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Integrating non-financial performance indicators in budget documents: the continuing search of Dutch municipalities

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Abstract
Purpose – Although the topic of performance budgeting has received considerable attention in the literature, it is mainly explored in the field of public management and administration, and little research exists in the field of public sector accounting. The purpose of this paper is to provide more insight into how non-financial indicators are integrated in budget documents, thereby bridging the gap between the literature in both fields. Furthermore, the influence of potential drivers of differences in the incorporation of non-financial performance indicators are explored.

Design/methodology/approach – This study starts with an overview of historical developments in Dutch local government for a period of 50 years. This is followed by an empirical assessment of the current incorporation of non-financial performance indicators based on a dataset of 107 municipal budget documents for FY2019.

Findings – The authors’ historical overview shows that several initiatives were employed to encourage municipalities to integrate non-financial performance indicators in their budget documents. A search to connect policy and means can be observed, which has not developed linearly over time, but mostly in reaction to major changes in national legislation. The authors find a large variation among the municipalities in their current incorporation of non-financial performance indicators. Contrary to theoretical expectations, output indicators (and not outcome indicators) are most frequently incorporated. Furthermore, the authors find that more indicators are incorporated if a municipality is larger, more willing to innovate and if it has less financial resources.

Originality/value – This article contributes to the understanding of how to incorporate non-financial performance indicators in public sector financial statements. To the best of authors’ knowledge, this is an area that is not explored before.

Keywords Budgets, Performance indicators, Dutch municipalities, Performance budgeting

Paper type Research paper

Introduction
Public sector organizations face many financial, societal and environmental issues. One option to facilitate them in facing these issues is by integrating non-financial performance indicators in budget documents, as a way to implement performance budgeting. Budgeting has a long history in public sector accounting. Public sector organizations already use it since the 18th century, and great efforts are made nowadays to use performance information in these practices (Budding and Grossi, 2015; Ho and de Jong, 2019). The use of such information is considered helpful in facilitating decision-making about aspects such as efficient use of resources, management of programs, central resource allocation and expenditure prioritization (OECD, 2007).

However, there are a number of challenges with respect to the development and use of performance information in the budget process (e.g. Budding and Grossi, 2015), e.g. with regard to how the use of performance information in budgetary decision-making can be strengthened, how to improve the measurement of activities and how to enhance the quality of information.
Several scholars argue that there is little research in the field of public sector accounting that addresses the integration of non-financial aspects of performance in budgets (e.g. Mauro et al., 2017; Sicilia and Steccolini, 2017). Although non-financial performance indicators are seen as relevant by both politicians and managers (Liguori et al., 2012), also doubts are raised about issues that have to do with the relevance and choice of performance information (Saliterer et al., 2019), such as the selection of easy-to-reach targets.

In The Netherlands, the use of non-financial performance indicators by municipalities has a long history. From the 1970s onward, a search can be observed in this setting concerning how to integrate such indicators in budget documents. Several initiatives have been employed to stimulate municipalities to do so. Most of the measures taken were non-mandatory, but from 2017 onward, Dutch municipalities are forced to integrate a mandatory set of non-financial performance indicators in their budgets. This long history as well as the variation in measures makes the Dutch context an interesting setting to analyze.

The purpose of this article is to document the historical search of Dutch municipalities of how to incorporate non-financial performance indicators in budget documents, as well as to investigate potential drivers of this incorporation. Whereas other studies that analyze non-financial performance indicators in budgeting mainly focus on their use, especially for internal management and external accountability purposes, this study focuses on the presence of these indicators. We consider the availability of performance indicators a crucial precondition for their use. Next to this, following Dillard and Vinnari (2019), we believe that public sector financial statements (i.e. public sector accounting) should transparently represent the actions of an organization, and therefore a proper selection of indicators in budgets and annual reports is important. This article analyzes these issues and, in doing so, aims to add to the literature on the incorporation of performance information in budgeting. Finally, as it looks at the presence of non-financial performance indicators in budgets, it contributes to the scarce literature in which a public sector accounting perspective is used.

This article is structured as follows. We first provide a short overview of the literature on performance budgeting in general, and the integration of performance indicators in budgets in particular. Next, we describe major developments concerning the integration of non-financial performance information in budget documents by Dutch municipalities. We hereby explore which factors contributed to this exercise, analyzing a period of 50 years. Then, we empirically examine the current integration of non-financial performance indicators based on a dataset of budget documents of 107 Dutch municipalities. We analyze the extent to which such indicators are incorporated in the budget, as well as the type of indicators used and whether they are in proportion to the financial importance of the corresponding municipal activities. We also explore whether differences among Dutch municipalities can be explained by analyzing the effects of their size, innovation willingness and financial resources. The article ends with a discussion and conclusion section.

**Performance budgeting**

The introduction of performance budgeting by public sector organizations is part of a widespread continuous process to improve control of expenditures and/or the efficiency and performance of the public sector (Schick, 2009). Public sector organizations may have various motives to pursue performance budgeting (Robinson and Brumby, 2005; Shah and Shen, 2007). It can help their managers to acquire better knowledge of problems with program structure and operation to specify organizational goals. It may also assist them with better informed budgetary decision-making. The rationale is that with appropriate information, politicians can exert pressure for improvements and get a better grip on the most important issues. Furthermore, performance information may play an active role in resource allocation, e.g. by providing benchmarks. How performance information is used in the budget process
varies with respect to the level of government. At the local level, performance indicators are mainly used to facilitate informed decision-making. In addition, they are also used for benchmarking purposes (e.g. Bowerman and Ball, 2000; Knutson et al., 2012).

An important catalyst for the incorporation of non-financial performance indicators were the co-called New Public Management (NPM) reforms. Until the end of the 1970s, so-called Traditional Public Administration (TPA) prevailed. Under this paradigm, the legitimacy of government expenditures was key. Therefore, budget documents were especially meant to show that budgets, the amount of money to be spent on certain programs or by certain organizational units, were not overrun, as these budgets were the politically approved sums to be spent. Due to doubts about the efficiency and effectiveness of the government, NPM emerged at the end of the 1970s. The emphasis on compliance with laws and regulations was replaced by a focus on efficiency and financial results (Wiesel and Modell, 2014). Various practices and tools were adopted from the private sector, including the incorporation of performance indicators, not only for internal steering purposes, but also for external accountability uses. In the 1980s, the first criticisms of NPM arose, mainly asking the question whether the practices and tools taken over from the private sector were applicable to the public sector context. Moreover, it became increasingly clear that the government was (only) a co-producer in solving complex issues. The main goal was to work on the effectiveness and customer or citizen satisfaction (Wiesel and Modell, 2014). It was argued that the focus in terms of governance should rather be on inter-organizational processes and outcomes. Various terms circulate for these ideas about public sector management, New Public Governance (NPG) and Public Value Management (PVM) being the most prominent. However, nowadays there is an increasing awareness that instead of replacing one paradigm with another, paradigms seem to combine, which can also be observed in daily practice (Hyndman and Liguori, 2016). This has led to increasing use of the term post-NPM for the current paradigm. Generally, post-NPM stresses multiple goals. Public sector organizations should move beyond realizing the goals citizens desire, in that they also should offer “value for money” in the taxpayers’ view. The incorporation of outcome indicators, combined with information about the means spent, can be helpful to show that public sector organizations are economically and efficiently using financial means to realize societal added value.

Multiple authors (Anessi-Pessina et al., 2016; Mauro et al., 2017; Sicilia and Steccolini, 2017) have argued that the incorporation of non-financial performance information in budgeting is under-researched. Most empirical research on performance budgeting takes a public administration perspective and is concerned with the incorporation of non-financial performance information by politicians and public managers for internal management and external accountability purposes (see, e.g. Saliterer and Korac, 2013; Saliterer et al., 2019). However, the role of non-financial performance information in the formulation and execution stages of budgeting goals still remains unclear (Mauro et al., 2017; Siciliana and Steccolini, 2017). With this, the step of the presence of performance information is often skipped (for an exception, see Bleyen et al., 2017). Furthermore, to the best of our knowledge, studies that investigate the incorporation of non-financial performance information in public sector financial statements (i.e. budgets and annual reports) are absent.

Thus, more research is required on the contribution of budgeting to external accountability, both in terms of transparency and communication and in terms of stakeholder involvement and participation (cf., Sicilia and Steccolini, 2017). This is in line with Dillard and Vinnari (2019) who argue that accounting systems (including budget documents) should transparently represent the actions of an organization. Therefore, the selection of performance indicators should cover the area of activities an organization performs. For analyzing this issue, the so-called informativeness principle may be helpful. This principle states that performance measures should not so much express shareholder value (expressed in terms of profit, dividend and share price development), but should
adequately reflect the contribution of employees to value creation (Indjejikian, 1999). The incorporation of these criteria helps to gain insight into the value drivers: the actions of employees leading to value creation. If the informativeness principle is applied to the public sector, this means that we pay particular attention to those matters that add value for society. Typically, this relates to the social results (outcomes). Public sector organizations are generally income-consuming and not income-generating organizations, meaning that the aim is not so much to generate income, but rather to spend it as well as possible (e.g. Budding and Bac, 2004; Schouten, 2001). One is, therefore, inclined to expect that the extent to which policy areas are reported on will largely correspond to the financial importance of (i.e. the use of income for) those policy areas. This is particularly true in the case of municipalities, where the municipal council approves the income and expenditures on the basis of its political preferences, and where this council is also the primary user of the budget and the annual reports.

Drivers of the integration of non-financial performance indicators

We explore the influence of three potential drivers of the incorporation of non-financial performance indicators in budget documents. First, we expect that municipal size may have an influence on the extent to which indicators are used. A larger population will increase the diversity of groups to be provided with local government services, thereby demanding greater quantities of information, which in turn may foster the use of performance information (Saliterer and Korac, 2013). Next to this, larger municipalities will be more able to invest in the development of performance indicators, as they have more resources to do so (see van Dooren (2005) for performance indicators specifically; see Chenhall (2003) for control systems in general).

We also expect that the extent to which non-financial performance indicators are incorporated in the budget documents is related to the municipalities’ innovation willingness, i.e. the capacity to introduce new processes, products or ideas in the organization (Walker et al., 2015). Lampe (2017) has found that if a municipal organization is willing to adopt process innovations, it is also most likely more willing to change existing internal relationships. Similarly, we expect that more innovative municipalities will adhere more to the new prescriptions in terms of incorporation of mandatory indicators.

Finally, we analyze the influence of the availability of financial resources of the municipality. To date, the results regarding this issue are mixed. Some studies (e.g. de Lancer Julnes and Holzer, 2001; Grizzle and Pettijohn, 2002) observed a relationship between the availability of resources and the development of performance measurement systems. On the other hand, van Dooren (2005) did not find an association between having a lack of (financial, human and information and communication technology (ICT)) resources and the degree of adoption and implementation of performance measurement systems.

The integration of non-financial performance indicators in budget documents by Dutch municipalities

In the remainder of this article, we focus on the integration of non-financial performance indicators in budget documents of Dutch municipalities. These entities are considered the most important and visible level of sub-national government (Hendriks and Tops, 2003), which in The Netherlands consists of 12 provinces and (in 2019) 355 municipalities. Almost half of all personnel (i.e. 49.4%) employed in the Dutch public sector is working at a municipality (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties, 2019). The services of Dutch local government can be divided into three domains: the operational domain (supportive and administrative activities, such as issuing driver licenses), the physical
domain (e.g. services such as maintenance of roads and garbage collection) and the social domain (most importantly income provision, job placements services and help for elderly as well as disabled people). Whereas central government has prescribed a large number of tasks that have to be performed by municipalities, it is to a large extent at the municipalities’ discretion how they perform these tasks.

Dutch municipalities have built up an extensive history when it comes to performance budgeting, in which clearly a search is visible (see also Budding et al., 2019). Moreover, at different times, a variety of objectives for introducing performance information is manifest: on the one hand, performance indicators are used with the aim of facilitating informed decision-making; on the other hand, goals of benchmarking with other municipalities are foregrounded (refer to Figure 1).

Dutch municipalities began discussing performance budgeting systems already in the early 1970s. Inspired by the US Planning Programming Budgeting System (PPBS), Dutch municipalities looked for ways to connect policy-making, goal-setting and reporting. However, a project (Beleidsanalyse Gemeenten) to actually make the connection between these aspects was not considered successful. A breakthrough was realized in the 1980s with the Policy and Management Instruments project (Beleids en Beheers Instructaris, BBI). This project can be seen as the Dutch local government manifestation of NPM (ter Bogt, 2008). It was introduced in 1987 and managed by the Dutch Ministry of the Interior and Kingdom Relations, providing tools that help to improve information to effectively support planning and control decisions in municipalities (ter Bogt, 2008; van Helden, 2000). BBI strongly advocated tools from the private sector, such as output budgeting, responsibility accounting and cost allocation (ter Bogt, 2004). Municipalities were encouraged to change from policy-based budgets (e.g. social security, education, infrastructure) to product-based budgets (e.g. primary education and maintenance of canals). The rationale was that this allowed for sets of concrete indicators. Several studies showed that great efforts were made by municipalities to implement the instruments, but that in the daily practice, the high expectations were not met (e.g. ter Bogt, 2008). Specifically, in many instances, performance indicators were only used for illustrative purposes (Aardema, 2002).

About ten years after the formal ending of the BBI project in 1995, a new initiative was employed to encourage municipalities to incorporate performance indicators in their budgets and annual reports. In 2004, the Dutch Ministry of the Interior and Kingdom Relations introduced the Decree on Budget and Accountability for Provinces and Municipalities (Besluit begroting en verantwoording provincies en gemeenten, BBV). The BBV prescribed that municipalities should publish both program budgets and product estimates. The program budget is the municipal council’s policy document stipulating political priorities, future activities, the resources involved and the outcomes to be achieved. It should contain clear

Figure 1.
Historical development of performance indicators in Dutch municipalities
information on the municipal council’s political program, which enables political decision makers to focus on the main political issues in coherent policy programs. The municipal council holds the board of mayor and aldermen accountable, as they are responsible for the execution of the program budget. Municipalities are free to determine their own programs. Three questions should be answered for each program:

1. **What do we want to achieve?** This has to be answered by defining goals and (desired) effects.

2. **What are we going to do?** Programs and activities have to be specified that aim to realize these goals and effects.

3. **How many resources are we going to use?** The amount of resources has to be specified.

As soon as the municipal council makes a final decision on the program budget, the product estimate is prepared. The product estimate is a translation of the budget into work schedules for municipal officials, which includes information on the necessary municipal output and the associated costs. The combination of budgets and estimates should facilitate the clear separation between political and managerial responsibilities within municipalities. Together, they should facilitate more effective control: the municipal council uses the program budget to control policy execution, while the mayor and aldermen use the product estimate to control the service and output provision of municipal officials.

Municipalities faced some difficulties in making a clear distinction between the program budget and the product estimate (e.g., Dekker and Budding, 2005). One evaluation (Schilder et al., 2010) showed that municipalities barely used the product estimate as intended: the product estimate was often not only offered to the board of mayor and aldermen, but also to the municipal council. Moreover, the board of mayor and aldermen hardly used the product estimate. In some municipalities, both documents were even combined, and the added value of a separate product budget could be questioned. Another finding was that the program budgets mostly contained “storytelling” information on policy issues, rather than direct links between policy and means. A survey among municipal officials (Schilder et al., 2010) showed that only one out of four respondents answered positively to the question “The indicators in our program budget play an important role in the discussion about this document in the council.” All in all, daily practice impeded a clear link between policy objectives, results and financial means. The same holds for selecting and using performance indicators: Budding and Hopstaken (2010) studied catalysts and barriers for implementation of performance indicators and observed that the main obstacles were problems related to properly defining and measuring performance indicators.

A final initiative that was undertaken with regard to the incorporation of non-financial performance indicators in budgets and annual reports was the result of an advice formulated by the so-called Commissie Depla (2014). Among others, this commission observed a need among politicians to have more insight into their own financial position and into that of other municipalities. Furthermore, it was observed that municipalities experienced problems in comparing costs with performance. A new set of rules was compiled, with three important changes:

1. Municipalities could no longer pass on overhead costs to policy components (programs and products) in their budgets and annual reports. From now on, all overhead costs had to be made visible under the Operations program.

2. Municipalities had to include a uniform overview of the costs and revenues in their budgets and annual reports. In this scheme a set of 53 mandatory products and
services had to be incorporated, which were labeled as task fields (taakvelden, see also BBV, 2003).

(3) Municipalities were required to publish uniform indicators in their budgets and annual reports, amounting to five financial indicators and 39 policy indicators related to the task fields.

Method
To gain more insight into the question of how municipalities currently deal with performance indicators, we analyzed 107 municipalities that are representative for all Dutch municipalities [1]. For each municipality, we counted the number of input, process, output and outcome indicators [2] that were incorporated in the FY2019 budget. This was done by a group of research assistants, and three meetings were held to discuss the exact operationalization of these indicators: one before this analysis was started and two during the coding process. As Article 4 of the BBV prescribes that their budget and annual reports must have an identical format, we think our findings are also indicative for the annual report. To verify this, we also analyzed a sample of 20 annual reports, which indeed showed the required similarities between both documents.

Regarding the assessed variables, we measure municipal size by taking the number of inhabitants and dividing our sample into four groups (cf. Groot and Budding, 2004). As the budget for FY2019 is composed and approved by the municipal council in Spring 2018, we took the number of inhabitants and the level of debt as per January 1, 2018 [3]. Innovation willingness is operationalized by distinguishing between municipalities that participate in the innovation program Windows for Operational Management (Vensters voor Bedrijfsvoering) and those that do not. This program aims to develop services that enable public sector organizations to gain better insight into their own performance and to compare their performance with similar organizations. It is maintained by a consortium of stakeholders from various public sector bodies, including the Association of Netherlands Municipalities. We investigated which municipalities participate or have participated in the innovation program Windows for Operational Management by looking on their website www.vensters.net and took the situation as per February 12, 2018. Third, availability of financial resources is measured by looking at the debt level per inhabitant, and we classify municipalities into two groups, one group with debt levels below the mean (“Lower debts”) and one group with debt levels above the mean (“Higher debts”).

Current practices in the incorporation of performance indicators in budget documents by Dutch municipalities
As a first step in the analysis, Table 1 shows how many municipalities comply with the legal prescription that they have to publish 37 mandatory non-financial indicators. Only 27.1% of the municipalities use exactly the amount of required mandatory indicators. In addition, there is a group of 46.7% where apparently one or more mandatory indicators are not incorporated.

<table>
<thead>
<tr>
<th>Number of mandatory indicators</th>
<th>Percentage of municipalities (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 37</td>
<td>46.7% (50)</td>
</tr>
<tr>
<td>37</td>
<td>27.1% (29)</td>
</tr>
<tr>
<td>More than 37</td>
<td>26.1% (28)</td>
</tr>
</tbody>
</table>

Table 1. Number of mandatory indicators

Note(s): N = 107
Finally, there is a group of 26.1% that incorporates more than the required 37 non-financial performance indicators. In fact, these municipalities still incorporate one or two indicators that were previously mandatory: whereas at the start of the regulation, 39 indicators were mandatory, this declined to 37 for the FY2019 [4].

The prescription to incorporate uniform non-financial indicators does of course not imply that municipalities are not allowed anymore to use their own indicators in their budgets and annual reports, in addition to the mandatory indicators [5]. Table 2, panel A, shows that only 59.8% of municipalities choose to incorporate non-mandatory indicators in addition to the mandatory indicators. This means that 40.2% incorporates only the mandatory indicators. Looking at the average number of non-mandatory indicators used, this amounts to 42.3 (refer to Table 2, panel B). However, there is a considerable degree of dispersion. For example, one municipality incorporated only one non-mandatory indicator in its FY2019 budget, whereas another incorporated no less than 186 non-mandatory indicators.

Table 2 shows that municipal size indeed seems to matter. Our analysis indicates that small municipalities are less likely to incorporate non-mandatory performance indicators than large municipalities. Furthermore, among the municipalities that incorporate non-mandatory indicators, on average, large municipalities incorporate considerably more non-mandatory

<table>
<thead>
<tr>
<th>Panel A: number of municipalities having only mandatory or also non-mandatory indicators (N = 107)</th>
<th>Panel B: number of non-mandatory indicators (N = 64)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Only mandatory</td>
<td>Also non-mandatory</td>
</tr>
<tr>
<td>Size category</td>
<td></td>
</tr>
<tr>
<td>(1) Less than 20,000 inhabitants</td>
<td>48.3% (14)</td>
</tr>
<tr>
<td>(2) 20,000–50,000 inhabitants</td>
<td>43.1% (22)</td>
</tr>
<tr>
<td>(3) 50,000–100,000 inhabitants</td>
<td>27.8% (5)</td>
</tr>
<tr>
<td>(4) 100,000+ inhabitants</td>
<td>22.2% (2)</td>
</tr>
<tr>
<td>Participation in innovation program</td>
<td></td>
</tr>
<tr>
<td>(1) Yes</td>
<td>35.4% (17)</td>
</tr>
<tr>
<td>(2) No</td>
<td>44.1% (26)</td>
</tr>
<tr>
<td>Financial resources</td>
<td></td>
</tr>
<tr>
<td>(1) Higher debts</td>
<td>37.7% (20)</td>
</tr>
<tr>
<td>(2) Lower debts</td>
<td>42.6% (23)</td>
</tr>
<tr>
<td>Total sample</td>
<td>40.2% (43)</td>
</tr>
</tbody>
</table>

Note(s): \(^{a}\)p < 0.10, \(^{b}\)p < 0.05, \(^{c}\)p < 0.01
\(^{a}\)Mean scores are statistically significantly different between these groups at \(p < 0.01\) (Kruskal–Wallis test)
\(^{b}\)Mean score group “less than 20,000 inhabitants” is statistically significantly different from mean score group “50,000–100,000 inhabitants” at \(p < 0.01\) (Mann–Whitney test)
\(^{c}\)Mean score group “less than 20,000 inhabitants” is statistically significantly different from mean score group “100,000+ inhabitants” at \(p < 0.01\) (Mann–Whitney test)
\(^{d}\)Mean score group “20,000–50,000 inhabitants” is statistically significantly different from mean score group “50,000–100,000 inhabitants” at \(p < 0.01\) (Mann–Whitney test)
\(^{e}\)Mean score group “20,000–50,000 inhabitants” is statistically significantly different from mean score group “100,000+ inhabitants” at \(p < 0.01\) (Mann–Whitney test)
\(^{f}\)Mean score group “50,000–100,000 inhabitants” is statistically significantly different from mean score group “100,000+ inhabitants” at \(p < 0.01\) (Mann–Whitney test)

Table 2. Municipalities with non-financial indicators
indicators than small municipalities. In line with this, we note that the minimum number of non-mandatory indicators for the municipalities with more than 100,000 inhabitants is 71, whereas for the municipalities with 50,000–100,000 inhabitants, this is 14. However, there is a considerable degree of dispersion within each size group. For example, one municipality with less than 20,000 inhabitants in our sample uses no less than 142 indicators.

Our analysis also shows that municipalities that are more willing to innovate incorporate more performance indicators. We find that municipalities participating in the program Windows for Operational Management incorporate non-mandatory indicators more often than municipalities that do not (64.6 versus 55.9%). Moreover, if we look at the extent to which non-mandatory indicators are incorporated, the differences are much larger: the participating municipalities use, on average, 53.4 non-mandatory indicators, whereas this number is 30.4 among the non-participating municipalities.

For financial resources, we find results in line with willingness to innovate. Municipalities that have less financial resources incorporate non-mandatory indicators more often than municipalities that have more financial resources (62.3 versus 57.4%). The difference is much larger if we look at the average number of non-mandatory indicators being used. This number is more than twice as high for the group with less financial resources (55.9) than for the group with more financial resources (27.8), and this difference is also statistically significant.

If we follow the performance budgeting literature, information on the outcomes of policy is generally the most useful to facilitate better informed decision-making. Table 3 shows the average percentages of the type of indicators that are used, only considering the municipalities that incorporate non-mandatory indicators in their budgets. It appears that only 17.2% of the indicators used are outcome indicators. However, this number varies greatly between the size

<table>
<thead>
<tr>
<th>Size category</th>
<th>Input</th>
<th>Process</th>
<th>Output</th>
<th>Outcome</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) &lt; 20,000 inhabitants</td>
<td>7.4%</td>
<td>0.3%</td>
<td>80.3%</td>
<td>11.9%</td>
<td>100.0%</td>
</tr>
<tr>
<td>(2) 20,000–50,000 inhabitants</td>
<td>8.1%</td>
<td>2.3%</td>
<td>76.2%</td>
<td>13.3%</td>
<td>100.0%</td>
</tr>
<tr>
<td>(3) 50,000–100,000 inhabitants</td>
<td>5.0%</td>
<td>1.5%</td>
<td>71.8%</td>
<td>21.6%</td>
<td>100.0%</td>
</tr>
<tr>
<td>(4) 100,000+ inhabitants</td>
<td>3.6%</td>
<td>3.6%</td>
<td>69.1%</td>
<td>23.8%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Participation in innovation program</th>
<th>Input</th>
<th>Process</th>
<th>Output</th>
<th>Outcome</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Yes</td>
<td>6.6%</td>
<td>2.4%</td>
<td>72.0%</td>
<td>19.0%</td>
<td>100.0%</td>
</tr>
<tr>
<td>(2) No</td>
<td>9.4%</td>
<td>1.0%</td>
<td>80.2%</td>
<td>9.5%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financial resources</th>
<th>Input</th>
<th>Process</th>
<th>Output</th>
<th>Outcome</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Higher debts</td>
<td>6.9%</td>
<td>2.0%</td>
<td>75.7%</td>
<td>15.4%</td>
<td>100.0%</td>
</tr>
<tr>
<td>(2) Lower debts</td>
<td>9.0%</td>
<td>1.5%</td>
<td>76.0%</td>
<td>13.5%</td>
<td>100.0%</td>
</tr>
<tr>
<td>Total</td>
<td>6.4%</td>
<td>2.0%</td>
<td>74.4%</td>
<td>17.2%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Note(s): N = 64

* p < 0.10, ** p < 0.05, *** p < 0.01

a) Mean scores are statistically significantly different between these groups at p < 0.01 (Kruskal–Wallis test)
b) Mean score group “less than 20,000 inhabitants” is statistically significantly different from mean score group “50,000–100,000 inhabitants” at p < 0.01 (Mann–Whitney test)
c) Mean score group “less than 20,000 inhabitants” is statistically significantly different from mean score group “100,000+ inhabitants” at p < 0.01 (Mann–Whitney test)
d) Mean score group “20,000–50,000 inhabitants” is statistically significantly different from mean score group “50,000–100,000 inhabitants” at p < 0.01 (Mann–Whitney test)
e) Mean score group “20,000–50,000 inhabitants” is statistically significantly different from mean score group “100,000+ inhabitants” at p < 0.01 (Mann–Whitney test)

Table 3.
Type of indicators used

Note that only municipalities that incorporate non-mandatory indicators in their budget documents are included in this table.
categories: for the municipalities with less than 20,000 inhabitants, 11.9% of the indicators is an outcome indicator, while for the municipalities with more than 100,000 inhabitants, this percentage is 23.8%. Output indicators are the most commonly used. Further, 74.4% of the indicators used are related to this, and we see this trend roughly in all size categories, although the percentage is slightly lower among the largest municipalities (partly because of their higher percentage of outcome indicators). Input indicators are the next type that can be distinguished, with 6.4% of the indicators used. These indicators are relatively often incorporated in the budget by small municipalities, but are used relatively less by large municipalities. The least used are process indicators. Only 2.0% of the indicators incorporated in the analyzed budgets are considered to belong to this group, although the incorporation of process indicators by our sample of municipalities with more than 100,000 inhabitants is exactly the same as the incorporation of input indicators (3.6%). Apparently, municipalities consider it less important to report explicitly on process-oriented aspects such as turnaround times.

Also here, we see that municipalities participating in the program Windows for Operational Management show a different pattern in their incorporation of performance indicators. We observe a statistically significant difference in the extent to which the participating municipalities incorporate outcome indicators (19.0%) compared to their non-participating counterparts (9.5%). Finally, we do not see remarkable differences between the higher debts group and the lower debts group as far as the type of indicators is concerned.

Dillard and Vinnari (2019) argue that accounting systems (including budget documents) should transparently represent the actions of an organization. Therefore, the selection of performance indicators should cover the area of activities an organization performs. Furthermore, the informativeness principle (Indjejikian, 1999) suggests that performance information should adequately reflect the contribution of employees to value creation. Translated to our setting, we expect an alignment between the proportion of indicators formulated in specific domains and the amount of money spent on these domains. That is, following the informativeness principle, as well as the fact that municipalities are income-consuming entities, we would expect some coherence in this respect, and we would expect that municipalities incorporate non-mandatory indicators to correct for possible discrepancies when solely relying on mandatory indicators.

Table 4 shows the percentage-wise differences between the financial importance of domains and the number of indicators devoted to the domain. As non-mandatory indicators in this respect are seen as supplementing the number of mandatory indicators, only the mandatory indicators and the total number of indicators are shown. The physical domain accounts for the largest share of expenditures in the municipalities (40.3%), followed closely by the social domain (38.3%). The operational domain follows at a greater distance (21.5%). Looking at the mandatory indicators, we see those performance indicators are most often related to the physical domain (62.1%), leaving the other two domains far behind. The same picture holds if the number of non-mandatory indicators is incorporated. In comparison, the physical domain seems to have a much larger share of indicators devoted to it than would be expected when looking at its financial importance. The reverse is true for the operational and social domains, where the financial importance is considerably larger than the percentage of indicators dedicated to these domains.

Discussion and conclusion

Although the topic of performance budgeting has received considerable attention in the literature, the issue of how to incorporate non-financial performance information in budgeting is under-researched (Anessi-Pessina et al., 2016; Mauro et al., 2017; Sicilia and Steccolini, 2017). Furthermore, it is mainly explored in the field of public management and administration, and little research exists in the field of public sector accounting (Mauro et al., 2017). Whereas previous studies look at the incorporation of non-financial performance
This article focuses on the presence of non-financial performance indicators in the budget documents of Dutch municipalities. These entities started making efforts for this integration about 50 years ago, and our description showed that a search can be observed to connect policy and means. This search has not developed linearly over time, but mostly in reaction to major changes in national legislation, which in turn were often inspired by international developments in this area. Several projects were initiated to stimulate municipalities to incorporate non-financial performance indicators in their budget documents and annual reports. Although great efforts were made, the results of these efforts were generally quite disappointing. Based on a meta-study of one of the most important projects employed, Aardema (2002) concluded that in many instances, performance indicators were only used for illustrative purposes.

Whereas previous measures to stimulate municipalities to integrate non-financial performance indicators were non-mandatory, this changed in 2017. From that year onward, municipalities were forced to incorporate a set of mandatory non-financial performance indicators in their budgets and annual reports. Using a dataset of 107 municipal budgets for FY2019, we find that this legal obligation is not met by a considerable number of municipalities. Furthermore, we observe that almost two out of five municipalities only used the mandatory indicators in their budgets, and not (anymore) their own developed indicators. If we look at the non-mandatory indicators, we see that most of them can be considered to be output indicators. Whereas the literature points to the benefits of using outcome indicators, the daily practice seems to lag behind. A possible explanation for the limited incorporation of outcome indicators could be that the other indicators are easier to measure in practice. This explanation is in line with Micheli and Mari (2014, p. 153), who point out that “performance in organizations is often reduced in its meaning and scope to what is technically easier to measure of performance itself.”

We explored whether the differences in incorporation of non-mandatory non-financial performance indicators in budgets can be explained by the size, innovation willingness and amount of financial resources. Consistent with the limited number of publications in this specific field (e.g. van Dooren, 2005; Saliterer and Korac, 2013) and contingency-based studies (e.g. Chenhall, 2003), we found that more indicators are incorporated if a municipality is larger, more willing to innovate and if it has less financial resources. This illustrates that the degree to which non-financial performance indicators are integrated in budget documents does not only depend on national legislation and nation-wide projects, but also on local conditions.

<table>
<thead>
<tr>
<th>Domain</th>
<th>Financial importance</th>
<th>Mandatory ind.</th>
<th>All indicators (including non-mandatory)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational</td>
<td>21.5%</td>
<td>4.0 (10.8%)</td>
<td>7.9 (13.0%)</td>
</tr>
<tr>
<td>Physical</td>
<td>40.3%</td>
<td>23.0 (62.1%)</td>
<td>36.6 (60.1%)</td>
</tr>
<tr>
<td>Social</td>
<td>38.3%</td>
<td>10.0 (27.1%)</td>
<td>16.3 (26.7%)</td>
</tr>
<tr>
<td>Total</td>
<td>100.0%</td>
<td>37.0 (100.0%)</td>
<td>60.8 (100.0%)</td>
</tr>
</tbody>
</table>

Note(s): N = 107

a We calculated the costs of the operational domain by taking the average reported costs per municipality in the Budget 2019 for the task field Governance and support. For the physical domain, we included the task fields Safety; Traffic, transport and water management; Economy; Education; Sports, culture and recreation; Public health and environment; and Public housing, spatial planning and urban renewal. For the social domain, we took the costs of the task field Social security.

b Table 4 differs from the other tables, as it does not take into account size, innovation willingness and amount of financial resources. The decision was made to only present the results for the total sample, as the primary goal of this analysis was to assess the informativeness principle for local government, and the differences between groups were quite small. These results are available upon request.
Following Dillard and Vinnari (2019), we believe that accounting systems (including budget documents) should transparently represent the actions of an organization. More specifically, we argue that it is important that the selection of performance indicators covers the area of activities an organization performs. We operationalized this issue by analyzing to what extent the number of indicators used by municipalities for different task fields aligns with their financial importance. Our study shows that indicators are disproportionately often related to the physical domain. Especially for the social domain, and to a lesser extent the operational domain, a large discrepancy can be observed between average financial importance and attention in the form of the incorporation of indicators.

Our study has many implications for the daily practice. First, the fact that Dutch municipalities are already looking for ways to integrate non-financial performance indicators in their budgets for about 50 years shows that this is not an easy exercise. Second, whereas we observe that great efforts were made and several initiatives were undertaken in this journey, the results of these initiatives were generally quite modest. Therefore, expectations about actual improvements should not be put too high. Third, our finding that the extent to which non-financial performance indicators are used does not only depend upon country-wide initiatives and regulations, but also on local conditions, suggests that the need, willingness and ability to implement non-financial performance indicators is related to local circumstances. Fourth, although the literature points to the advantages of using outcome indicators, we find that Dutch municipalities incorporate output indicators more intensively. Moreover, we observe that the amount of indicators used for the domains that can be distinguished in the Dutch local government setting (i.e. the operational, physical and social domains) does not match the financial importance of these domains. Therefore, we advise to carefully rethink the selection of indicators in terms of type (input, process, output and outcome) and coverage of all municipal tasks. Fifth, our finding that larger municipalities and municipalities that show more innovation willingness incorporate more indicators suggests that internal municipal conditions, such as the availability of personnel and their ambitions, are important drivers of the extent to which indicators are developed, and should therefore be considered. Sixth and finally, as the extent of the availability of financial resources is negatively associated with the number of non-financial performance indicators, this underlines the need for more information in situations of scarcity (Hopwood, 2009).

This study is not without limitations. First, the number of municipalities with non-mandatory indicators in our dataset was rather small (64), which in combination with the skewed distributions of the variables used in our analyses only allowed for non-parametric tests. Second, we only analyzed three possible drivers of incorporating non-financial performance indicators, and future studies can extend this analysis. Hereby, also the role of specific actors within a municipality should be studied. Earlier research (van Hengel et al., 2014) already showed that both politicians and managers – both individually and in combination – can influence the development and use of performance indicators, also because they have different interests. Third, we only looked at the number of indicators and did not take the quality and comprehensiveness of the indicators into account. For example, it may vary by domain how comprehensive indicators are: some task fields may require more indicators than others to gain a consistent view of their performance. Fourth, we believe that the differences in the amount of indicators that are used in the three domains we studied (i.e. the operational, physical and social domains) may be connected with the difficulty of measuring the activities in these areas. We advise to explore this issue further, by investigating to what extent these activities are seen as difficult to measure (cf. Brown and Potoski, 2005), and whether this is related to the number of indicators. Finally, future studies in other empirical settings can analyze the extent to which our findings also hold for these contexts as well as provide additional insights.

Despite these shortcomings, we believe that this article contributes to the understanding of how to incorporate non-financial performance indicators in public sector financial statements. To the best of our knowledge, this is an area that is not explored before.
Notes

1. The municipalities that were included in this research project represent a sample of 30.1% of all Dutch municipalities. A $t$-test for two independent samples shows no significant difference in size (measured as the natural log of the number of inhabitants) between the municipalities included in this research project and the municipalities that were not included ($t(378) = -1.092, p = 0.276$). A one-sample chi-square test shows no significant difference in regional representation between the municipalities included in this research project and the total population of Dutch municipalities in 2018 ($\chi^2(11, 107) = 13.918, p = 0.238$).

2. Following Bouckaert and Halligan’s (2008) framework for performance information, we distinguish the following types of indicators: (1) input indicators refer to the measurement (in terms of amount of money or physical inputs) of sustainable and non-sustainable inputs used in the production process; (2) process (throughput) indicators measure the activities and/or their characteristics (e.g. absenteeism) carried out by the relevant organization during the production process; (3) output indicators show the results of the production process in terms of the number of products or services that were intended to have been achieved. Outputs differ from throughputs in terms of direct consumption by citizens. A core characteristic of these indicators compared to the outcome indicators is that the municipality may exert direct influence on this, e.g. with respect to the number of passports; and (4) outcome indicators reflect the social impact of the output delivered. The impact is the end result of the production process. These indicators are about the final results (and the quality) of the outputs. The municipality’s influence on the social effects is indirect, i.e. through outputs.

3. These data are publicly available via the website of Statistics Netherlands (statline.cbs.nl).

4. There is a possibility that municipalities still consider these indicators to be relevant. Another explanation could be that they are not aware of the fact that these indicators are no longer mandatory.

5. We also include among the mandatory indicators those indicators that were mandatory at an earlier stage.

References


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