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## Evidence of the impacts of public e-procurement: The Portuguese experience

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## ABSTRACT

This paper analyses public e-procurement implementation and emphasizes its main difficulties and impacts in relation to the type of public organizations. The primary impacts and changes in the Portuguese public sector are analyzed within the new legal framework, which adopts mandatory e-procurement for any open, restricted or negotiated procedure. In this sense, two surveys carried out in consecutive years were conducted to assess the implementation difficulties and impact of e-procurement in the Portuguese public sector.

The major value of this research is that it presents and discusses, for the first time, evidences about difficulties and impacts on the mandatory adoption of public e-procurement, based on the case of Portugal. The results show that the entities' administrative level influences the e-procurement implementation, which is influenced by the innovation adoption process.

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## 1. Introduction

The European Commission (EU) recognizes that Europe is facing serious economic, social, and environmental challenges, and there is a growing expectation on the part of European citizens and businesses for governments to be more open, flexible, responsive and collaborative when delivering public services across [European Commission \(2010a\)](#). All over Europe, national governments, businesses and societies are endeavouring to optimize resources, redesign processes and develop innovative instruments to improve productivity and support better decisions. The Information and Communication Technologies (ICT) emerge as strategic instruments in improving communication, collaboration and process efficiency and enhancing performance-based approaches to projects and processes ([European Commission, 2010a, 2010c](#)). According to e-government benchmark results ([European Commission, 2009b](#)), the advantages of ICT are already recognized and Europe demonstrates steady progress in terms of full online services availability. In this context, one of the most discussed issues is the introduction of ICT in public procurement processes. Public e-procurement is considered an important

contribution towards an efficient, transparent and less bureaucratic society, having positive impacts on buyer–supplier relationships ([Ellram and Zsidisin, 2002](#); [Johnson, 2011](#); [Narasimhan and Das, 2001](#)).

Based on public e-procurement benefits, the [Manchester Declaration \(2005\)](#) set two ambitious targets with the aim of creating a single market for e-procurement. The declaration reports that

... by 2010 all public administrations across Europe will have the capability of carrying out 100% of their procurement electronically, where legally permissible, thus creating a fairer and more transparent market for all companies independent of a company's size or location within the single market. By 2010 at least 50% of public procurement above the EU public procurement threshold will be carried out electronically.

Notwithstanding, according to a detailed e-procurement indicator based on an analysis of 746 national, regional, and local EU27+ public authorities ([European Commission, 2010a](#)), the EU Member States are still far from the availability target established by the Manchester Declaration. However, the Green Paper on expanding the use of e-procurement in the EU ([European Commission, 2010b](#)) presented a general strategy to revamp public e-procurement in all member States and help to meet the EU goals for 2020.

Portugal is an exception, since public procurement has been fully electronic as of November 1st 2009 for any open, restricted or negotiated process, making the country the first to be able to assess the impacts of mandatory public e-procurement. Regarding

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the Portuguese case, the [European Commission \(2010b\)](#) mentioned that:

Overall take-up, both within most countries and across the EU as a whole, remains low and is estimated to be less than 5% of total procurement by value. The exception to this low use is Portugal, where the use of electronic means to conduct the procurement phases up until contract award has been mandatory since 1 November 2009 for most public purchases.

Making the most of this opportunity, two national surveys have been conducted – during the transition period and after e-procurement became mandatory – focusing on public e-procurement implementation and the impacts thereof. The research work took different types of public entities into consideration in order to capture different behaviours facing ICT diffusion and impacts ([Agarwal and Prasad, 1999](#); [Esposito and Mastroianni, 2002](#)). By evidencing the perceptions of public contracting authorities (PCAs) and the dynamics of e-procurement adoption in the case of Portugal, this work contributes to expanding knowledge about public e-procurement and highlighting the challenges in terms of implementation and impacts on PCAs.

Through these surveys, this paper aims to answer the following research questions: what are the major implementation difficulties and impacts of e-procurement for PCAs? And how does the PCAs' perception of e-procurement change over time? In order to reduce the scope of the main research question, several hypotheses were formulated based on existing literature ([Croom and Brandon-Jones, 2007, 2005](#); [Johnson, 2011](#); [McConnell et al., 2010](#); [Vaidya et al., 2006](#)): e-procurement increases transparency and competition among suppliers and reduces bureaucracy, procedure durations and overall costs; the e-procurement implementation difficulties and impacts depend on the administrative level of PCAs; and the lack of skilled human resources and ICT restricts e-procurement implementation.

## 2. Overview of public e-procurement

Public procurement is a key issue in most countries because its value tends to be higher than 17% of GDP in the EU (17.23% in EU-27, equivalent to EUR 2.16 trillion in 2008) ([European Commission, 2010d](#)), a significant percentage. Therefore, considerable gains can be achieved by increasing procurement efficiency. This is especially true since public contracts are criticized for high complexity and cost and low transparency and value ([Spiller, 2008](#); [Tavares, 2008](#)). Public contracting is also recognized as bureaucratic and rigid, requiring frequent renegotiation and proactive conflict management. In this adverse but challenging context, e-procurement emerges in the public sector with the main objective of reducing complexity and improving competitiveness and transparency ([Croom and Brandon-Jones, 2007, 2005](#); [Duyshart et al., 2003](#); [Johnson, 2011](#)).

In the last few years, e-procurement has gained in popularity, and the respective benefits are discussed at length in the literature ([Garrido et al., 2008](#); [Ronchi et al., 2010](#); [Schoenherr and Tummala, 2007](#); [Walker et al., 2008](#)). According to [Schoenherr and Tummala \(2007\)](#), the earliest publications referring to e-procurement appeared in 1997 and academic community activity in this subject area increased in 2001, reaching a peak in 2004.

As demonstrated by the benchmarking study of [Puschmann and Alt \(2005\)](#), e-procurement benefits are, essentially, efficiency and effectiveness gains. Successful practices are identified that maximize the e-procurement potential, including:

- reduction or elimination of authorization stages;
- regulation of exceptions to a limited degree at the beginning;
- elimination of paper;
- integration of suppliers in the entire process chain;
- consideration of the complete process from searching for articles to invoicing.

These practices aim to eliminate the difficulties experienced in the traditional procurement method and promote more integrated and straightforward processes. They also contribute to a new vision of e-procurement that merits attention. This vision must be more integrated, more efficient and performance-based, focusing on a wider range of procurement subjects, considering strategic perspectives and giving the contract a central role ([Collins, 1999](#); [Vincent-Jones, 2006](#)).

The e-procurement platforms use a sequence of tasks based on electronic systems that provide services for communicating, handling, treating and storing data according to high levels of security and trust ([Fig. 1](#)). There are various forms of e-procurement, such as e-marketplace, e-auction or e-catalogue, that are best viewed as a more broadly end-to-end solution. This solution integrates and streamlines many procurement processes throughout the organization ([Vaidya et al., 2006](#)). In this integrated and paperless context, the execution of contracts becomes easier and more rigorous since all relevant information is available through the electronic platform, and greater attention can be directed to non-operational issues.

### 2.1. Public e-procurement in Portugal

The previous Portuguese legal framework for procurement was based on two different laws, one for public supply contracts and public service contracts (Decree-Law 197/99) and another for public works contracts (Decree-Law 59/99). When the EU published its new Directives (Directive 2004/17/CE and Directive 2004/18/CE), the Portuguese law was discussed and a new legal framework began to be developed to overcome existing fragilities and transpose the European directives to the Portuguese legal system ([European Commission, 2004](#)). The new Public Contracts Code (PCC), Decree-Law 18/2008, was inspired by significantly different objectives such as ([Mateus et al., 2010](#)):

- full adoption of e-procurement;
- broad flexibility of procedures to award contracts including new options such as reverse auctions, dynamic acquisitions systems, framework agreements, etc.;
- transparency of the tender evaluation model, through specification of the multi-criteria model for evaluating tenders in the procurement notice.

The PCC introduced important alterations, obligating all actors to interact and communicate through the internet, to use certified e-procurement platforms, and to authenticate processes using qualified digital signatures. These requirements introduced

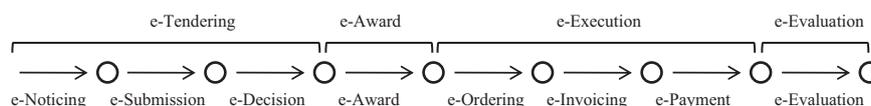


Fig. 1. e-Procurement lifecycle.

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