



# From too little to too much innovation? Issues in measuring innovation in the public sector



Anthony Arundel<sup>a,b,\*</sup>, Dorothea Huber<sup>c</sup>

<sup>a</sup> Australian Innovation Research Centre, 1 College Road, University of Tasmania, Hobart, Australia

<sup>b</sup> UNU-MERIT, Maastricht, The Netherlands

<sup>c</sup> Department of Innovation, Industry, Science, Research and Tertiary Education, 10 Binara Street, Canberra, Australia

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## ABSTRACT

Interviews with 37 branch level managers in the Australian Federal Government were conducted to determine how managers understood the concept of innovation and their familiarity with different types of innovations. A follow-on survey found that 91% of branches introduced an innovation in the previous two years. This high rate suggests that many of the innovations could be minor. Extensive cognitive testing found that public sector managers can provide high quality estimates of the amount of person months expended on innovations and on other measures of the significance of an innovation. Using this information, the share of branches that introduced a significant innovation is approximately 60%. Although suggestive, there is no statistically significant difference in the time required to develop innovations derived from ideas provided by upper management or by lower level staff. These and other results are relevant to the design and interpretation of public sector innovation surveys.

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## 1. Introduction

The OECD (2012) defines the public sector as ‘the general government sector at the national, regional and local levels plus all public corporations including the central bank’. Based on this definition, the public sector accounts for between 20% and 30% of GDP in economically developed countries.<sup>1</sup> This is a substantial share of economic output

and considerably more than the share of manufacturing in most countries. Not surprisingly, there is growing policy interest in how to measure and evaluate innovation in the public sector as part of a goal to improve the efficiency and quality of public sector services. This has led to the European Commission’s support for several large projects of relevance to public sector innovation.<sup>2</sup>

Measurement requires agreement on how to define innovation in the public sector. Although there is currently a lack of agreement, with multiple definitions of different types of public sector innovations, a common theme is that

\* Corresponding author at: Australian Innovation Research Centre, 1 College Road, University of Tasmania, Hobart, Australia. Tel.: +61 3 6226 7357.

E-mail address: [Anthony.arundel@utas.edu.au](mailto:Anthony.arundel@utas.edu.au) (A. Arundel).

<sup>1</sup> Estimates of the public sector share of GDP of up to 50% or 55%, widely reported in popular magazines and newspapers and in some academic research (see Potts and Kastle, 2010; Thenint, 2010) are due to confusing tax revenues with GDP. In 2005, the tax revenue share of GDP in Denmark and Sweden was close to or over 50%, at 50.8% and 48.9% respectively (OECD, 2012). Tax revenue is not a measure of the economic contribution

of the public sector to GDP because a sizable fraction of these revenues is spent on transfer payments to individuals for pensions and welfare payments or to private businesses as subsidies. The economic contribution of these transfer payments to GDP is based on how the recipients choose to spend or invest these payments.

<sup>2</sup> Examples include the ServPPIN project (Rubalcaba et al., 2013) and PUBLIN (Koch and Hauknes, 2005).

public sector innovation involves novelty and the intention of making something better, for instance through new or improved services and processes.

It is not clear when academic researchers began to systematically examine public sector innovation. Roessner's (1977) study *'Incentives to innovate in public and private organizations'* could be the first study to directly examine the concept of innovation in the public sector, but relevant research from a management or entrepreneurial perspective was published in the 1960s.<sup>3</sup> Until the early 2000s, most research on public sector innovation was by academics in one of these two disciplines and appears to have been dominated by case studies.

Management research in the 1980s and 1990s focused on the adoption of New Public Management, which supported major organizational changes to reduce hierarchical structures and apply practices in use in the private sector, such as contracting out, performance targets, internal markets to provide pressure to innovate, and increased independence for senior management (Bartlett and Dibben, 2002; Laegreid et al., 2011). New Public Management methods were viewed as a solution to a perceived lack of innovation in the public sector, due in part to an aversion to risk and an anti-innovation public sector culture (Windrum, 2008). The increased responsibility for managers would permit them to make top-down decisions to introduce innovations. Other factors that were seen as limiting public sector innovation included several unique attributes of the public sector in comparison to private firms, such as deriving revenue from budgetary allocations rather than sales (which removes a market incentive to innovate), the need to respond to many constituencies, and because government must meet explicit moral imperatives as well as demands for economic efficiency (Drucker, 1985). The perception that the public sector is non-innovative due to risk aversion, a hostile culture to innovation and a lack of incentives has persisted over time (see Mulgan and Albury (2003) and Potts and Kastle, 2010).

This perception could partly be due to the dominance of case studies in research on public sector innovation. Although case studies provide a valuable in-depth understanding of how innovation can occur and are of considerable value to theory building, they are not generalizable to a population (in this case the population of public sector organizations) and they cannot provide indicators that can be used for benchmarking or tracking the prevalence of innovation activity over time. A full understanding of the types of innovations that are developed in the public sector, how innovation occurs, and the factors that promote or hinder innovation requires data on a large number of public sector organizations or on a large number of public sector innovations.

Larger-scale studies of public sector innovation are relatively recent, with almost all publications appearing after 2000. Since 2005, the focus of this research has shifted towards innovation surveys, almost all of which have been modelled to a greater or lesser extent on innovation surveys for the private sector. This is work in progress: to

date academic researchers lack an adequate theory for how public sector innovation occurs to guide the design of innovation questionnaires for public organizations. This requires a lengthy iterative process between theory generation and empirical testing. As an example, the OECD's first edition of the Oslo Manual (OECD, 1992), providing guidelines for how to measure innovation in the private sector, was based on over a decade of experimental survey research in Canada, Europe and the United States (Arundel and Smith, 2013).

The goal of many academic researchers is to develop sufficient understanding of public sector innovation to produce a manual for measuring innovation in the public sector that is equivalent to the Oslo Manual. The purpose of this article is to use the results of a series of interviews and a pilot survey of public sector innovation in Australia to contribute to two issues of relevance to this goal. The first is how public sector managers view innovation, including their understanding of different types of innovations. The results of this research can help to address a puzzle: why do large-scale innovation surveys find that over 80% of public sector organizations are innovative, given the assumed barriers to innovation such as the lack of market drivers? The second is the source of the ideas for innovation. Both issues are relevant to not only the design of innovation questionnaires, but also to how we interpret the results of public-sector innovation surveys.

The next section of the paper provides a brief summary of large-scale research into public sector innovation. This is followed by a description of the methodology, a discussion of the results, and a few conclusions of relevance to future work.

## 2. Progress towards measuring public sector innovation

Keyword searches, citation analysis and a review of listed references to published documents identified 18 studies that used 15 surveys and other large-scale data sources to evaluate public sector innovation in developed economies, with the exception of service providers for health and education, which were specifically excluded.<sup>4</sup> None of the large-scale studies cover all types of public sector organizations, with most focused on public administration. Only Palmer and Dunford (2001) examine innovation by large state-owned companies. These types of companies are often excluded from research on public sector innovation because they are frequently subject to competition and the goal of earning a profit, both characteristics of private businesses. Laegreid et al. (2011) is the only study to examine innovation in quasi-autonomous public organizations.

<sup>4</sup> The method is biased towards publications in English and excludes relevant studies outside Europe, Australia, Canada and the United States. In addition, we do not include research in developing countries, such as the object-based studies by Wu et al. (2010) of public sector innovation in China. Health and education providers such as hospitals, schools and universities were excluded because they have been the subject of innovation-related research for decades and have particular characteristics that may not be comparable to other public sector organizations.

<sup>3</sup> See Windrum (2008) for a review of some of these earlier studies.

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