



# An overview of scholarly research on public e-services? A meta-analysis of the literature

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## ABSTRACT

Public e-services are a broad and growing research field in which scholars and practitioners from different domains are involved. However, the increasing attention devoted to public e-services only partially captures the extreme variety of aspects and implications of the diffusion of information and communication technologies at all levels of public administrations. The paper aims to develop a meta-analysis of the literature on the delivery, diffusion, adoption and impact of public e-services and examines differences in methodologies, approaches and key indicators across five service categories: e-government, e-education, e-health, Infomobility and e-procurement. We examined 751 articles appeared in 2000–2010 in the top international academic journals listed in the SSCI-ISI, as classified in the following fields: Communication, Economics, Education, Environmental Studies, Geography, Health Policy and Services, Information Science and Library Science, Law, Management, Planning and Development, Public Administration, Transportation and Urban Studies. We highlight a significant heterogeneity in scientific production across service categories, indicators used, and affiliation of authors. We also show an increasing diffusion of quantitative methods applied to different research fields which still appears to be constrained by data limitations. The overall picture emerging from the analysis is one characterized by largely unexplored domains as well as scarcely analyzed issues both across and within individual service categories. Thus many research opportunities seem to emerge and need to be exploited from different disciplinary perspectives in this field of analysis.

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## 1. Introduction

The widespread diffusion of Information and Communication Technologies (ICT) has changed the perception of the role of services in economic activities and society as a whole. Indeed these technologies allow the availability, provision and accessibility of high-quality value added services in real-time, virtually anyplace and allow an unprecedented involvement of a variety of user categories at all levels, including individual citizens, firms and other institutions. An extensive literature has focused on the diffusion of e-services, as part of a process of structural change and innovation in services which is proceeding hand in hand with the increasing role of knowledge as a fundamental driver of growth (Camacho & Rodriguez, 2007; Gallouj & Savona, 2010; Kox & Rubalcaba, 2007).<sup>1</sup> Within this general context, the diffusion of ICT in the public sector

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<sup>1</sup> Though there is no universally accepted definition of e-services (Rajshekhar, Charles, & Patricia, 2004), the following conceptualization proposed by Ruyter, Wetzels, and Kleijnen (2001) is worth of mentioning: "E-service is an interactive, content-centered and Internet-based customer service, driven by the

and the development of web-based public services has become a recognized research domain and has been gaining importance in the analysis of institutional change and public policy.

In this paper we analyze the pace and direction of research on public e-services over the past decade, and identify key issues emerging from different streams of literature in this field. More precisely, we will:

- examine patterns of authorship by academic background and area of origin;
- assess the intensity and growth over time of academic research in the field of public e-services;
- investigate the relative importance of research efforts in five service categories (e-government, e-education, e-health, Infomobility and e-procurement);
- analyze the geographical focus of research on public e-services;
- evaluate differences in methodologies and key indicators used across these categories.

To pursue this set of objectives, we examined some 751 articles on the diffusion, adoption and socio-economic impact of public e-services appeared in academic journals listed in the Social Science Citation Index (SSCI) of the Institute for Scientific Information (ISI) over the 2000–2010 period, as classified in the following fields: Communication, Economics, Education, Environmental Studies, Geography, Health Policy and Services, Information Science and Library Science, Law, Management, Planning and Development, Public Administration, Transportation and Urban Studies.

Articles are classified according to the institutional affiliations of authors and co-authors, to the range of public e-services covered, and to the methodologies used. This overview should help identify research challenges and opportunities in the field, following the belief that analyzing the past should allow us to prepare for the future (Webster & Watson, 2002).

The remainder of this paper is organized as follows. In the next section we briefly review relevant studies which may help develop an appropriate framework for subsequent analysis of public e-service literature. In Sections 3, 4 and 5 the research methodology used is outlined, and then the results obtained in the empirical research are analyzed. Finally, the main conclusions of this study are summarized and some questions on future trends in this area are highlighted for discussion.

## 2. Literature review

A relatively long tradition in bibliometrics, starting from the seminal contribution by Alan Pritchard in 1969, has focused on such key methodological issues as the identification of the historical roots of a particular field of study, the prediction of future research trends and the analysis of critical knowledge gaps (Broadus, 1987; Nour, 1985; Sellen, 1993; Shapiro, 1992). The idea underlying these studies is that examining patterns of academic research in a systematic way should help discern the direction taken in a discipline, highlight possible inadequacies of analytical approaches, provide a crucial starting point for novel scholarly work and greatly facilitate the enhancement of knowledge.

Until recently, few works have reviewed extant literature on public e-services and more generally on Information Systems (Webster & Watson, 2002). One reason for this has to do with the youth of these research areas. Moreover the lack of review works reflects the complexity and inter-disciplinary nature of this research area spanning from Computer Science to Information and Library Science to Education, Environmental/Transportation studies, Health Science, Management/Economics, and Public Administration sciences, to cite just the most relevant fields. In this direction Malone and Crowston (1994) provide an excellent, albeit rare, example of a review work covering different areas like computer science, economics, operations research, organization theory, and biology. Löfstedt (2005) develops a map of some of the current researches in the field of e-government and analyses how different aspects, methods and scientific approaches in the field are connected to each other, and this mirrors into extensive networks involving researchers from different research areas. Thus, scholars focusing on e-government might have to rely on a variety of disciplinary backgrounds (e.g. organization theory, social science, informatics, computer science, public administration, business administration, economics, political science, law, government professionals, library science), and their approaches may well differ depending on the starting point and on the problem domain chosen. This implies that constructing a review on Information Systems fields, and on Public e-services in particular, is a challenging process because we often need to draw on theories, methods and data from a variety of fields.

Scholars in the field of Public Administration studies have addressed several issues that are relevant to the analysis of public e-services. Much like other fields, review works on Public Administrations have generally identified the quality of research with the impact factor of journals in which scientific publications appear (Lan & Anders, 2000; Plümper & Radaelli, 2004). Stallings and Ferris (1988) stated that highly rated journals were the most qualified locus of dissemination of academic research. Furthermore, they highlighted the excessive use of qualitative methods such as case studies and non-empirical research which might undermine the precision and objectivity of analyses. They concluded that research methodologies used in public administration studies needed to be made more accurate to attain a better acceptability in academic terms: research should be based on sound empirical bases and not only on impressionistic evidence (Houston & Delevan, 1990). Although both

*(footnote continued)*

*customer and integrated with related organizational customer support processes and technologies with the goal of strengthening the customer-service provider relationship".*

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