparency and accountability in the public sector (Albano et al., 2013). The goal is to make structures more flexible, decentralize power and autonomy, provide guidance to a customer regarding its activity, rationalize resources, assess performance and be guided by outputs and outcomes and the “value for money” concept (Dunleavy & Hood, 1994; Hood, 1995). These NPM proposals were adopted in several countries. International institutions such as the World Bank, the OECD and the IMF, among others, actively promoted the application of a set of tools deemed “good practices” in order to introduce changes and reforms in Public Administration that would converge towards greater efficiency, efficacy and effectiveness, by enhancing transparency and accountability in the public sector (OECD, 2015).

In this context, a set of strong budgetary restrictions put governments under considerable strain, regarding the obligation of “doing more with less” and public entities were forced to bear the consequences of these constraints. In this case, constraints meant downsizing, redundancies, demand for greater transparency, and greater concerns about efficiency, fairness and equity (Albano et al., 2013; Hood, 1991, 1995; Thai, 2009, 2017). Successive waves of reforms sought better performance of the public sector (Pollitt & Bouckaert, 2011), by focusing on improved efficiency and effectiveness, and on public procurement results (Albano et al., 2013; Schapper et

al., 2006; Thai, 2017), namely through public procurement centralization and aggregation (Albano & Sparro, 2010; Karjalainen, 2011).

Strategic management also plays a key role in public management, contributing strongly to a better performance of public services, namely with regard to public procurement innovation (Bovaird, 2016; Boyne & Walker, 2010; Demircioglu & Vivona, 2021). The adopted strategy must be feasible, create value and be sustainable (Moore, 1995, 2000). Hence, public procurement plays a strategic role for public management and policies, requiring an in-depth study and analysis of the procurement objectives in permanent conflict (Matthews, 2005). Namely, these objectives include quality and costs; deadlines and costs; risks and costs; socioeconomic objectives and costs; and competition and costs (Thai, 2009, 2017). Public procurement is a “complex arena where a number of different competing priorities can confuse final goals” (Erridge, 2007, p. 1027). Plantinga et al. (2020) highlight the importance of strategic alignment in the public procurement process and the influence of procurement instruments to shape the procurement process.

Public procurement is a crucial instrument for governments, either in relation to public policies, or as a means to achieve cost reduction and increase efficiency (OECD, 2015; Snider & Rendon, 2008, 2012; Tátrai, 2015; Thai et al., 2005) and plays a key role in the EU strategy (The European Parliament and the Council of the European Union, 2014). The main function is to ensure that goods and services are purchased, by enabling the attainment of government purposes and commitments. In general, public procurement includes all activities that are necessary to obtain public goods and services (Essig et al., 2009; Thai, 2009).

The starting point is at the political level, with decision making regarding responsibilities. The process involves the identification of a need, supplier selection and negotiation, tendering procedure and awarding contracts. Demand management sets the start of awarding procedures, which identifies and specifies the characteristics, quantity and quality of the needs (Essig et al., 2009; European Commission, 2018).

A public procurement system consists of different pillars: legislation and regulations; employees; process and methods; and the organizational structure (Thai, 2009). The ability to implement

policies and achieve public procurement system goals is affected by the environment and, in turn, those influence that environment as well (market, legal, socioeconomic, political or otherwise) (Arrowsmith, 2009; Thai, 2001, 2009).

Erridge (2007) and Thai (2009) argue that public procurement's potential has been restricted by the emphasis placed on market objectives to be achieved, overvaluing economy and efficiency to the detriment of social welfare and public values. They emphasize the use of public tenders to support public policies in areas of intervention that include employment, social exclusion, the protection of minorities, economic development, mainly for small companies, and environmental policy. McCue et al. (2015) stressed the trade-off between economic efficiency and the effort to maintain control against fraud and mismanagement. In this regard, e-procurement has played a very important role (Vaidya et al., 2006; World Bank Group, 2016).

One of the biggest challenges in public management will be to reconcile the different objectives of the public procurement activity, which may be conflicting or even incompatible at times. Erridge & Greve (2016) highlight the concepts of competition, quality, value for money and sustainability. Schapper et al. (2006) present a set of objectives (Public trust; Efficiency and efficacy; and Policy compliance and consistency) and propose three approaches to achieve these objectives, which can be combined to a greater or lesser degree, based on public procurement regulation, management and/or centralization.

The focus on results and efficiency has been expanded and has given way to enhancing and creating public value. This concept has been gaining prominence in the field of public policies and introduced new dimensions in Public Administration, not only from the perspective of the value for citizen, but also from the perspective of adding value to the public sphere (Bozeman, 2007; Moore, 1995; O'Flynn, 2007). Snider & Rendon (2008, 2012) propose a matrix that associates public service values with public procurement policies, processes and practices, highlighting the importance of these matters in the context of Public Administration and Public Policies. A more comprehensive and analytical approach to measuring public procurement performance is the

current agenda, and the political strategy shifts from value for money to social value for money (Albano et al., 2013; Albano & Sparro, 2010).

According to the World Bank Group (2016), transparency, accountability, equal treatment, competition and good procedural management are the fundamental principles that should underlie all public procurement transactions. Transparency is essential at all process stages and promotes competition by favouring the cost-benefit ratio and optimizing the allocation of public resources. Respect for these principles, framed by proper regulatory mechanisms, leads to ensure probity of the processes and prevents the strong appetite for corruption of this function (Halonen, 2019; OECD, 2016; Trepte, 2005).

Public procurement rules protect and promote competition as a way to ensure value for money and the legitimacy of procurement decisions, by attaining the best offers and limiting corruption (OECD, 2016; Sánchez, 2015). To achieve value for money it is essential that public tendering processes operate in competitive markets. However, public tendering rules can distort the dynamics of competing markets. Directive 2014/24/EU is a fundamental pillar in the defence of the principle of competition within the EU and, consequently, its Member States. The promotion of competition between different actors, in a scenario of full competition, should always be present in the public procurement activity (Arrowsmith, 2014; Caupers, 2013; The European Parliament and the Council of the European Union, 2014).

Public procurement in Portugal

The strategy for creating the NPPS was intended to reduce public expenditure, by centralizing the purchasing function and by establishing framework agreements in the key sectors with the highest volume of transactions. Framework agreements are agreements signed between one or more contracting entities, in order to establish future contractual relations over a certain period of time, by setting out the respective terms and conditions of such agreements in advance (Article 251 of Decree-Law 18, 2018). They allow assess suppliers preliminarily and establish the conditions and requirements that they have to comply with, namely, in terms of prices, deadlines, service levels and quality of service. However, despite their popularity, some doubts and uncertainties remain

regarding the effective contribution of framework agreements (Andrecka, 2015). This work will also help to close this gap.

Framework agreements have multiple advantages, but they can carry out some risks, especially as regards to the (anti)competitive impact: (i) they favour the exchange of information and collusion between economic operators, damaging the public interest; and (ii) they limit competition because they are active for a long period (up to 4 years) preventing the entry of new competitors, which can cause market distortions, similar to those that occur in the case of monopolies.

In Portugal, NPPS is a network system in order to manage work processes and functional relations between the Government Shared Services Entity (eSPap), ministerial purchasing units and purchasing entities. The development and provision of shared services within the public administration, as well as design, management and evaluation of the national procurement system is ensured by eSPap. It also provides state fleet management, supporting the development of strategic policies of information and communication technologies of the Ministry of Finance, enabling the planning, design, implementation and evaluation of technological computerization initiatives for the respective departments and agencies. NPPS was set up in 2007 and, in the following years, the model materialized with the creation of framework agreements, with the National Public Procurement Plan and with the development of information systems and the legal framework. Today, only nine framework agreements are active, despite having doubled in the first few years. NPPS has 1.500 public purchasing entities (direct government services and public institutes) and 705 related purchasing entities (autonomous administration and public business sector), both benefiting from the contracting instruments provided by eSPap (The Government Shared Services Entity [eSPap], 2022).

In summary, NPPS aimed at simplifying, reducing bureaucracy and making more flexible procedures, in order to increase transparency and efficiency of public expenditure.

Methodology

The methodology adopted in this study was based on the public procurement management model proposed by Schapper et al. (2006). The comprehensive and complex model proposes an integration of the various dimensions of public procurement management. It suggests that the dimensions of strategic, performance and process management may be related with the centralization-decentralization issue that often becomes evident in public procurement reform processes.

With regard to measure and assess the quality of the NPPS's performance, the research evaluated users' perception about the strengths and weaknesses of the system. To this end, the study applied a questionnaire on a nationwide level, according to Thi et al. (2012), designed and adapted to the Portuguese context. The questionnaire was elaborated based on the original dimensions, as well as its sub-division into factors. However, to pursue this new reality, it was necessary to adapt and reduce the number of questions related to each factor. This reduction takes into consideration two conditions: (i) some of the covered contents did not apply to NPPS; and (ii) some questions were meant to be measured in a quantitative scale, which couldn't be applied as the respondents had no access to that type of information. Nearly 33% of the original questions could not be included.

The questionnaire was validated by carrying out a pre-test, on a small scale, using the spoken reflection method. The data obtained with the pre-test, was then gathered in a database, and subjected to a set of statistical analysis procedures in order to obtain the questionnaire validation (Hill & Hill, 2012, p. 147).

The applied questionnaire has 56 questions, which cover three dimensions for the public procurement activity: (i) Strategic management; (ii) Performance management; (iii) Process management. To characterize the respondent entity three questions were added to the questionnaire. The Strategic Management dimension includes 34 variables aimed at eliciting opinions from the respondents on six factors: “Public procurement objectives”; “Public procurement strategy”; “Reduced spending strategy”; “Sustainability strategy”; “Innovation strategy” and “Economic strategy”. The Performance Management dimension has eight variables, aimed at assessing the “Economics of means”; “Economics of processes”; “Customer

management” and “Supplier management”. The Process Management dimension consists of 14 variables, which are clustered into four factors: “Compliance with procurement procedures”; “Knowledge of processes”; “Information and control” and “Electronic platform” (Figure 1).

The questionnaire was sent by email to the public procurement officials of 1.500 entities linked to the NPPS, whose organizational model included three levels of intervention: the procurement centre (eSPap), Ministerial Procurement Units, under the supervision of each ministry, state-owned enterprises (direct and indirect government services) and instrumentalities (autonomous administrative and public business sector entities) (Article 3 of Decree-Law 37, 2007). As for the 56 questions related to the three dimensions under analysis, the respondents answered them using a five-point Likert scale (1 = strongly disagree; 5 = strongly agree). Concerning the total number of responses, 101 valid questionnaires were obtained, corresponding to an effective response rate of 5.6%, which, although reduced, follows a trend observed in similar studies (Thi et al., 2012; Walker & Brammer, 2009).

To achieve the study goals, a global descriptive analysis was carried out; an exploratory factor analysis was used to validate the distribution and accommodation of the variables into the extracted factors; and the existence of a relationship between the factors and the observed dimensions will be validated with non-parametric tests. In addition, the performance of the public procurement activity will be evaluated, based on the referred representation construct of “Excellence in Public Procurement”.

Regarding the running of an exploratory analysis, the preliminary analysis focuses on: (i) reliability analysis, by measuring the internal consistency (Cronbach’s alpha > 0,9; retention or removal of the item considering the coefficient if item deleted); (ii) analysis of the extraction communalities values (small value of extraction is an indication for remove the item); and (iii) KMO and Bartlett’s tests. Then, a Principal Component Analysis (PCA) with Varimax rotation was performed. The number of factors to be retained take into consideration the Eigenvalues, the scree plot and the total variance explained. This analysis pretends to verify if the distribution and

accommodation of the variables to the previously established groups (Table 1) keeps the same or had been allocated in different factors.

Results

The sample consists of participants who work in agencies linked to the NPPS, 77.8% in the Direct State Administration and 22.2% in the Indirect State Administration. Regarding the respondents who participated in the study, 23.5% belong to a Ministerial Procurement Unit and 67.3% say that their main function is or has been in the public procurement sector. Given the distribution, the sample is representative for the objectives of the study.

The descriptive analysis of the sample was initially conducted, in accordance with the original structure of the dimensions, respecting the constitution of each of the factors in its variables.

The global analysis of the *Strategic Management* dimension reveals an unfavourable perception for all the factors under analysis except for the "Reduced spending strategy". The "Sustainability strategy", "Innovation strategy" and "Economic strategy" factors lean towards a more unfavourable response, in which the median oscillated between 1 and 2 for 21 of the 24 questions that constitute these factors. As for the individual analysis of this set of variables, it stands out that: (i) 56% of the variables had higher outliers, which reinforces the tendency of an unfavourable response in the global dimension of *Strategic management*; (ii) 81% of respondents showed a negative perception in relation to the use of framework agreements as a means of promoting Small and Medium Enterprises (SMEs). The analysis of this dimension allowed us to conclude that the framework agreements do not seem to contemplate a sustainability strategy, either through social or environmental factors, being presented only as a positive impact towards the reduction of public spending.

All variables in the *Performance Management* dimension have the same median value (3) and the presence of higher outliers in some variables is also observed, which reinforces the unfavourable response trend. It should be pointed out that respondents did not understand that the adoption of a centralized system may have contributed to: (i) a better public procurement process at the lowest

cost; (ii) reduced length of public procurement procedures; (iii) improve the management of the organizations' needs.

According to the analysed data, the duration of the framework agreements is not an important factor for the performance of suppliers. Respondents had a favourable perception of the variables regarding the positive contribution that satisfaction surveys of target recipients and the performance assessment of suppliers has in the performance management of future procurement processes. They believe that evaluating these parameters contributes to a better performance management of public procurement. The responses from those who work in public procurement sectors and those who work in organizations that perform ministerial procurement functions were the ones that best contributed most to this positive view of the evaluation process.

The global analysis of this dimension reveals that framework agreements are not having a relevant impact on the performance management of public procurement.

The set of variables included in the *Process Management* dimension collected the most favourable responses from the entire study, with median values ranging from 3 to 4 and registered the presence of lower outliers in six variables, which reverses the perceived trend so far. However, the number of favourable responses does not exceed 50% in most questions. It is also worth noting the vague responses regarding the use of electronic platforms in framework agreement procedures, as a way to improve competition. In this case, in relation to efficiency; effectiveness; equal access or transparency, approximately 35% of respondents answered, "Neither agree nor disagree".

The three dimensions under analysis show an unfavourable perception of the quality of the NPPS, as a significant majority has more than 60% of the responses between "Strongly disagree" and "Neither agree nor disagree", as exhibited in Table 1. This observation is transversal to the adopted strategies, customer and/or supplier management performance, or to the management of public procurement processes. There were only two questions, which were directly related to information and control benefits, where respondents showed a more positive perception of the NPPS.

Table 1

Median values for preliminary indicators

Dimension	Components	Median values
Strategic Management	Public procurement objectives	2.8
	Public procurement strategy	3.3
	Reduced spending strategy	4.0
	Sustainability strategy	2.1
	Innovation strategy	2.1
	Economic strategy	1.6
Performance Management	Economics of means	3.0
	Economics of processes	3.0
	Customer management	3.0
	Supplier management	3.0
Process Management	Compliance with procurement procedures	3.3
	Knowledge of processes	3.0
	Information and control	4.0
	Electronic platform	3.2

Source: own elaboration.

As the results obtained in the descriptive analysis of the several dimensions and some of the factors presented themselves with a very low contribution of items to their constitution, it was necessary to validate the contribution of each variable in relation to these factors and see if they were kept in accordance with the original structure of the questionnaire. In order to extract these factors, the principal component method was used, because the data did not present a multivariate normal distribution.

A different composition of factors was obtained, which was already expectable given the adaptation, and reflects the characteristics intrinsically related to this study. Only 49 questions were considered in the determination of the factors, as the questions that were dispersed by several factors with loadings below 0.5 were not considered in the analysis. The 49 questions are now distributed by six factors that explain a total variance of 72.865%, with a KMO value of 0.895. It should be noted that all factors had high α -Cronbach values, five factors with very good internal consistency and one factor with good internal consistency.

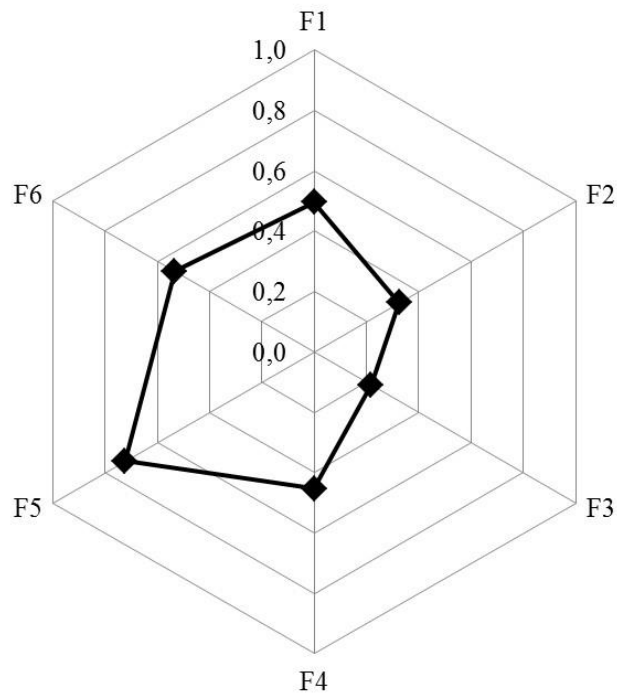
According to the questions that contribute to each of the factors (Appendix 1), the following designations were assigned: (1) Public procurement strategy; (2) Sustainability and innovation strategy; (3) Economic strategy; (4) Performance and compliance with procedures; (5) Information and control; (6) Electronic platform. The analysis of the factors reveals that three of them have an identical composition to that observed in the study by Thi et al. (2012). These are “Economic strategy”, “Information and control” and “Electronic platform”. The other three factors result from a reorganization of the variables and reflect the Portuguese reality.

The new composition of factors leads to two dimensions, which can be looked over in Appendix 1, the first called *Strategic Management*, and the second called *Process Management*. A set of three factors is assigned to each dimension. The *Strategic Management* dimension consists of 30 variables distributed by the following factors: “Public procurement strategy”; "Sustainability and innovation strategy" and "Economic strategy". The *Process Management* dimension consists of 19 variables with the following factors: “Performance and compliance with procedures”; “Information and control” and “Electronic platform”.

For a better understanding of the weight of each of the six factors in the perception of the NPPS quality performance, as a strategic public management tool, the latent factors are now presented on a scale between 0 and 1. The first three factors, which represent the *Strategic management* dimension, exhibit a low score. The *Process management* dimension has higher values, with emphasis on the latent factor called “Information and control”, which is related to the adoption of a procedure manual, control and/or audit actions, confirming the importance of these types of actions. The latent factor that includes items related to the use of electronic platforms closely follows the values of the previous component, as shown in Figure 1.

Figure 1

Analysis of latent factors



Note. F1 - Public procurement strategy; F2 - Sustainability and innovation strategy; F3 – Economic strategy; F4 - Performance and compliance with procedures; F5 - Information and control; F6 - Electronic platform.

Source: own elaboration.

The analysis of latent factors was performed for each of the groups included in the characterization, and in general, all point towards the same direction of the global analysis. However, the most positive view should be highlighted in all factors, which is registered when it comes to respondents whose functions are performed in a ministerial procurement unit or when their main function is or has already been related to the public procurement sector.

The study also stems from the fact that there is a correlation between two pairs of latent factors, hence evidencing not only the existence of correlation within the same dimension, “Sustainability and innovation strategy” and “Economic strategy”, but also between the factors of two dimensions, “Public procurement strategy” and “Performance and compliance with procedures”.

Conclusions

This study was aimed at evaluating the quality of the National Public Procurement System, based on the performance assessment of the public procurement activity as a strategic public management tool in Portugal. It was expected that the NPPS would gather a set of award criteria: efficiency, transparency, and competition, as proliferated by public administration reforms based on the NPM's principles and instruments, aiming at a better performance of the public sector. However, from a general point of view, it was possible to conclude that the changes in the public procurement system did not live up to the initial expectations of decision-makers.

The research points to a low level of activity performance, leading to the conclusion that the quality of the NPPS has not yet reached the desired targets. In this regard, the Court of Auditors (2015) concluded that, although the NPPS presented an added value for the State, the system still failed to reach potential gains, and significant improvements can be introduced in several areas. In the same sense, a recent audit, which assessed the implementation of the National Strategy for Ecological Public Procurement (NSEPP) 2020 as a complementary tool to national public policies in sustainability, concluded that NSEPP 2020 is not being applied in an effectively, pointing out several shortcomings (Court of Auditors, 2020).

In terms of strategic management, all indicators present a low weight for the good performance of the activity. As for framework agreements, the study seems to give credence to the doubts in the literature regarding their effective contribution. Results show that they do not contribute significantly to a sustainability strategy within a social or environmental scope, despite the positive effect in reduced spending. Furthermore, framework agreements do not appear to be making a significant contribution to the performance management of public procurement. As mentioned, the strategy for creating the NPPS was intended to reduce public expenditure. To this end, instruments involved public procurement centralization and aggregation, following the NPM literature and the guidelines of international organizations.

Regarding process management, the study reveals a greater positive contribution to the good performance of the activity, with special emphasis on the factors "Information and control",

namely through the existence of procedure manuals and internal control processes, and “Electronic platforms”, which allows for an improvement in competition, efficiency, and effectiveness in public procurement processes. This confirms the NPM advocates for the great contribution that new technologies and innovation introduce into the processes. These results, regarding e-procurement and its contribution to transparency and competition, are highlighted in further studies.

As for the adoption of a centralized system, it was not possible to clearly validate its contribution to the reduction of costs and/or to the reduced length of processes and respective procedures. In addition, there are variables within this dimension related to customer management (satisfaction surveys of target recipients) and supplier management (supplier performance assessment), which obtained a clear positive perception. This allows us to conclude that these items may have a significant contribution to the improvement of the NPPS performance. Knowing the perceptions of NPPS’s users is also an important contribution to decision makers to improve the public procurement system and strategic management.

The final structure, which resulted from the adaptation of the Thi et al. (2012) model, as expected, exhibits a different composition of variables that reflects the context characteristics and the national public procurement system. The model, presented and structured in two large dimensions with six factors, supported by a good internal consistency, with high loadings values per variable, allows the evaluation of the performance of the NPPS in its "Strategic Management" and "Process Management" context. For greater reliability of results, this model should be applied on a longitudinal evaluation, based on a new survey, in order to compare the evolution of the NPPS performance over the time.

In sum, the research concluded that the performance of the NPPS as a strategic instrument of public management in Portugal did not fit neatly. The NPPS should improve criteria such as efficiency and effectiveness, as well as go further in creating public value and in its contribution as a strategic instrument for public management. These results, which are in line with other studies, corroborate the need for a realignment of the public procurement strategy in Portugal. This means that

governments will have to go beyond to achieve an efficient and effective NPPS while being transparent and promoting competition.

In the end, considering the empirical results, we are aware of some potential research limitations. First, the study concerns a specific case in Portugal, which can limit generalization of the results. The sample size can also limit statistical conclusions, although it follows a trend observed in similar studies. At last, the adaptation of Thi et al. (2012) model for the Portuguese reality, and the non-inclusion of all variables from the original study, can make it difficult to compare results and may result in another limitation.

Ethical considerations

This research did not require ethical endorsement because it was based on public documents and the questionnaire preserved the anonymity and confidentiality of responses.

Interest conflicts

All authors made significant contributions to the document and declare that there is no conflict of interest related to the article.

Authors' contributions statement

Ana Lúcia Romão: conceptualization, methodology, validation, investigation, writing - original draft, writing - weview & editing, visualization. Ana Paula Ferreira: methodology, validation, formal analysis, investigation, writing - review & editing, visualization.

Funding Source

This work was supported by Portuguese national funds through FCT - Fundação para a Ciência e a Tecnologia, under project UIDB/00713/2020. Authors would like to thank Maria José Efigénio for supporting in the construction and application of the questionnaire.

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Cómo citar este artículo: da Silva, A. y Ventura, A. (2023). The portuguese public procurement system as a strategic instrument of public management. *Tendencias*, 24(1), 198-225. <https://doi.org/10.22267/rtend.222302.221>

Appendix

Appendix 1

Composition of latent factors

Dimension	Components	Variables
Strategic Management	Public procurement strategy	1.1 In framework agreements, the objectives to be achieved through public procurement are clearly defined.
		1.2 The awarding criteria adopted in framework agreements consider objectives to be achieved with public procurement, such as: 1.2.1 Efficacy; 1.2.2 Efficiency; 1.2.3 Reduced costs; 1.2.4 Environmental
		1.3 In framework agreements, there are clearly defined strategies for the objectives to be achieved through public procurement.
		1.4 In framework agreements, strategies related to suppliers are clearly defined.
		1.5 The "lowest price" awarding criterion is used in framework agreements as a means of reducing public procurement costs.
	Sustainability and innovation strategy	2.1 The awarding criteria adopted in framework agreements consider factors related to the sustainability of natural resources.
		2.2 The awarding criteria adopted in framework agreements take into account factors such as: 2.2.1 Pollutant emission level; 2.2.2 Environmental certification of companies; 2.2.3 Eco-label; 2.2.4 Energy consumption; 2.2.5 Product life cycle
		2.3 The awarding criteria adopted in framework agreements take into account social and labour factors, such as: 2.3.1 Occupational safety and health; 2.3.2 Corporate social responsibility actions; 2.3.3 Professional training; 2.3.4 Family support systems for workers

	2.4 The awarding criteria adopted in framework agreements consider factors to promote innovation, such as: 2.4.1 Alternative goods or services; 2.4.2 Means of production or distribution; 2.4.3 Use of information and communication technologies; 2.4.4 E-commerce; 2.4.5 Scientific research	
Economic strategy	3.1 Framework agreements are used as a means of promoting Small and Medium Enterprises. 3.2 The awarding criteria adopted in the framework agreements consider factors that promote Small and Medium Enterprises, such as: 3.2.1 Skilled labour; 3.2.2 Employment; 3.2.3 Geographic location of companies; 3.2.4 Incorporation of local and/or regional resources; 3.2.5 Use of information and communication technologies 3.3 Framework agreements are used as a means of regional promotion.	
Process Management	Performance and compliance with procedures	4.1 The adoption of a centralized system contributes to: 4.1.1 Better public procurement processes at the lowest cost; 4.1.2 The reduced length of public procurement procedures. 4.1.3 Improving the management of organizational needs; 4.1.4 Improving knowledge about public procurement processes; 4.1.5 The performance of suppliers in public procurement processes; 4.1.6 Improving specific knowledge about the categories of goods or services to be purchased and the respective market; 4.1.7 Improving public procurement management; 4.1.8 Improving knowledge about the legal aspects related to public procurement. 4.2 Assessing the level of satisfaction of target recipients within a centralized system contributes to improving future procurement processes. 4.3 Assessing the level of performance of suppliers within a centralized system contributes to improving their performance in future procurement processes. 4.4 Assessing the satisfaction level of suppliers within a centralized system contributes to improving their performance in future procurement processes. 4.5 The adoption of a centralized system helps to improve compliance with the rules of public procurement procedures. 4.6 The adoption of a centralized system is a way of standardizing procedures and the proposal model.
	Information and control	5.1 The adoption of a procedure manual helps to improve public procurement processes. 5.2 Control actions and/or audits contribute to improving public procurement processes.
	Electronic platform	6.1 The use of an electronic platform in procedures under framework agreements is a way of improving: 6.1.1 Competition in public procurement processes; 6.1.2 Efficiency in public procurement processes; 6.1.3 Effectiveness in public procurement processes; 6.1.4 Equal access for companies in public procurement processes

Source: own elaboration.