

# Making sense of the users of public sector accounting information and their needs

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## Abstract

**Purpose** – The purpose of this paper is to dismantle the complex issue of “use of accounting information (AI)” by pointing to different groups of information users, diverging interests and needs of these user groups and various influential factors on the usability and the actual use of AI.

**Design/methodology/approach** – This paper includes a literature review and conceptual reflections.

**Findings** – The review of recently published articles on the issue of “use of accounting information” presents an actual picture of the academic debate on purposes of use, user types, needs of various user groups and factors influencing the usability and the actual use of AI. The subsequent conceptual reflections deal with so far less regarded user groups, with options to strengthen the user perspective in budgeting and financial reporting, with approaches for engaging users in the content of accounting documents, with interrelations between user needs, usability and use intensity, including various antecedents of the different variables of the information-use issue.

**Research limitations/implications** – This paper presents promising routes for future research.

**Practical implications** – The paper emphasizes the importance of paying more attention to the specific information needs and the motivations of various stakeholder groups generally interested in using financial information.

**Originality/value** – The paper presents results of reviewing recent literature on the issue of “use of accounting information” and provides some insight into specific aspects of this issue.

**Keywords** User, Usability, Use, Accounting information, Financial information, User needs

**Paper type** Viewpoint

## 1. Introduction

In their seminal book about public sector accounting, Jones and Pendlebury (2000, pp. 125-126) claim that financial reporting “above all must be useful,” but these authors also highlight that “[...] accounting can be based, not on users and their needs, but on hypothesized users and hypothesized user needs” (p. 126; see also Jones, 1992, p. 259). This raises at least two questions: do these hypotheses about users and their needs make sense, and to what extent diverging needs of different user groups have to be distinguished? In line with Steccolini’s (2019) call for a reflection on uses and users of accounting information (AI) in the public sector, the aim of our paper is to present a review of the recent literature about users of public sector AI, their needs, the perceived usefulness[1] and the actual use of such information. Based on this, we intend to discuss some challenging themes and to explore future research directions in this domain.

Three major themes about users of public sector AI will be discussed. First, how can users be categorized into groups, including linkages between diverging types of user groups of AI to specific issues in accounting documents, especially in budgets and financial reports? This theme attempts to provoke the conventional wisdom of accounting documents containing information that is of interest to all thinkable types of user groups. Second, which approaches for measuring user needs or engaging users in the design of accounting

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documents are opportune for enhancing the usability and use of these documents? This theme is relevant because users should have their say about the design of accounting documents and the relevance and understandability of the included information. With regard to the literature, there seems to be a lack of appropriate methods informing about user needs. So far, mostly user surveys, interviews and consultations of stakeholders have been applied, whereas more promising methods are thinkable. And third, what are the antecedents of the users, their needs, the perceived usability and the actual use of accounting documents, and how do these antecedents influence the various links among these variables? The answers to these questions are meant to stimulate research about the conditions under which AI is usable and ultimately used.

Our paper is a combination of a “literature review” and a “viewpoint.” The literature review aims to give a broad overview of the findings of empirical studies on the usability and use of public sector AI, while the thematic discussion focuses on specific issues that are according to the authors relevant for further exploration. The authors’ view is based on the available literature which points to unresolved or contested issues, and also on our own research experience. This implies that we do not pretend that the three themes we explore are comprehensive for the “usability-use” phenomenon, but that they are at least important and possibly even crucial. Another implication is that each of the themes can be linked to findings of the literature review, which gives these themes a broader than just a subjective justification.

We are putting the “user” in the center of our analysis, although other actors, such as producers and intermediaries, are also involved in the provision and “use” of AI. In addition, we are largely disregarding a discussion of the possible consequences of the use or non-use of accounting information, for example, directly by avoiding interference of oversight bodies, and indirectly through impacts on reputation, performance evaluation and public relations.

The paper proceeds as follows. After a review of the recent literature on user types and their needs, use purposes and issues of usability and use of financial information are presented in Section 2, the subsequent Sections 3–5 address the themes as introduced above. Tensions and dilemmas of public sector accounting users are reflected in Section 6, and Section 7 presents our conclusions and reflects on future research directions. Before proceeding, it is appropriate to define what is meant with AI throughout this paper. AI is mostly constrained to financial information, which can be found in budgets (including budget reports), annual accounts but also in tailor-made documents for planning, control and accountability of projects or programs. Of course, there is also a broader understanding of accounting that includes non-financial information.

## 2. Review of recent literature

The following review is based on literature published over the last 15 years dealing with the use of AI in the public sector from an empirical perspective. The starting point of our selection of articles is papers published in a special issue of *Public Money and Management* in 2016 (Vol. 36, Issue 7) which focused particularly on politicians’ use of AI. The references of these articles (including a paper providing a literature review) helped us to identify further relevant sources[2]. Furthermore, we searched in Google Scholar (search terms: users, user needs, use – always connected with accounting/financial information and always restricted to public sector). Altogether, from the about 50 identified articles we selected 30 articles for a detailed review which explicitly dealt with the subjects of our study. A restriction of the review to the last 15 years is appropriate because other reviews (Buylen and Christiaens, 2016, pp. 455-456; van Helden, 2016, pp. 531-533) indicate that research on public sector AI used in earlier years is scarce, while the last 15 years showed some interest in this theme.

Our main interest when reviewing the literature was to identify the different variables playing a role in the whole context of “use of accounting information” and to collect and

assess empirical data indicating the existence of certain characteristics of the whole use issue and its antecedents. Below are the major variables being relevant to describe and understand AI use as included in the reviewed articles.

### *2.1 Purposes of AI use*

Two major purposes are frequently mentioned: rendering accountability to various stakeholders and supporting decision making. The first purpose relates to compliance with existing rules and regulations and ensures legitimacy toward external stakeholders and accountees. Accountability usually has an *ex-post* perspective. On the contrary, the use of AI to support decision making has an *ex-ante* view and is relevant not only for external stakeholders (e.g. creditors), but also for managers and other internal stakeholders. Some articles present quite detailed lists of specific use purposes of AI, e.g. to estimate cash flow needs, to assess performance or to calculate the cost of services (Andriani *et al.*, 2010; Kober *et al.*, 2010; Mack and Ryan, 2006). In general, according to the reviewed articles, both purposes of AI use are empirically equally relevant. All such purposes can be classified as purposeful use (Moynihan and Pandey, 2010). Apart from them, other purposes of information use may play a role: for instance, the “political” use of information, e.g. in a mere “ceremonial” manner of budget formulation (Mutiganda, 2016), as ammunition for supporting political interests (Giacomini *et al.*, 2016) or for manipulating strategic decisions (Pernsteiner *et al.*, 2016).

### *2.2 Actors in the context of AI use*

Obviously, the most dominant actor group are users, i.e. persons or institutions interested in informing themselves about certain financial issues. From a formal point of view, a distinction among “recipients” and “users” may be appropriate, where the former are the addressees of certain AI but not necessarily also “using” such information for certain purposes (Mack and Ryan, 2006). The reviewed literature offers a broad picture of users of AI. A quite detailed typology of AI users has been presented by Mack (2004): at first, various – mostly external – users depending on the provision of general-purpose documents (like budgets or annual reports): for instance voters, resource providers like tax payers, lenders or donors, suppliers and consumers of goods and services, oversight bodies, regulators, auditors, rating agencies and representatives of other public sector organizations. Second, there are more independent users like legislators or other kinds of politicians and managers who do not depend on general financial reports but are able to request specific information for their particular needs. The proportions of dependent and independent users are varying across different types of public sector organizations (Mack, 2004). However, the majority of users covered in the reviewed articles are either politicians or managers; other types of users have been largely ignored.

Opposite to the users are the preparers, i.e. the accountants who produce all kinds of AI such as annual reports. Although there is a general opinion that – at least in the past – preparers decide about the content and the understandability of AI (“accounting is what accountants do,” Young, 2006), there is not much research on the role and attitudes of preparers of AI (see Kober *et al.*, 2010 who conducted their survey on perceived usability of AI not only among users but also among preparers of AI; see also Christensen *et al.*, 2018 who analyze the role of public sector accounting practitioners as preparers and users of AI). Opinions of several user groups – as presented in the reviewed papers – point to a disregard of the needs and the literacy of users with respect to general purpose financial reports (GPFR). Compliance with professional accounting standards is much emphasized, at the expense of perceived information value and understandability of such reports (Cohen and Karatzimas, 2015). Finally, intermediaries may play a role between users and preparers. Such “information brokers” can help users to “digest” complicated AI or to focus on the use of AI on relevant parts. However, there also may be manipulation risks related to such supporters (Jorge *et al.*, 2016).

### 2.3 Forms and sources of AI as subject of data use

Generally, AI can focus at past, present or future periods. AI can, for instance, be presented in a budget or similar planning documents. AI about past incidents or activities will usually be presented in annual financial reports or intermediate reports. The empirical results about preferences concerning budgets or financial reports differ, obviously because of varying underlying purposes and motivations of the diverging user groups. Several articles indicate a clear interest of politicians in budgets while creditors or oversight bodies often prefer financial reports (ACCA, 2015). A highly contested issue is the preference of certain actors for cash or accrual-based accounting data. While several articles confirm a higher usability of accrual data (mainly for internal management decisions; Andriani *et al.*, 2010; Kober *et al.*, 2010; Paulson, 2006), other authors identify a higher usability of cash data (Brusca and Montesinos, 2013; ACCA, 2015; Caruana and Farrugia, 2018).

### 2.4 Usability and use of AI

Depending on their interests and underlying information needs, different user groups perceive the usability of certain kinds of AI differently. As will be discussed more explicitly in Section 5, usability and actual use of AI should be separated. Correspondingly, some of the reviewed articles focus primarily on perceived usability, others on actual use (and a few of them on both issues). In some cases, authors do not differentiate clearly between the two aspects. Some authors assess the usability of AI as perceived by certain user groups and find that managers, as well as politicians, are quite positive about the usability of AI (ter Bogt *et al.*, 2015; Kober *et al.*, 2010; Liguori *et al.*, 2012). In contrast, the actual use of AI by different user groups is mostly assessed as low or moderate (Buylen and Christiaens, 2016; Ezzamel *et al.*, 2005; Yamamoto, 2008).

### 2.5 Antecedents of users and their needs and usability and use

Several of the reviewed articles identify a number of antecedents having an impact on user attitudes and on the level of perceived usability and actual use. Some evidence is presented about influential factors on users. At first, information needs and interest in AI matter, for instance, availability of AI for various decisions. Second, accounting literacy and familiarity with AI are influential (ACCA, 2015; Andriani *et al.*, 2010; Ezzamel *et al.*, 2005). From a more general view, different social norms and institutional logics are influencing the attitudes of users (e.g. Pettersen and Solstad, 2014; Vakkuri, 2010). More detailed empirical data are available with regard to politicians as potential AI users: here, a politician's role in legislation (member of majority or opposition party, member of budget committee or "outsider"), political ideology and political competition is seen as antecedents (Buylen and Christiaens, 2016; Giacomini *et al.*, 2016).

The level of perceived usability of AI is depending on several supply factors, e.g. the quality of the provided information (e.g. timeliness and understandability). Basically, a certain AI has to meet the actual information needs of the user. With regard to the actual use of AI, some antecedents have been mentioned, e.g. information overload as perceived by parliamentarians (Caruana and Farrugia, 2018), size and financial position of a public sector organization (Buylen and Christiaens, 2016) or the role of intermediaries (Jorge *et al.*, 2016).

### 2.6 Methods applied by the researchers

Half of the reviewed papers are based on survey data. Some of them additionally – and others only – used interviews, mostly in a case study context. Observational studies (e.g. of budget debates in councils) are rather exceptional (Buylen and Christiaens, 2016; ter Bogt *et al.*, 2015). A few researchers used document analysis, e.g. of media, to collect the necessary data (e.g. Guarini, 2016; Pernsteiner *et al.*, 2016). The applied methods may have an impact

on the findings of the respective research: it is for instance quite plausible that respondents in a survey or interview give more positive answers on the intensity of AI use, compared with the observation of political debates or other methods used (see further Section 4).

### *2.7 Theoretical concepts used*

Theoretical arguments, in general, did not play an important role in the reviewed articles. Most authors used primarily a descriptive approach. The most preferred concept seems to be institutionalism in its different variants, e.g. by explaining the intensity of AI use with existing traditions and cultural patterns or with variants of isomorphism (Buylen and Christiaens, 2016). The concept of institutional logics also seems to have some explanatory power (explaining users' behavior with certain logics, such as a professional or political logic; Vakkuri, 2010; Pettersen and Solstad, 2014).

## **3. Diverging types of accounting information users**

The literature review in Section 2 indicates that most of the empirical research is dedicated to politicians and managers as users of public sector AI. This section aims to deepen our insight into how the user perspective is laid down in accounting standards, which types of user groups can be distinguished and how diverging needs of user groups can be linked to accounting issues. We will largely disregard the perspective of preparers of AI, and we will also ignore another issue as addressed in the literature review, i.e. purposes of financial information.

### *3.1 The user perspective in public sector accounting*

Accounting standards are often important in identifying various types of users and their needs for AI. The development of accounting standards for the public sector relies on a long tradition (Jones, 1992). These standards often originate from private sector accounting standards (see, for instance, Ellwood and Newberry, 2016). Young (2006) shows that private standard-setting bodies were not interested in the actual needs for AI of various groups of users. They rather emphasized what AI potential users ought to need for rational-economic decision making. This approach emphasized uniformity of user needs and ignored possible differences in these needs among diverging user groups, such as investors and creditors, who became the main focus, at the expense of other user groups like managers and employees. This normative view on user needs – what users ought to need – also underplayed that users might want certain kinds of AI for other than rational purposes, for example, for justifying their vested interests.

Public sector user groups of AI are partly different from those in the private sector. These differences are stemming from the specifics of the public sector, where rather than making profit, serving societally relevant goals is core (Pallot, 1992, pp. 39-40; Barton, 1999; IPSASB, 2006, p. 9). From a normative perspective, “the public,” i.e. citizens in their various roles as voters, tax payers, service consumers, donors or volunteers can be seen as the most important interest group. Whether this also implies that citizens have to be regarded as the primary group of accounting users, is, however, highly questionable (see also Jones, 1992, p. 261). Despite recent efforts to promote “popular reporting” (Cohen and Karatzimas, 2015), citizens are usually in a quite remote position to their municipality, province, state or central government and only a minority of them will sometimes be confronted with AI through mass and social media (newspapers, radio, television, twitter). Moreover, citizens are represented by elected politicians in the legislative, who due to their involvement in the decision making or accountability about policy programs and projects have to be seen as a main group of AI users. Other user groups are either government specific, such as oversight bodies,

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inspectories or auditors, or overlap with user groups of private sector accounting, such as managers, employees, suppliers, creditors and investors (see also Section 2.2).

Apart from the general types of users already mentioned, specific user groups may enter the arena, depending on the governmental level. In a central government setting supra-national institutions can be important, such as the EU Commission for European countries and the IMF for countries receiving budget support. Additional users of central government AI are various nation-wide interest groups and their representatives (e.g. the labor unions and the business sector), as well as the consultancy industry. In contrast, user groups at the local governmental level may be less dispersed. Here service recipients and local interest groups are holding a prominent position in using AI. Moreover, the type of AI is partly specific to the governmental level. For example, at both levels, a balanced financial statement or cost levels of various programs can be relevant, whereas at the central governmental level macro-economic and fiscal issues, such as the level of public debt, the inflation rate and redistributive impacts of social benefits and health care programs have an additional role to play.

It has to be emphasized that oversight bodies can have a strong position as a user group of AI of a public sector organization, when they are legally enabled to enforce regulations and provide financial support to this organization. Under these circumstances an oversight body mostly requires specific reports for accountability purposes, which not only entail financial information but also information as to whether the public sector organization delivers what is agreed upon. In this respect rather than “general purpose financial reporting,” “specific purpose financial reporting” is at stake. These “strong” oversight bodies can, for example, be found in the case of a funding relationship between the European Union and EU member states, or between central government ministries and local governments.

There is another issue that makes the public sector fundamentally different from the private sector. That is the crucial role of budgets (see, e.g., IPSASB, 2006, p. 10). Because governments are legally allowed to raise taxes without a direct relationship with the services or tasks for which they can be a source of income, the allocation of resources to the various policies, tasks and services is a matter of political priority setting. The budget is an expression of these political priorities, and hence, budgeting and ensuring that budgets and related plans are executed according to laws and political priorities is core in the public sector. Contrasted to that, making a minimum level of profit, irrespective of how this profit is accomplished, is the bottom line in the private sector, and budgeting in this sector is primarily an internal matter, i.e. between different managerial layers in the company. The implication of the importance of budgets in the public sector for the user perspective is that budgetary issues, such as a balanced budget and the planned full costs of programs, are an important part of user needs (see, e.g., Liguori *et al.*, 2012; Buylen and Christiaens, 2016).

Jones (1992) reviewed several activities of public sector standard setters in the Anglophone world to develop conceptual accounting frameworks for the public sector. One of the first publications indicated the following user groups (Anthony, 1980): governing bodies, investors and creditors, resource providers, oversight bodies and constituents, while user needs pointed to: financial viability, fiscal compliance, management performance and costs of services. Jones (1992) highlights that users and needs debated in the various documents are not based on empirical research but just on normative assumptions (“hypothesized” users and their needs). The common wisdom about users of public sector accounting documents is articulated by Tagesson (2014, p. 7) as follows: “To produce financial reports tailored to each individual stakeholder would not be economically viable or even possible. Legislators and standard-setters have the task of ensuring a minimum level and balance various stakeholders’ interests. Thus financial reporting must meet the general and common information needs of potential external users who cannot demand reports tailored to meet their specific information needs.”

3.2 *The link between diverging user interests and accounting issues*

Whilst private sector financial reports have to serve predominantly the needs of the economic user, public sector financial reports need to ensure at least a minimum level of information that is relevant, or ought to be relevant to all users. Hence, there does not seem to be much room for differentiation in financial reports according to the diverging needs of the various user groups. Acknowledging that financial reports have to adhere to a common format for providing comprehensive information does, however, not exclude that different user groups will be interested in diverging accounting issues and each of these issues has to be presented in an understandable, that is, user-friendly manner. Table I is an attempt to illustrate that various user groups are using the available accounting documents in a distinctive and diverging way, because they most probably will have diverging needs and interests.

Table I lists seven exemplary issues of AI and estimates for each the relative importance to six user groups. The issues do not only relate to financial reports but also to budgeting documents. The table, for example, shows that the primary interest of politicians goes to the prioritization of policy fields and the achievement of a balanced budget, while employees are primarily interested in job security and labor conditions of the organization, and creditors' and investors' interest goes to issues of liquidity and solvency. But, these primary interests do not exclude that other accounting issues are also of some or minor interest to each of the user groups, as the table illustrates. Some issues will be unimportant to user groups, such as prioritization of policy fields and job security to creditors and investors as well as oversight bodies, and liquidity to citizens and the press. The indications for the relative importance of each accounting issue to the various user groups are based on the (hopefully) common sense of the authors. Empirical research needs to underpin these indications for the relative importance of accounting issues, as will be further elaborated in the final section.

Other issues or more detailed issues as presented in Table I are thinkable. Other issues are, for instance, future cash flow risks of long-term investments which can be relevant for user groups like politicians, oversight bodies and investors. In order to trigger the interest of various user groups in accounting issues that might be potentially relevant to them, an attractive presentation is important. Several measures can be considered in this respect. First, a solid justification of the relevance of AI for decision making or accountability, i.e. by answering questions such as: what could be done to avoid a budget deficit or a too low solvency? Second, by introducing indicator values to measure the actual situation and development of an issue (e.g. balanced budget, liquidity and solvency). Third, whenever available, showing benchmark figures of these indicators, which can emphasize the extent to which indicator values of the organization in question are referring to a "regular" practice, or must be seen as outliers. Outliers in a negative direction (related to underlying goals) can be an incentive for taking corrective actions.

**Table I.**  
The diverging importance of addressed issues in either budgets or financial reports to various user groups of accounting information

Issues to be addressed in budgets or financial reports	User groups					
	Politicians	Managers	Employees	Creditors and investors	Oversight bodies and inspectorates	Citizens and media
Prioritization of policy fields	+++	+++	+	0	0	+++
Cost of services	+++	++	+	0	0	+++
Achieving a balanced budget	+++	+	+	0	+++	++
Job security and labor relations	++	++	+++	0	0	++
Liquidity	++	+	0	+++	+	0
Solvency	++	+	+	+++	+++	++
Long term financial capacity	++	++	++	0	0	++

**Notes:** 0, Irrelevant; +, minor relevance; ++, somewhat relevant; +++, relevant

### 3.3 Users grouped according to their accounting expertise

Because this paper further mainly focuses on how to engage users of AI with relatively little accounting expertise in the public sector, it is appropriate to make a distinction between three groups according to their extent of accounting expertise:

- First, laymen users without any professional accounting expertise, but with eventually some knowledge through learning by doing: most of the politicians belong to this group, as are substantial numbers of public sector managers and citizens, as well as employees.
- Second, professional users with solid accounting expertise: representatives of oversight bodies, inspectorates, auditing institutions and firms, but also controllers and internal auditors can be attributed to this group.
- Third, a hybrid group in-between the above groups: members of the executive or managers with some accounting expertise are belonging to this group, and probably also some media representatives as intermediaries between the public sector organization and the citizens.

Creditors and investors, often seen as the main users of private sector financial reports, are likely to belong to either the second or the third group.

Members of the second group are capable of expressing their user needs due to their accounting expertise. Moreover, their use of accounting documents is often obligatory. Therefore, this group, although important, is not of primary interest in discussing the themes as introduced in Section 1, where we highlighted the importance of users being capable of digesting AI. Hence, our focus lies on the first and third group, and especially the first group is, due to its lack of accounting expertise, crucial and may also be problematic in assessing its accounting needs.

## 4. Diverging approaches to the exploration of user needs

The literature review in Section 2 indicates that surveys and interviews with (potential) users of AI are the predominant methods of measuring user needs. The current section describes and assesses the pros and cons of five approaches for engaging users in the design of accounting documents. The first two are more or less traditional and widely applied, while the other three are relatively new and could be promising for future research. The first two subsections are not only about methods of data collection, especially surveys, interviews and observations, but also about how user needs can be measured in each of these methods. Here the user of AI is addressed in a passive way, that is, his/her needs are just registered. In the three subsequent subsections, i.e. about consultation procedures, co-creation by producers/users and learning devices, specific examples are presented for engaging users in the design of accounting documents. Here the user plays a more active role as a co-producer of AI.

### 4.1 Surveys and interviews

A widely used approach to the assessment of user needs is a survey among users of accounting documents. Respondents are then asked to show their extent of appreciation, often on a Likert scale, for certain accounting items. The study by Liguori *et al.* (2012) about the use of financial and non-financial indicators (such as current expenditure by nature, capital expenditure by nature, cost of activities, liabilities) by politicians and managers in larger Italian municipalities is a good example. There are also surveys with a focus on performance information, for instance, on indicators of efficiency, effectiveness and quality (ter Bogt, 2004).

Another partly similar way to measure user needs is interviewing (potential) users of AI. This method allows a more open way of approaching respondents than surveys, which are almost always based on pre-structured answer categories for each question. Ezzamel *et al.* (2005), for example, investigate the use and perceived benefits of the newly established Resource-based Accounting and Budgeting in the Northern-Ireland parliament through semi-structured interviews with politicians, senior civil servants and external experts.

A main disadvantage of the survey method is that it implicitly assumes some knowledge about accounting items on the side of respondents. Assumed accounting knowledge is more disputable for purely financial information items, especially when they originate from accrual accounting, than for non-financial information. Do laymen users, for example, know what full accrual costs are, or what the differences are between capital expenditures and depreciation? Another drawback may be the inclination of respondents to giving socially desirable responses, which can lead to an upward bias in their responses. The reviewed literature in Section 2 suggests that, in general, a lower extent of usability and use of AI is observed in studies based on interviews than when surveys were conducted.

#### *4.2 Consultation procedures*

Consultation procedures, which are used in the design of new accounting standards, and thus in the way AI is structured and presented, are also widely applied. The aim is to involve different types of stakeholders in order to achieve broad support for these renewed standards. Consultation can be organized by giving the opportunity to stakeholders to give a reaction on proposals for accounting standards. Another option is arranging committees comprising diverging stakeholders which discuss alternatives for the new standards and ultimately come to a shared advice to the body in charge of deciding about these standards. The IPSAS-Board, for instance, issues regularly proposals (exposure drafts) for new or updated accounting standards and asks for comments and feedback (e.g. the exposure draft 63 on social benefits issued in October 2017; [www.ipsasb.org/projects/social-benefits](http://www.ipsasb.org/projects/social-benefits)). Various stakeholders, especially representatives of countries taking part in the application of IPSAS, but also public sector accounting researchers[3], have the opportunity for giving reactions on the proposal in question, which potentially can lead to revisions of this proposal. In the following, an example of a consultation procedure for the renewal of accounting standards for Dutch local government is presented, which illustrates how the user perspective can be positioned in a consultation procedure.

The accounting standards for Dutch lower levels of government, i.e. municipalities and provinces, have been renewed in 2015–2016 (MBZK, 2015), and were subsequently introduced in 2017. Two types of renewals stand out. First, although municipalities and provinces have a large extent of freedom to structure their budget into programs, they additionally have to present a budget according to a pre-defined set of policy fields with prescribed performance indicators. The latter obligation is inspired by the desire to stimulate members of the legislative to compare the performance of their own policy fields with that of colleague-governments (benchmarking), and in doing so, stimulate an active use of the budget by these councilors. Second, a mandatory set of ratios, among others about solvency and a balanced budget have to be presented each year by lower level governments. These renewals of the accounting standards were based on proposals prepared by an advisory committee, in which various parties were represented, especially the Association of Dutch Municipalities, the Ministry of the Interior and Kingdom Relations, as well as representatives from some municipalities and provinces. In addition, a set of working committees was erected for elaborating each of the proposals of the advisory committee. This procedure shows that adaptations of accounting standards are the result of a consultation procedure in which various stakeholder interests, including those of users

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of AI, were taken into consideration. The councilors as ultimate users of budgets and financial reports in municipalities and provinces were, however, not directly involved, for example, through user surveys.

#### 4.3 *Observational studies*

Contrasted to surveys and interviews, observational studies are aiming at measuring the actual behavior of actors. Buylen and Christiaens (2016), for example, investigated how councilors are using AI in their speeches at the annual budgetary debates in Flemish municipalities. However, such observational studies are scarce. Van Helden (2016) compared the results of the before mentioned survey study of Liguori (*et al.*, 2012) and the outcomes of Buylen and Christiaens' (2016) observational study, and found that the latter study pointed to a significantly lower use than the former.

#### 4.4 *Co-creation by producers and users*

Another not widely applied option for engaging users in the design of accounting documents is the co-creation by consultants or researchers and users of renewed accounting standards or documents. This will be illustrated by a case study about a renewal of budgetary information in the province of Groningen, the Netherlands, where two consultant-researchers were involved (ter Bogt and van Helden, 2011; ter Bogt *et al.*, 2015). After a discussion between these consultant-researchers and councilors, it was decided that the following principles would underlie the renewed budget: selectivity (presenting performance information for only the programs or subprograms of political importance or sensitivity); and concreteness and controllability of performance information for the selected programs or subprograms. The consultant-researchers elaborated these principles in collaboration with staff members for the 2009 program budget, and the councilors were informed about the results of this co-creation. The councilors ultimately showed their appreciation of the renewed budgetary information in a survey, although their actual use of the renewed budget remained limited during the annual budgetary debates.

This example shows how users (councilors) and producers (staff members) of budgetary information were involved in the re-design of a program budget, supported by external consultant-researchers. It has to be acknowledged that the redesigning activities are subtle collaboration processes in which consultant-researchers may face the risk of being too dominant.

#### 4.5 *Learning approach*

Another option is a learning approach where users are at first exposed to accounting documents to test their understandability. Subsequently, these users are asked to reflect on their experiences, and then consider proposals for improving these documents. This approach copes with the drawback of other approaches that implicitly assume some extent of existing knowledge about AI on the side of its potential users. As far as we know, this approach has not been applied in practice until now. An example on performance budgeting serves as an illustration.

Many organizations at various governmental layers have introduced some form of performance budgeting over the last two decades (see OECD, 2007 for an overview at the central government level). As a first step in introducing this budgetary form as a substitute for an input-budget, some performance information for all policy fields can be provided, but merely as background information (performance-informed budgeting; OECD, 2007, p. 21; Mauro *et al.*, 2017). Budgetary decisions remain to be predominantly taking place on an input-base, but the background information on performances may play a role, which may give rise to certain questions: why has the performance gone down, while the budget

remained the same, or why is a budget increase proposed while performance remains the same? If members of the legislative get used to this type of performance information as a learning experience, a second step can be proposed, i.e., by asking these politicians if they would like to use performance information in a more direct way for making budgetary decisions for certain types of services, e.g. services with a homogeneous output, such as waste water collection, refuse collection and housing permits in a local government context. For these selected services the budget amount is equal to the number of units multiplied by the cost per unit (direct performance budgeting; OECD, 2007, p. 21). Such an output budget can also be used for efficiency trajectories, e.g. by comparing the cost per unit with the best in class cost per unit and by defining a time span in which the gap between the two has to be bridged.

### 5. Antecedents of user needs, usability and use of accounting information

This section attempts to unfold the relationship between user needs and usability as well as the relationship between usability and the use of AI. It aims to stimulate research on the conditions or contexts that are contributive to the use of AI.

#### 5.1 Simple links between user needs, usability and use

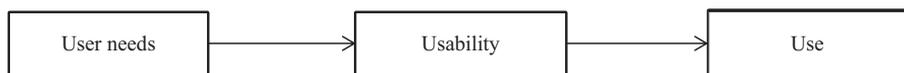
Figure 1 depicts the basic links of the chain between user needs, usability and use of accounting documents in the public sector. A user need can be defined as a desirable characteristic of information included in an accounting document, as expressed by the potential users of this document. Usability means that the users of the information in an accounting document potentially appreciate it for supporting their decision making or accountability. Use is defined as the actual consultation, which can include the reading and analysis, of the information in an accounting document by its users for supporting their decision making or accountability. Figure 1 indicates that, when user needs are fulfilled, this leads to usability, and when usability is in place, this leads to use. However, this is an all too simple picture, as will be clarified below.

The literature review in Section 2.5 shows a variety of antecedents for usability and the use of AI. Antecedents can play a role at the individual level of decision making, for instance, when financial expertise or experience of actors is expected to have a positive impact on AI use (Buylen and Christiaens, 2016). Certain antecedents can be assumed to be influential at the organizational level, for instance: the higher the tax rate, the larger the interest in AI (Buylen and Christiaens, 2016), or: in certain types of departments the use of AI is more intensive than in others (Mack and Ryan, 2006). Other factors may have an impact at the societal level, such as social norms (Vakkuri, 2010). None of the reviewed papers explicitly makes a distinction between diverging influences of antecedents for usability and the use of AI, whereas we claim that the type of influences is largely different. We will illustrate this claim by an elaborated proposal that can serve as an inspiration for future research.

#### 5.2 Diverging impacts on usability and use

The usability of AI can be subdivided into relevance and understandability. Understandability is a multidimensional phenomenon, including the format of the

**Figure 1.**  
A preliminary picture of the links between user needs, usability and use of accounting information



information as laid down in an accounting document (for instance, its structure in items, and the way in which accounting terms are explained), as well as the channels through which it is made available (e.g. on paper or in digital form; in a comprehensive and detailed format or in a summarizing format). Relevance in principle means that the type of information provided in an accounting document is aligned to what users need for their decision making or accountability. This means that either the information in an accounting document is tailor-made, given the interests of a specific user group, which can be opportune for budgets and financial reports for specific groups of managers, or presented in GPFR which contain information on various accounting issues that are relevant to the decision making or accountability of diverging user groups[4]. Table I is an illustration of the latter meaning of relevance.

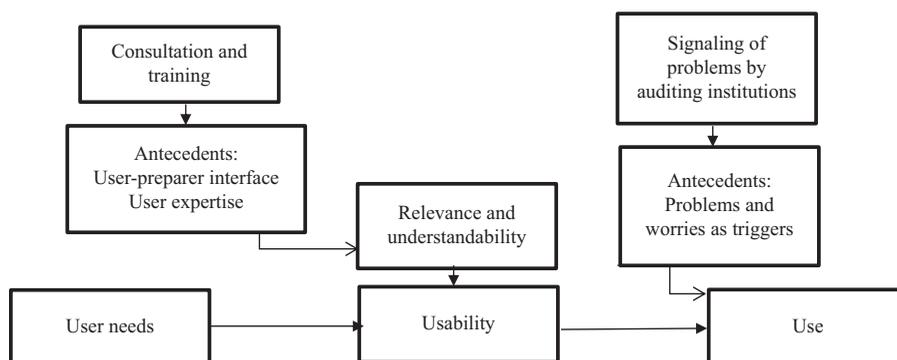
The factors explaining usability are the relevant antecedents. Several antecedents are thinkable, both at the individual decision-making level and at the organizational level. Here we confine ourselves to two factors. One is the extent to which preparers and users of AI interact about the needs for AI of these users; this can be labeled as the user-preparer interface (see, for instance, Ouda, 2017). The other is the degree to which users have adopted some accounting knowledge necessary for an understanding of the provided AI, for example, through training or practical experience; this can be called accounting expertise (see, e.g., Buylen and Christiaens, 2016).

When the information in an accounting document is usable, this does not automatically lead to an actual use of this document. An incentive for using AI is necessary, which can originate from problems to be solved or certain worries about the actual operation of a set of activities (Pollitt, 2006; Demaj and Summermatter, 2012; van Helden, 2016). Then the use of AI can potentially be supportive to the solution or at least the dissolution of these problems or the partly removal of these worries. The use of AI is expected to lead to certain actions, e.g. a revision of the underlying policies, or a better, i.e. more efficient operation.

Figure 2 summarizes the above reasoning about the links between user needs, usability and the use of accounting documents in the public sector, including some important antecedents.

## 6. Tensions and dilemmas

Individual governmental organizations are often part of larger governmental systems in which accounting standards, which contain guidelines on various accounting terms, are established at a higher level than that of the individual governmental organization. Accounting standards for local government are mostly developed at the national (or state) level, and as far as these standards do not give much room for an organization-specific elaboration, the emergence of user needs has to be arranged at this higher level. In a similar



**Figure 2.** An elaborated picture of the links between user needs, usability and use of accounting information, including important antecedents

vein, accounting standards established by IPSAS can be applied in individual countries at different levels of the governmental system. The tensions arising from this observation are twofold. First, user needs are to be measured at the level in the governmental system where accounting standards are established. Second, the more mandatory these standards, the less discretion at the lower levels of the system where they have to be applied. In some countries budgetary standards are less restrictive, that is, give more discretion to their users than financial reporting standards (see the illustration of the local government accounting standards in the Netherlands in Section 4.2). However, this does not exclude that in other countries budget regulations are very strict, especially when central government wishes to constrain opportunities for fiscal policy-making at the local government level.

User needs are not the only determinant of accounting standards. Opinions and preferences of the accounting profession also count, e.g. in Anglo-Saxon countries where the democratic legislator mandates accounting bodies for setting up accounting standards. A possible tension is then thinkable, which leads to a dilemma. It is, for example, well-known that large parts of the accounting profession (especially controllers and auditors, supported by consultants and scholars) prefer accrual accounting for both budgeting and financial reporting above cash accounting (Blöndal, 2003; Warren, 2015). However, laymen users often prefer the cash above the accrual system – particularly with regard to budgeting – because the former system requires relatively less accounting expertise (Diamond, 2002; van Helden and Reichard, 2018). An interesting dilemma then emerges: Should we rely on certain accounting standards, supported by the accounting profession, at the expense of user preferences? Or, should we give priority to user preferences, even if the accounting profession believes that “better” accounting standards are available?

Ouda (2017) claims that this dilemma can be eliminated when there is a cognitive fit (matching) between the information provided by the producer and the information required by the user for several stages in the decision-making process. Although it is valuable to get an in-depth understanding of both sides of the market for AI (i.e. demanders and suppliers), this approach might underplay the more fundamental differences in interests between the two.

There may be tensions between the accuracy and unavoidable complexity of financial reports according to the relevant accounting standards on the one side and the understandability, clearness and “digestibility” of such financial information on the other side. While professional accountants as users expect clear and distinct figures and are able to comprehend and interpret them, laymen-users face the risk of getting lost in such situations and depend on further explanation and illustration, eventually at the expense of concision and lucidity.

There is also a tension between demarcating public sector accounting as distinctive from private sector accounting, on the one hand, and the guideline that public sector accounting standards should follow comparable standards in the private sector, on the other hand. If, for example, user groups (i.e., service users and resource providers), as well as objectives (i.e. decision making and accountability), are seen as public sector-specific, this also has consequences for the accounting standards (see further Ellwood and Newberry, 2016).

## **7. Conclusions and directions for future research**

Our review of the recent research on users and uses of public sector AI shows, on the one hand, an increasing stream of empirical studies. This is good news because this theme was under-researched for a long time. However, on the other hand, the review does not reveal a coherent body of knowledge about the perception of usability and the intensity of use of public sector AI, including underlying antecedents. So, there is an enduring need for empirical research in this domain.

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Based on our literature review, we have tried to draw a more diverse and nuanced picture of the different variables in the complex context of the “user needs-usability-use intensity” framework. We emphasized that there are quite different user groups in the public sector with varying needs and interests. We also discussed opportunities to support users in engaging more in the design of financial documents according to their specific interests and needs. Furthermore, we found that there is a strong need to connect the different variables which were so far mostly studied separately: user groups – user needs – usability of AI – intensity of information use. And we pointed to several tensions that exist, for instance, with regard to diverging preferences of users for certain accounting modes (cash vs accruals) or to conflicts between the professional correctness of a financial document and its understandability. In general, we observe a slow but steady shift of the overall reporting perspective: from a pure “accountants view” toward a more balanced mix of professional and needs-driven perception of financial information.

Our thematic analysis of user needs, usability and use of public AI gives rise to some more specific suggestions for future research:

- (1) There is a need for empirical studies about the antecedents of the usability and the use of AI by politicians and managers at various contextual levels, i.e. the individual decision maker, the organization and the country or society at large. It would be important to distinguish between antecedents at the usability and at the use stage, because at the latter stage incentives originating from problems or worries are possibly influential, while at the former stage factors contributive to relevance and understandability of AI play a role.
- (2) Some user groups are particularly under-researched. This holds for citizens as potential users of so-called popular reports of their municipality (Cohen and Karatzimas, 2015). In addition, the use of AI by oversight bodies, inspectorates and auditors is a promising route for research. These users are professionals in scrutinizing AI, and it may be interesting to investigate the impact of supervisory interventions on policy making and actions of the supervised organizations. Another issue: although the use of AI by capital providers and creditors is well-researched in the private sector context (e.g. Cascino *et al.*, 2014), this is not the case in public sector organizations, which also points to a new research route. The same applies to potential users such as private or nonprofit suppliers of goods and services to the public.
- (3) Those actors which directly or indirectly influence the supply and the use of AI, like preparers of financial reports or information brokers supporting, e.g. politicians, would be another relevant field of study.
- (4) There is not much information available on how to improve the literacy of users, i.e. their ability to read and understand various formats of AI, e.g. via training or coaching support.
- (5) The link between diverging user groups and their specific needs for AI is one of the most promising research routes. In this context, research also should shed some light on the interrelations between user needs and purposes of financial information use (e.g. special information needs with regard to rendering accountability).
- (6) There is poor evidence about the specifics of different formats and documents providing AI: while there is some evidence about the usability and use of for instance general purpose financial statements or budgets, we do not know much about the usability features of, e.g., mid-year reports, whole-of-government reports or various other specific formats of the provision of AI (including for instance the role of informal talks of users with experts or of variants of narratives).

- (7) From a methodological point, so far mostly surveys and interviews have been used to study user needs and use intensities. Surveys based on items ordered along a Likert-scale were particularly often used. Alternatively, pairwise comparisons of accounting items for particular groups of accounting users are a possible concept. Based on such item-by-item comparisons, a ranking of all items could be made. Other interesting methods are observational studies or experiments. Observational studies in particular could investigate to what types of actions budgets or financial reports may lead, including finding support for either abolishing or initiating alternatives for the proposed policy making. In addition, methods relying on co-creation of adapted budgetary or financial reporting information as well as applications of a learning approach appear promising.
- (8) We see a need that future researchers reflect more explicitly about theoretical arguments explaining the use (or non-use) of financial information in various situations and under different antecedents and conditions. We still have to better understand the theoretical interrelations between the elements of the “user needs-usability-use”-model and their various contingencies.

We are looking forward to conceptual and empirical studies about users and their needs of public sector AI and we hope that our contributions in this paper serve as an inspiration for challenging future research.

#### Notes

1. The terms “usefulness” and “usability” are often used in a synonymous way. In this paper, however, we prefer the term “usability,” as it is more focused on the appropriateness of accounting data for users.
2. We also took notice of papers presented by I. Brusca *et al.* and by E. Haustein *et al.* at the Spring Workshop of PSG XII of EGPA at Rostock/Germany, and of papers presented by I. Saliterer *et al.* and by L.-M. Sinervo and P. Haapala at the Annual EGPA-Conference 2018 in Lausanne (PSG XII).
3. For example, a task force of accounting researchers affiliated with several academic networks like CIGAR, EGPA and IRSPM has been involved in such consultation procedures with the IPSASB; [www.cigar-network.net/index.php/news/news-latest/125-the-contribution-of-international-research-networks-on-public-sector-accounting-towards-improving-public-sector-financial-management-and-reporting](http://www.cigar-network.net/index.php/news/news-latest/125-the-contribution-of-international-research-networks-on-public-sector-accounting-towards-improving-public-sector-financial-management-and-reporting)
4. IPSASB (2012, p. 11) lists a broader set of criteria to which financial reports must adhere: relevance, faithful representation, understandability, timeliness, comparability and verifiability. From a user perspective, relevance and understandability seem to be the most important because these criteria, respectively, focus on helpfulness for decision making and accessibility of the provided information.

#### References

References marked with \* belong to the literature review in Section 2 of the paper.

- ACCA (2015), “Consolidated government accounts: how are they used?”, Association of Chartered Certified Accountants, London (\*).
- Andriani, Y., Kober, R. and Ng, J. (2010), “Decision usefulness of cash and accrual information: public sector managers’ perceptions”, *Australian Accounting Review*, Vol. 20 No. 2, pp. 144-153, (\*).
- Anthony, R. (1980), “Developments in state and municipal accounting”, *Government Accountants Journal*, Winter, pp. 12-17.
- Barton, A. (1999), “Public and private sector accounting – the non-identical twins”, *Australian Accounting Review*, Vol. 9 No. 2, pp. 22-31.

- 
- Blöndal, J.R. (2003), "Accrual accounting and budgeting: key issues and recent developments", *OECD Journal on Budgeting*, Vol. 3 No. 1, pp. 43-59.
- Brusca, I. and Montesinos, V. (2013), "From rhetoric to practice: the case of Spanish local government reforms", *Financial Accountability and Management*, Vol. 29 No. 4, pp. 267-287, (\*).
- Buylen, B. and Christiaens, J. (2016), "Talking numbers? Analysing the presence of financial information in councilors' speech during the budget debate in Flemish municipal councils", *International Public Management Journal*, Vol. 19 No. 4, pp. 453-475, (\*).
- Caruana, J. and Farrugia, B. (2018), "The use and non-use of the government financial report by Maltese members of parliament", *Accounting, Auditing and Accountability Journal*, Vol. 31 No. 4, pp. 1124-1144, (\*).
- Cascino, S., Clatworthy, M., Garcia Osma, B., Gassen, J., Imam, S. and Jeanjean, T. (2014), "Who uses financial reports and for what purpose? Evidence from capital providers", *Accounting in Europe*, Vol. 1 No. 2, pp. 185-209.
- Christensen, M., Greiling, D. and Christiaens, J. (2018), "Governmental accounting practitioners: cardigan removed, research agenda revealed", *Accounting, Auditing and Accountability Journal*, Vol. 31 No. 4, pp. 1026-1044.
- Cohen, S. and Karatzimas, S. (2015), "Tracing the future of reporting in the public sector: introducing integrated popular reporting", *International Journal of Public Sector Management*, Vol. 28 No. 6, pp. 449-460.
- Demaj, L. and Summermatter, L. (2012), "What should we know about politicians' performance information need and use?", *International Public Management Review*, Vol. 13 No. 2, pp. 85-105.
- Diamond, J. (2002), "Performance budgeting – is accrual accounting required?", IMF Working Paper No. 02-240, Washington, DC.
- Ellwood, S. and Newberry, S. (2016), "New development: the conceptual underpinnings of international public sector accounting", *Public Money & Management*, Vol. 36 No. 3, pp. 231-234.
- Ezzamel, M., Hyndman, N., Johnsen, Å., Lapsley, I. and Pallot, J. (2005), "Conflict and rationality: accounting in the Northern-Ireland's devolved assembly", *Financial Accountability and Management*, Vol. 19 No. 1, pp. 33-55, (\*).
- Giacomini, D., Sicilia, M. and Steccolini, I. (2016), "Contextualizing politicians' uses of accounting information: accounting as reassuring and ammunition machine", *Public Money & Management*, Vol. 36 No. 7, pp. 483-490, (\*).
- Guarini, E. (2016), "The day after: newly-elected politicians and the use of accounting information", *Public Money & Management*, Vol. 36 No. 7, pp. 499-506, (\*).
- IPSASB (2006), "Public sector conceptual framework", International Public Sector Accounting Standards Board, Toronto, December.
- IPSASB (2012), "Conceptual framework for general purpose financial reporting by public sector entities: presentation in general purpose financial reports", Consultation Paper, International Public Sector Accounting Standards Board, Toronto, January.
- Jones, R. (1992), "The development of conceptual frameworks of accounting for the public sector", *Financial Accountability & Management*, Vol. 8 No. 4, pp. 249-264.
- Jones, R. and Pendlebury, M. (2000), *Public Sector Accounting*, 5th ed., Pearson, Essex.
- Jorge, S., Jorge de Jesus, M.A. and Nogueira, S. (2016), "Information brokers and the use of budgetary and financial information by politicians: the case of Portugal", *Public Money & Management*, Vol. 36 No. 7, pp. 515-520, (\*).
- Kober, R., Lee, J. and Ng, J. (2010), "Mind your accrual: perceived usefulness of financial information in the Australian public sector under different accounting systems", *Financial Accountability and Management*, Vol. 26 No. 3, pp. 267-298, (\*).
- Liguori, M., Sicilia, M. and Steccolini, I. (2012), "Some like it non-financial...", *Public Management Review*, Vol. 14 No. 7, pp. 903-922, (\*).

- Mack, J. (2004), "An investigation of the information requirements of the users of Australian public sector financial reports", PhD-thesis QUT, Brisbane, (\*).
- Mack, J. and Ryan, C. (2006), "Reflections on the theoretical underpinnings of the general purpose financial reports", *Accounting, Auditing and Accountability Journal*, Vol. 19 No. 4, pp. 592-612, (\*).
- Mauro, S.G., Cinquini, L. and Grossi, G. (2017), "Insight into performance-based budgeting in the public sector: a literature review and a research agenda", *Public Management Review*, Vol. 19 No. 7, pp. 911-931.
- MBZK (2015), "Hoofdlijnen vernieuwing Besluit Begroting en Verantwoording", Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, Den Haag.
- Moynihan, D.P. and Pandey, S.K. (2010), "The big question for performance management: why do managers use performance information?", *Journal of Public Administration Research and Theory*, Vol. 20 No. 4, pp. 849-866.
- Mutiganda, J.C. (2016), "How do politicians shape and use budgets to govern public sector organizations? A position-practice approach", *Public Money & Management*, Vol. 36 No. 7, pp. 491-498, (\*).
- OECD (2007), *Performance Budgeting in OECD Countries*, OECD Publishing, Paris.
- Ouda, H. (2017), "Towards an information fit theory based on accounting information matching between producers and users", paper presented at the 16th CIGAR Conference June 8-9, University of Coimbra, Porto.
- Pallot, J. (1992), "Elements of a theoretical framework for public sector accounting", *Accounting, Auditing and Accountability Journal*, Vol. 5 No. 1, pp. 38-59.
- Paulson, G. (2006), "Accrual accounting in the public sector: experiences from central government in Sweden", *Financial Accountability and Management*, Vol. 22 No. 1, pp. 47-62, (\*).
- Pernsteiner, A., Becker, D., Fish, M., Miller, W.F. and Drum, D. (2016), "Budget repair or budget spectacle? The passage of Wisconsin's Act 10", *Public Money & Management*, Vol. 36 No. 7, pp. 507-514, (\*).
- Petersen, I.J. and Solstad, E. (2014), "Managerialism and profession-based logic: the use of accounting information in changing hospitals", *Financial Accountability and Management*, Vol. 30 No. 4, pp. 363-382, (\*).
- Pollitt, C. (2006), "Performance information for democracy: the missing link?", *Evaluation*, Vol. 12 No. 1, pp. 38-55.
- Steccolini, I. (2019), "Public sector accounting and the post-NPM: out of the Golden (C) age? Re-considering the public side of (public sector) accounting research", *Accounting, Auditing and Accountability Journal*, Vol. 32 No. 1, pp. 255-279.
- Tagesson, T. (2014), "The conditions for and the users of public sector accounting", in Budding, T., Grossi, G. and Tagesson, T. (Eds), *Public Sector Accounting*, Chapter 1, Routledge, London, pp. 1-12.
- ter Bogt, H.J. (2004), "Politicians in search of performance information? – survey research on Dutch aldermen's use of performance information", *Financial Accountability and Management*, Vol. 20 No. 3, pp. 221-252.
- ter Bogt, H.J. and van Helden, G.J. (2011), "The role of consultant-researchers in the design and implementation process of a programme budget in a local government organization", *Management Accounting Research*, Vol. 22 No. 1, pp. 56-64.
- ter Bogt, H.J., van Helden, G.J. and van der Kolk, B. (2015), "Challenging the NPM Ideas about performance management: selectivity and differentiation in outcome-oriented performance budgeting", *Financial Accountability and Management*, Vol. 31 No. 3, pp. 287-315, (\*).
- Vakkuri, J. (2010), "Struggling with ambiguity: public managers as users of NPM-oriented management instruments", *Public Administration*, Vol. 88 No. 4, pp. 999-1024, (\*).
- van Helden, G.J. (2016), "A critical literature review and a challenging research agenda on politicians' use of accounting information", *Public Money & Management*, Vol. 36 No. 7, pp. 531-538.

- van Helden, G.J. and Reichard, C. (2018), "Cash or accruals for budgeting: why some countries changed their budgeting mode and others not", *OECD Journal on Budgeting*, Vol. 18 No. 1, pp. 89-113.
- Warren, K. (2015), "Time to look again at accrual budgeting", *OECD Journal on Budgeting*, Vol. 14 No. 3, pp. 113-129.
- Yamamoto, K. (2008), "What matters in legislators' information use for financial reporting?: the case of Japan", in Jorge, S. (Ed.), *Implementing Reforms in Public Sector Accounting*, Coimbra University Press, Coimbra, pp. 370-391, (\*).
- Young, J.J. (2006), "Making up users", *Accounting, Organizations and Society*, Vol. 31 No. 5, pp. 579-600.

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