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Niemann, L. H. H., & Hoppe, T. (2017). Sustainability reporting by local governments: a magic tool? Lessons on use and usefulness from European pioneers. *Public Management Review: an international journal of research and theory*. <https://doi.org/10.1080/14719037.2017.1293149>

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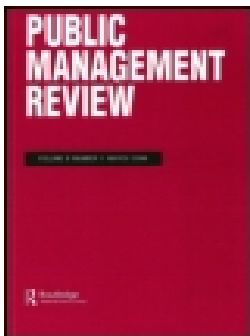
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To cite this article: Ludger Niemann & Thomas Hoppe (2017): Sustainability reporting by local governments: a magic tool? Lessons on use and usefulness from European pioneers, Public Management Review

To link to this article: <http://dx.doi.org/10.1080/14719037.2017.1293149>



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Published online: 01 Mar 2017.



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Sustainability reporting by local governments: a magic tool? Lessons on use and usefulness from European pioneers

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ABSTRACT

A growing number of city governments worldwide engage in sustainability reporting, voluntarily and responding to legal pressures. Diverse practices emerged based on unique choices concerning formats, periodicity, authorship and dissemination efforts. Such design questions and associated outcomes are highly relevant for practitioners yet unaddressed in standard guidelines and most prior research that primarily concern content and conjectured reporting benefits. This article presents a framework suited to assessing real-life practices and outcomes. An exploratory evaluation in Amsterdam, Basel, Dublin, Freiburg, Nuremberg and Zurich suggests that sustainability reporting can benefit organizational change, management and communication yet also lead to ‘fatigue’ and discontinuation.

KEYWORDS Sustainability reporting; local governments; integrated reporting; sustainability indicators; GRI

Introduction

It’s great to have an absolutely rigorous reporting framework. The only problem is they’re useless unless somebody uses them.

– Civil servant, Dublin City Council (I.16)

Sustainability reporting is on the rise throughout the public sector. International frameworks such as the United Nations’ ‘Sustainable Development Goals’ (specifically SDG target 12.6) call for increased reporting by all types of institutions. In the European Union, a recent directive (2014/95/EU) requires all large ‘public interest entities’ to start disclosing ‘non-financial and diversity information.’ France recently mandated all municipalities with more than 50,000 inhabitants to periodically produce sustainability reports (CGDD 2012), and similar legislation is mooted elsewhere.

Proponents of reporting applaud this trend, with the Global Reporting Initiative (GRI) as the internationally most influential institution. Media coverage can be emphatic too: referring to the positive experience of Amsterdam and other cities, one news article claims that ‘a commitment to sustainability reporting is a vital step towards creating vibrant cities’ (Ballantine 2014, 4). According to their prefaces,

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sustainability reports generally serve ambitious objectives targeting multiple audiences. The mayor of the German city of Freiburg, for example, writes that ‘this sustainability report, presented to the municipal council and the public, serves in conjunction with the municipal budget as an important management instrument for sustainable urban development’ (Freiburg Municipality 2014, 3). In analogy to ‘magic concepts’ such as *accountability* and *governance* that are popular in public management (Pollitt and Hupe 2011), sustainability reporting is thus often portrayed as a magic, ‘jack of all trades’ tool simultaneously fostering better policymaking and citizen engagement.

What is the evidence for reporting being an effective, multi-purpose, universally applicable way of promoting sustainability, both inside and outside of local governments? There are conjectural statements about various positive effects (e.g. Lamprinidi and Kubo 2008) but also warnings: in the private and public sector, some critics fear ‘accountingization’ where sustainability reports are merely ‘an outlet for “greenwashing” or a source of “managerialist” information’ (Dumay, Guthrie, and Farneti 2010, 543) that ‘may reinforce business-as-usual and greater levels of unsustainability’ (Milne and Gray 2013, 13). In a less extreme scenario, reporting may lack or lose its benefits; as evident from this article, in some cities, sustainability reporting was started with enthusiasm but later stopped following what practitioners describe as ‘reporting fatigue.’

Surprisingly, academic literature shows little consideration for these real-world phenomena. Most studies explore why organizations decide to become reporters and what kind of information they typically ‘disclose,’ implicitly assuming that transparency and thus reporting is worth pursuing. In sustainability reporting research, few studies address processes, and too easily the question of ‘how’ gets a response in terms of a ‘why’ (Stubbs and Higgins 2014). Recognizing the need for reflection, this journal published in 2012 the assertion that ‘research which simply focuses on enhancing public sector reporting practices without a broader theoretical engagement in the social and organizational context of the public sector is likely to be misguided’ (Lodhia, Jacobs, and Park 2012, 645). Arguably, sustainability reporting risks ‘merely exacerbating the already overwhelming amount of disclosure provided without adding further insight’ (S. Adams and Simnett 2011, 294) if negative outcomes such as ‘information overload’ (de Villiers, Rinaldi, and Unerman 2014) remain ignored.

This article responds to calls for context-sensitive, process and outcome-oriented research by investigating the use of sustainability reporting by local governments from a longitudinal perspective. Building on evaluation research (Weiss, Murphy-Graham, and Birkeland 2005), we developed a framework designed to analyse different reporting practices and explored those developed by six pioneering cities in Europe since 2004. This study thus pursues the following overall research question: *How have sustainability reporting practices evolved in pioneering European local governments, and what are their effects?*

This article is organized as follows: section ‘Sustainability reporting by local governments’ contains a review of research on sustainability reporting by local governments. Section ‘A framework to study reporting practices and outcomes’ introduces a framework designed to assess the use of sustainability reporting by local governments. Section ‘Research method’ addresses research methods including case selection criteria. Section ‘Results from six cities’ presents the results of the comparative analysis of six cases studies. Section ‘Discussion and conclusion’

concludes with a discussion of the results and the formulation of hypotheses for future research.

Sustainability reporting by local governments

It has been observed that the concept of sustainability has ‘saturated the modern world’ whereas ‘sustainability practices for public services have been neglected by scholars and others as a subject of theoretical research and in-depth investigation’ (Guthrie, Ball, and Farneti 2010, 450). External reporting is one core feature – along with the performance measurement and accruals accounting – of many reform processes of the recent decades (Marcuccio and Steccolini 2009). The focus on reports has also been fuelled by increased attention (from policymakers and researchers) to accountability (Bovens 2005; Willems and Van Dooren. 2012). In fact, external reporting arrangements are likely to feature in any performance management or public accountability discussion (Downe et al. 2010).

Given the popularity of both sustainability and external reporting, it may come as no surprise that the conceptual joint venture of ‘sustainability reporting’ has become influential. In the public sector, however, the phenomenon is not easy to study. To begin with, the term *sustainability reporting* has two key meanings: (i) producing reports yet also (ii) disclosing information. This dual meaning stands at the root of two major lines of research with different conclusions: firstly, when assessing the prevalence of reports, a common observation is that ‘the uptake, forms and practice of sustainability reporting among public agencies is still in its infancy compared to the private sector’ (Lamprinidi and Kubo 2008, 328); when studying mere disclosure, scholars praise increasing compliance rates (Navarro Galera et al. 2014; Williams, Wilmshurst, and Clift 2011).

The search for disclosure – detecting the presence of desired indicators in institutional communications – has become the dominant research paradigm. A recent review of 178 studies concerning private and public-sector reporting classified 58 per cent as applying a form of document analysis (Hahn and Kühnen. 2013). Our review of the literature focusing on local governments produced a similar picture (see Table 1).

In the private sector, sustainability reporting is often attributed to the objective of maintaining a ‘social licence to operate,’ and public-sector sustainability reporting research also refers to legitimacy-seeking behaviours. Various studies listed in Table 1 affirm that local governments generally have institutional and political motives to adopt reporting practices, ‘mimicking managerial manners’ (Marcuccio and Steccolini 2005). Cities are keen to strengthen their credentials as being ‘green’ and ‘smart’ to gain a ‘competitive edge in the global knowledge economy’ (Yigitcanlar and Lönnqvist 2013).

In the times of ‘open data,’ however, local government disclosure takes place via different media (print or electronically), different documents (e.g. plans, reports, policy papers), at different intervals, and may be a stand-alone activity or part of a larger process. Furthermore, indicators can be used descriptively or with performance-oriented targets and rankings, which has profound management implications (Behn 2003). Therefore, studying mere disclosure faces ceiling effects and loses analytical power as it eschews the question of organizational use.

Table 1. Recent studies concerning sustainability reporting by local governments.

Reference	Study object	Data collection	Main results
Marcuccio and Steccolini (2005)	12 Italian local authorities	<ul style="list-style-type: none"> Interviews 	<ul style="list-style-type: none"> Growth in reporting is 'management fashion' Reporting can be a tool for appearing innovative and progressive Reporting practices are diverse; the annual report is only one medium for disclosures No standard set of factors can explain differences in disclosure practices
Guthrie and Farneti (2008)	7 Australian public organisations	<ul style="list-style-type: none"> Content analysis of disclosures 	<ul style="list-style-type: none"> Major driver: seeking of legitimacy 80 German local governments have produced one or more reports Reporting serves management functions, sometimes communication
Marcuccio and Steccolini (2009)	15 Italian local authorities	<ul style="list-style-type: none"> Analysis of social reports 	<ul style="list-style-type: none"> Half of the respondents report on at least one sustainability domain 40% of non-reporters indicate willingness to report in future City councils have a large degree of discretion on what to report Some differences between countries appear related to cultural differences
Plawitzki (2010)	German municipalities	<ul style="list-style-type: none"> Prevalence of reports Six case studies 	<ul style="list-style-type: none"> No city council had stand-alone reports, many cover sustainability issues in annual reports There is a need for a holistic, contextual reporting framework addressing local issues Disclosure driven by individual interests of managers and policymakers
Williams, Wilmshurst, and Clift (2011)	Australian local governments	<ul style="list-style-type: none"> Mail survey 	<ul style="list-style-type: none"> Local governments are reasonably transparent No link between disclosure and (financial) development
Greco, Sculli, and D'onza (2012)	10 Italian and Australian city councils	<ul style="list-style-type: none"> Interviews with managers and accountants 	
Goswami and Lodhia (2014)	4 Australian city councils	<ul style="list-style-type: none"> Content analysis of annual reports 	
Alcaraz-Quiles, Navarro-Galera, and Ortiz-Rodríguez (2014)	55 Spanish towns	<ul style="list-style-type: none"> Disclosure of GRI indicators on websites Regression analysis on 13 factors 	
Navarro Galera et al. (2014)	33 European local governments	<ul style="list-style-type: none"> Content analysis of websites 	

The alternative of researching the production of reports – as opposed to information – is challenging too. How many local governments have sustainability reports? This is difficult to answer in the absence of straightforward conceptual boundaries on what constitutes sustainability reporting. While some documents labelled ‘sustainability reports’ are little more than indicator tables, others are extensive accounts of trends, actions and plans. Putative sustainability reports may carry idiosyncratic titles such as ‘City X – Progress Account.’ Standardized frameworks – for example, the GRI’s guidelines that are widely used by companies – have failed to catch on among local governments whose reports show considerable diversity without recurring to the GRI (Williams, Wilmshurst, and Clift 2011). GRI estimates to have information on about half of all reports applying its guidelines (personal communication, 7 April 2015). The GRI’s publicly accessible registry (<http://database.globalreporting.org>) currently lists 450 ‘public agencies’ – mainly public enterprises – and about 50 cities including Melbourne in Australia and Incheon in South Korea. With reporting remaining voluntary in most countries, there are no reliable registries nor estimates of reporters. Presumably the vast majority of the world’s local governments has never (consciously) engaged in sustainability reporting yet some ‘early adopters’ have multi-year experience.

Furthermore, distinguishing ‘reporters’ from ‘non-reporters’ becomes even more difficult when organizations forgo distinct reports while rather including sustainability considerations into their general reporting cycle. Advocates of integrated reporting – designated IR by the International Integrated Reporting Council (2008) – herald this approach as an effective way to increase the relevance of sustainability information for decision makers. The aim is to promote ‘integrated thinking’ and to overcome duplications and ‘silo thinking’ by integrating information systems of internal and external reporting (Stacchezzini, Melloni, and Lai 2016). Early discussions included the idea for an organization’s integrated report to be a high-level overview yet the current IR framework proposes replacing other forms of reporting (de Villiers, Rinaldi, and Unerman 2014). Critics ironically dub IR the ‘new holy grail’ (Milne and Gray 2013) and talk of ‘capture’ by the accounting profession (Flower 2015) yet it is increasingly popular among companies and also influencing the public sector (Bartocci and Picciaia 2013). As with sustainability reporting, most academic studies have explored determinants of IR adoption. Thus focusing on the ‘icing rather than the cake,’ ‘only a few papers attempt to assess the consequences (costs and benefits) of integrated reporting’ – Perego, Kennedy, and Whiteman (2016, 6) therefore argue that quantitative studies based on publicly available data are inadequate and call for more qualitative research. In the words of Mitchell, Curtis, and Davidson (2008, 68), ‘We must look beyond what is presented in reports, and evaluate the impact on those involved in the process of reporting.’ Specifically for local governments, research is required to understand which type of sustainability reporting leads to which type of short-term and long-term benefits and constraints. Moreover, research requires context-sensitivity: a recent meta-analysis of social accountability mechanisms concluded that ostensibly identical tools (e.g. participatory monitoring) can be effective or not depending on how they are embedded in local policies, and thus only ‘the subnational comparative method can reveal patterns of variation that otherwise would be hidden by homogenizing national averages’ (Fox 2015, 356).

A framework to study reporting practices and outcomes

Researching the local use and usefulness of sustainability reporting requires appropriate models and methods. Since no single theoretical framework is able to cover the range of reporting practices (Marcuccio and Steccolini 2009), we seek to make a contribution by constructing a theoretical framework that facilitates the understanding of reporting outcomes. For this purpose, we draw on relevant literature and guidelines about reporting contexts, features, processes and outcomes.

Concerning contexts, a first observation is significant diversity: Local governments share the fact of governing limited, subnational geographical areas such as towns or counties yet this takes place in different economies, cultures, environments, legal systems, etc. In the sphere of sustainability management there are thus important debates about the appropriateness of developing standardized as opposed to context-specific approaches and tools (e.g. Moreno Pires, Fidélis, and Ramos 2014; Joss et al. 2015). Concerning sustainability disclosures by local governments, research points to the influence of administrative cultures and data availability (e.g. Alcaraz-Quiles, Navarro-Galera, and Ortiz-Rodríguez 2014; Krank, Wallbaum, and Grêt-Regamey 2010), making it plausible that reporting practices too are influenced by such macro-contextual differences.

As for reporting features, since the 1990s, the notion of the 'triple bottom line' has been popular and implies the idea that sustainability reports provide information on environmental, social and economic matters (de Villiers, Rinaldi, and Unerman 2014). In 2005, the GRI launched sustainability reporting guidelines for the public sector that suggest addressing three information types, namely organizational performance, public policies and contextual issues. Figure 1 illustrates these with examples.

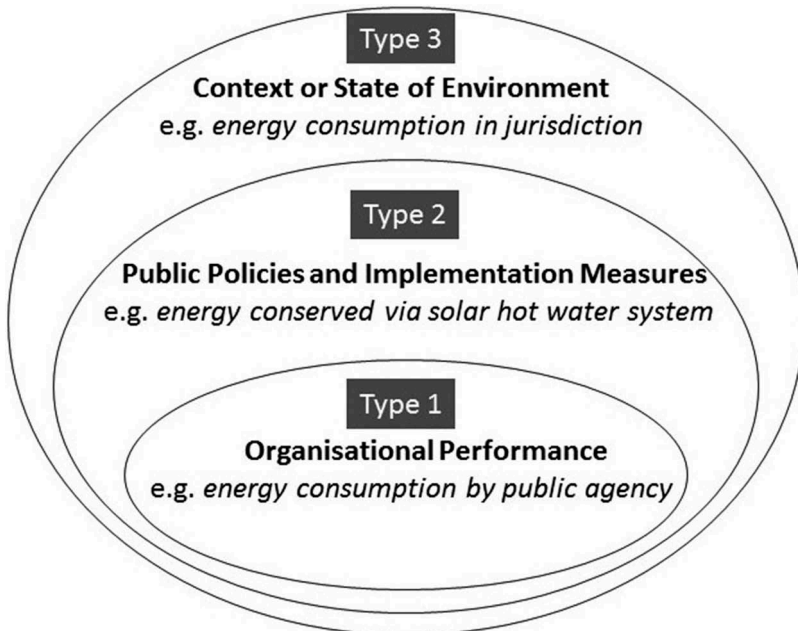


Figure 1. Information types in public-sector reports according to GRI (2005).

For the GRI, ‘The focus is to provide reporting guidance on the first and second type of information, as the third type of information is often included in other types of reports’ (Global Reporting Initiative 2005, 5). Reporting thus on organizational performance rather than on wider, city-level indicators is plausible for many public-sector organizations such as utilities or universities. After all, it is ‘unrealistic to hold agencies accountable for achieving outcomes that are largely affected by forces outside the organization’s control’ (Pitts and Fernandez 2009, 403). By the same token, disregarding ‘state of the environment’ monitoring is unsatisfactory for governments as they are organized along jurisdictional lines and enjoy certain control.

While the GRI framework is about retrospective reporting, failing to address the time dimension beyond comparing a report to the previous one (Lozano and Huisingh 2011), the IR framework also requires forward-looking projections and targets (Stacchezzini, Melloni, and Lai 2016). This implies another information type, labelled ‘outlook,’ and implicitly addresses the question of periodicity. In the private sector, both financial and sustainability reports are usually published annually, strengthening the case for their integration, yet this is no necessity. Many local governments in Germany issue sustainability reports at multi-year intervals (Plawitzki 2010).

Concerning non-manifest aspects of reporting, practitioners face essential design choices. Who should be involved, what should those involved be doing and what process should they follow (Mitchell, Curtis, and Davidson 2008)? For these process questions, normative frameworks offer little guidance. Sustainability reporting as promoted by the GRI recommends the participation and targeting of a wide stakeholder audience, while IR has a narrower focus on providers of financial capital (C. A. Adams 2015). The latter may be inappropriate for the public sector (Bartocci and Picciaia 2013); for local governments, key stakeholders relevant for reporting minimally include civil servants, politicians and the public. Another process feature concerns external auditing which according to some authors ‘should be a permanent element of every sustainability report’ (Greiling and Grüb 2014, 220). The evidence base for this assertion is, however, scarce. Most extant research eschews the ‘black box’ of organizational processes (Perego, Kennedy, and Whiteman 2016).

As for outcomes associated with reporting, normative frameworks extol the positive – GRI guidelines do not identify costs but list multiple benefits including enhanced ‘intra- and inter-departmental coordination,’ ‘operating efficiency’ and ‘participation by various stakeholders in decision making and governance’ (GRI 2005). Integrated reporting implicitly alludes to potentially negative outcomes when promising to stop ‘numerous, disconnected and static communications’ (IIRC 2008, 2). IR thus draws attention to information needs and uses, an issue often neglected in transparency agendas. ‘The more information there is in a report about individual, social, environmental and economic impacts, policies and practices, the greater is the likelihood of information overload for readers’ (de Villiers, Rinaldi, and Unerman 2014, 1045). Evidently, sustainability reporting may have unintended consequences. With the introduction of reporting, some non-profit organizations apparently experienced that ‘morality was replaced by the financial bottom line’ (Dumay, Guthrie, and Farneti 2010, 534).

Some scholars distinguish informative and transformative reporting impacts; the latter is about external, communicative and the former about internal, managerial perspectives (Perego, Kennedy, and Whiteman 2016). Since many of the (purported)

benefits of sustainability reporting concern organizational issues (see Lamprinidi and Kubo 2008), it appears expedient to conceptualize these in more detail. In this regard, a framework used in evaluation research that distinguishes three types of information use produces worthwhile insights. According to its main proponents, 'Instrumental use is presumed to yield decisions of one kind or another. Conceptual use yields ideas and understanding. Political use yields support and justification for action or no action' (Weiss, Murphy-Graham, and Birkeland 2005, 14). This typology allows the clustering of manifest impacts whilst also paying attention to the 'politics of policy-making' (Bauler 2012). In their prefaces to sustainability reports, for example, mayors commonly express the wish to promote accountability, yet beyond such socially valued aims, any publication can also be used as 'ammunition' in political debates (Lyytimäki et al. 2013). Since 'use' connotes intentionality, some researchers suggest also probing for information 'influence,' noting that use does not imply influence, and influence does not require conscious use (Lehtonen, Sébastien, and Bauler 2016).

Table 2 juxtaposes three main uses, influences and outcomes of sustainability reporting with associated stakeholders, acknowledging that this is a simplification of complex matters. There is evidence of (public sector) sustainability reporting leading to organizational learning, facets of improved management, and positively valued communication with outside audiences (e.g. S. Adams and Simnett 2011). One might argue that sustainability reports can also foster learning or decision-making among citizens; after all, some mayoral prefaces profess that wish. Prior research on local government reports, however, found negligible citizen uptake (Steccolini 2004). It has been asserted that 'as far as the public is concerned, the publication of performance data in annual reports and government white papers is for the most part equivalent to putting a message in a bottle and throwing it into the sea' (Pollitt 2006, 52). Concerning external audiences, the agenda-setting influence of reporting is more plausible. Table 2 further addresses the observability of outcomes, which we rated as generally low for internal ones and very low for external ones. This conjectural assessment, informed by the literature (e.g. Sébastien and Bauler 2013), serves to highlight the complexity of researching the effects of sustainability reporting. Most organizational changes and learning processes are incremental and influences on external stakeholders highly ephemeral, necessitating qualitative research methods (Perego, Kennedy, and Whiteman 2016).

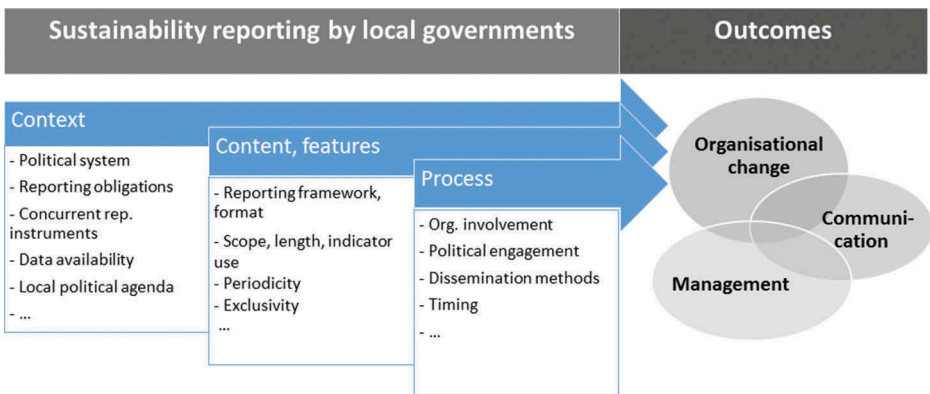
In summarizing the literature and concepts introduced so far, we posit that three main factors (roughly corresponding to independent variables) influence the effects of sustainability reporting by local governments: (i) context, (ii) reporting features and (iii) process characteristics. Concerning (ii) features, the three information types proposed by the GRI (*context, policies, organizational performance*) plus *outlook* derived from IR constitute relevant constructs; for (iii) processes, prior literature lends face validity to the distinction of organizational involvement, political efforts and dissemination strategies. Finally, adding organizational change, management and communication as outcome-oriented research categories (dependent variables) leads to the assessment framework presented in Figure 2.

Research methods

To test the assessment framework, we applied it to real-world practices. In light of evidence that the adoption of reporting is influenced by short-lived fashions (Marcuccio and Steccolini 2005), we considered it most instructive to study cases

Table 2. Outcomes associated with sustainability reporting.

Perspective	Uses and influence	Associated outcomes, concepts	Typical stakeholders or target groups	Visibility of outcomes
Internal	Conceptual	Organizational change • Knowledge, ideas • Networks • Motivation • Efficiency	• Staff in local government • and associated organizations	• Low
	Instrumental	• Management • Decision-making • Evidence-informed policymaking	• Elected politicians • Senior civil servants	• Low
External	Political-symbolic	• Communication • Agenda-setting • Legitimacy, accountability • Justification for (non)-action	• Citizens • Media • Businesses • Civil society groups	• Very low

**Figure 2.** Assessment framework linking reporting factors and effects.

where sustainability reporting was developed over longer periods. The purposeful selection of ‘early adopters,’ ‘frontrunners’ and ‘reporting champions’ as cases is a well-established methodological choice (e.g. Bebbington, Higgins, and Frame 2009; C. A. Adams and Frost 2008). Our main selection criteria thus were the implementation of sustainability reporting over several years and positive appraisal from researchers, peers or the awarding of public prizes. To ensure a minimum and comparative level of administrative capacities, we chose to focus on European cities with at least 100,000 inhabitants. The six Dutch, German, Irish and Swiss cities presented in Table 3 were identified via the literature (see Table 1), report registries including the GRI’s, and by consulting experts in international organizations including GRI and ICLEI.

To explore the context, history, emergent practices and effects of sustainability reporting in accordance with the theoretical framework (Figure 2) required applying mixed research methods. As virtually all outcome areas including organizational change and agenda-setting are not directly observable (cf. Table 2), we applied a document analysis and exploited insights retrieved from key informants. In each city, semi-structured interviews were held with three types of informants: civil

Table 3. Case study cities.

Country	City	Inhabitants	Justification for case study selection
Switzerland	Zurich	401,000	Multiple reports since 2004
	Basel	195,000	Multiple reports since 2005
Netherlands	Amsterdam	830,000	Multiple reports since 2005; use of GRI
Germany	Nuremberg	517,000	Multiple reports since 2009; positive evaluation by Plawitzki (2010)
Ireland	Dublin	1,270,000	Multiple reports since 2010; use of GRI
Germany	Freiburg	220,000	Innovative reporting methodology; use of GRI

servants, elected politicians (mayor or city councillor) and academics or NGO representatives. Adding the GRI, nineteen interviews (each lasting 30–90 min) with twenty-one informants (numbered as I.1 to I.21) were held during visits and by telephone. All interviews were tape-recorded, transcribed and key statements translated into English for interviews held in German and Dutch. Data were collected and coded according to the assessment framework (Figure 2) and the additional operationalization presented in Table 4. For each discernible reporting practice, the first author qualitatively rated four reporting features, namely the comprehensiveness and quality of information concerning context, public policies, organizational performance and outlook. Further qualitative ratings were applied to the aggregate intensity of three process features (organizational involvement, political involvement and dissemination efforts) and the perceived strength of effects in three outcome clusters (organizational change, management, communication). The rating was omitted when interviewees lacked knowledge, for example, of processes dating 10 years ago.

This study design has evident limitations: from six, purposefully selected, diverse yet well-resourced ‘pioneers’ one cannot generalize findings to hypothetical ‘average local governments.’ While the theoretical framework assumes the importance of context factors, the small case number did not allow exploring these in detail. The fact that cities were identified by name may have contributed to biased responses from key informants, though this risk was mitigated by triangulation strategies. Experimenting voluntarily with diverse strategies, local governments had little performance pressure, and interviewees expressed much openness to share shortcomings and critical reflections.

Results from six cities

The six analysed ‘early adopters’ all initiated sustainability reporting voluntarily. Over the years, each deliberately made different major design choices. This section presents a comparative assessment, starting with observations on features, processes and outcomes before identifying potential causal links.

At the level of reporting features, in four cities we identified one major practice such as tri-annual reports in Nuremberg and annual reports in Dublin. For Zurich, we distinguished two phases, as its local government initially published longer, multi-year reports before changing to shorter, annual ones. Amsterdam experimented with various strategies including stand-alone sustainability reports, followed by the integration of sustainability indicators into its general (annual, financial) statements, and the launching of a ‘sustainability agenda.’ The last two instruments do not represent typical sustainability reports; nonetheless, analysing them appeared

Table 4. Operationalization of research constructs.

Dimension	Subdimension	Coding and rating of evidence for:	Information source
Content	Context	<ul style="list-style-type: none"> • Indicators (e.g. CO₂ emissions) concerning the jurisdiction 	<ul style="list-style-type: none"> • Analysis of published report
	Public policies	<ul style="list-style-type: none"> • Where useful: comparisons, benchmarks • Policies, investments under government control 	
	Organizational performance	<ul style="list-style-type: none"> • Desirable: analysis of impact of decisions • Organisational accounts (buildings, staff, etc.) • Performance indicators, e.g. CO₂ emissions of governmental buildings • Where useful: benchmarks 	
	Outlook	<ul style="list-style-type: none"> • Upcoming plans and decisions • Desirable: local agenda and targets 	
Processes	Organizational involvement	<ul style="list-style-type: none"> • Involvement of local government staff and other stakeholders 	<ul style="list-style-type: none"> • Interviews
	Political involvement	<ul style="list-style-type: none"> • Involvement of local government (senior) staff and city councillors 	<ul style="list-style-type: none"> • Interviews • Documents
	Dissemination efforts	<ul style="list-style-type: none"> • Launching events, media, Internet • Timing 	<ul style="list-style-type: none"> • Interviews • Communications
Outcomes	Organizational change	<ul style="list-style-type: none"> • Sustainability-related knowledge gains • Data management capacities • Internal and external collaboration • Staff morale 	<ul style="list-style-type: none"> • Interviews
	Management	<ul style="list-style-type: none"> • Reference to reports and indicators in government plans • Performance monitoring 	<ul style="list-style-type: none"> • Interviews • Communications
	Communication	<ul style="list-style-type: none"> • References in debates, publications • Media response • Information requests • Emulation of reporting by other organizations 	<ul style="list-style-type: none"> • Interviews, media statistics (if available)

vital to understand the evolving system. According to official documents, Amsterdam will relaunch dedicated, annual sustainability reports to ‘enter into an intensive dialogue with the city’ while ‘the financial statements can then focus on managing on the basis of the results and targets’ (Amsterdam Municipality 2015, 60). In the six cities, we thus identified nine sustainability reporting practices that are summarized in Table 5. Evidently, discerning reporting practices is not clear-cut; in every local government, multiple reporting instruments exist in parallel and evolve over time.

Comparing features of stand-alone reports revealed diverse information quantities (e.g. documents with 31 pages in Zurich, 126 in Nuremberg), the absence of external auditing, and the predominance of own, tailor-made formats. Amsterdam (initially), Dublin and Freiburg made loose references to GRI guidelines yet all local governments argued that no existing framework met their needs, prompting the development of their own formats. In the view of several key informants, comparisons and benchmarking were desirable but local relevance an overriding concern. In the words of one civil servant (I.13), ‘It’s good that there are no standardised indicator sets. At most a menu makes sense where local governments can choose which indicators are important for us.’



Table 5. Comparative assessment of reporting features and perceived outcomes.

Report features	Type	Zürich		Basel		Amsterdam		Nuremberg		Dublin		Freiburg	
		Multi-year report 2004, 2008	Yearly report 2012, 2013, 2014, 2015	Multi-year report 2005, 2010, 2013	Multi-year report 2005, 2008	Section in annual report Since 2010	Multi-year 'agenda' 2015	Multi-year report 2009, 2012	Yearly report 2010, 2011, 2012, 2013	Yearly report 2010, 2011, 2012, 2013	Biannual report 2014		
Framework, format		• Own • Printed + PDF	• Own • Web only	• Own • Printed + PDF	• GRI-3 • Printed	• Own • PDF	• Own • Printed + PDF	• Own • Printed + PDF	• Own (GRI index) • PDF only	• Own (GRI index) • Printed + PDF			
External audit		No	No	No	No	Yes (whole report)	No	No	No	No	No	No	
# of pages (last edition)		58	31	67	96	20	74	126	35	108			
Context		++	+	++	0	+	+	++	++	0			
Public policies		+	+	++	+	+	+	++	++	++			
Organization performance		+	+	+	0	+	++	+	+	++			
Outlook		+	0	+	+	0	++	+	+	+			
Organizational involvement		?	+	+	?	0	+	+	+	++			
Political involvement		?	+	++ Council debate	?	+	++ Council vote	++ Council debate	+	+			
Dissemination efforts		++ Events	+ Internet	+	?	0	++ Events, media	++ Events, media	++ Internet	0			
Organizational change Management		+	0	+	?	0	+	++	++	++			
Communication		+	0	0	0	+	+	+	+	++			
Current situation		Discontinued	To be continued	Discontinued; plan: integrated reporting	Discontinued	To be continued	To be continued with yearly reports	To be continued	Discontinued	To be continued			

Rating of content quality, level of involvement, and of perceived outcomes: ++ strong; + medium; 0 weak; with ? indicating insufficient evidence.

The analysis of content quality showed a mixed picture. Most reports addressed questions of *context*, *public policies*, *organizational performance* and *outlook* to some degree. In Zurich, switching from multi-year to annual reports brought reduced coverage of context and outlook issues. Freiburg's report stands out since it pays detailed attention to (select) *public policies* and *organizational performance* while lacking city-level outcome indicators, a *context* feature common to most sustainability reports. From one edition to another, reports usually discuss long-term trends through a set of indicators (ranging from 21 in Basel to over 100 in Nuremberg). In addition to such continuity in monitoring, Nuremberg's reports contain changing focus themes (e.g. 'education').

The exploration of reporting processes showed that in most cities report writing was led by staff units that engaged other departments in indicator selection and the drafting of narratives. In some cities, external stakeholders were also consulted in the design stage (e.g. universities in the case of Zurich, Dublin and Freiburg). Generally, draft reports then underwent a screening process by political decision makers such as members of the municipal executive. In some cities, finalized reports were discussed in the municipal council, evidencing *political involvement*. In this context, exclusivity plays a role – Freiburg stressed that its sustainability report, seemingly a stand-alone document, was actually highly integrated into the policy cycle because councillors received it as sole annex to the (biannual) budget. According to a politician (I.2) from Amsterdam:

If sustainability reporting is separate, we will discuss it separately in the council. When reviewing the annual report, somebody might have a question about sustainability but the discussion will be about finances. Thus, a separate report gets more attention.

Interestingly, Basel opted for the contrary when its local government recently decided to discontinue sustainability reporting and merge it with general reporting. According to a Basel political executive (I.5),

In our system, we have departmental reports but they remain at the bottom of the drawer [...]. This is why we decided [...] to join cyclical assessments, planning, general reporting and sustainability reporting in a four yearly rhythm. [...] Of course, the danger of integration is that the 'flying altitude' rises, with much more general, noncommittal accounts.

Contrary to practices elsewhere, Nuremberg's report did not undergo extensive internal vetting. In the words of a civil servant (I.13), 'These are the environmental department's analyses. Neither the mayor nor others ever objected. Our critical views are backed up by indicators nobody can simply refute.' Interestingly, reporting is thus used politically within the collegiate as part of debates between the economics and environmental departments.

For the *dissemination* of reports, all local governments recently used websites and social media. Usually this involves making reports available for download (with Dublin's not existing in print); only Zurich visualizes its data on a dedicated dashboard. Additional dissemination efforts varied significantly, as a civil servant (I.8) from Zurich explained:

For the first two reports, we did larger events [...], a media conference with councillors. We phased that out. Now our main motivation is actually an obligation – we can't just leave the website unattended. In 2013 we wanted to do a public event but it was difficult to get attention. Which is understandable from the media perspective. The news value is not so large.

Regarding outcomes, it appeared that even though none of the local governments explicitly started sustainability reporting with the aim to learn from the writing process, such effects were evident in all cities. Key informants frequently mentioned more inspiration, motivation, cooperation and improved data management systems triggered by the inter-departmental elaboration of indicator sets and narratives. According to one civil servant (I.13), 'It has been a lot of work to bring all indicators together but when we produced Nuremberg's first sustainability report it had a resounding effect in Germany. We printed 1000 copies which were gone in no time.'

Unsurprisingly, there is tentative evidence for a link between organizational involvement and organizational learning. Freiburg officials, for example, mentioned improved morale resulting from extensive staff consultations. However, such relationships appear to be non-linear. Several organizational benefits, for example, improved data management capacities and collegial contacts, were associated with the elaboration of a first report and not consecutive ones. Concerning outcomes in the sphere of management, stronger effects were observed in Amsterdam and Freiburg. In these cities, there is evidence of reports being actively used by decision makers. This appears to relate to the presence of two main content factors: targets and politically salient information. In Zurich, for example, politicians showed keen interest in a public perception survey (one of twenty-one sustainability indicators) as this reflects on voter opinions. However, a civil servant (I.8) also observed:

Setting targets is political. That needs to be backed up; we cannot do that as municipal administration. Even using a traffic light – we tried to discuss this in the steering group yet realised that this immediately leads to controversial discussions []. Our sustainability monitoring system is not the central management instrument of our city governments []. All departments have their own key indicators.

As for outcomes in the sphere of communication, most local governments lacked insights and relevant data (e.g. media statistics) about the reception of reports by external stakeholders. Only in Amsterdam, Dublin and Nuremberg there was anecdotal evidence of active resonance among local audiences such as newspapers, businesses, NGOs or universities. In Dublin, Nuremberg and Freiburg, reporting triggered contact requests from many other cities, nationally and internationally. There is no evidence that any reporting methods were directly emulated in other cities or organizations. Some local governments received public recognition for their reporting, for example, Nuremberg in the awarding of the German Sustainability Prize.

Concerning negative outcomes, several cities experienced frictions when civil servants perceived report writing as a burden. Critically, in some cities including Dublin and Zurich, key informants spoke of 'reporting fatigue'; positive effects associated with initial reports were perceived to wear out in the face of decreasing internal 'learning curves' or reduced public interest. In the words of a Dublin civil servant (I.16): 'One of the first things about the high frequency is that it ends up being a lot of work. Unfortunately, you end up repeating a lot of things. There's no new data. [...] There's definitely the idea of consultation fatigue.' Among the six local governments studied, four (Amsterdam, Basel, Dublin and Zurich) discontinued or substantially changed their sustainability reporting practices due to dissatisfaction with the approach taken hitherto. This suggests that designing a reporting system with continued use and usefulness is no easy chore.

Among early adopters, Nuremberg's strategy appeared most continuous. Its ostensibly successful strategy, within its particular context, is the elaboration of extensive, low-periodicity reports with a fixed indicator set yet changing focus themes. A Nuremberg politician (I.14) remarked: 'I am not a friend of yearly reporting because especially the big issues – air quality, education – don't change that quickly.'

At a macro level, Amsterdam's experience and decision to develop several sustainability-oriented planning and reporting instruments in parallel suggests that learning, management and communication – and associated internal and external audiences – require distinct strategies. This interpretation also fits Freiburg's approach: its highly complex sustainability report – initiated when accruals accounting and performance-oriented budgeting became compulsory for local governments in this part of Germany – implicitly targets councillors, not the public. In the words of a civil servant (I.10),

We have excellent sectoral reports that go into detail. Our sustainability report can't emulate this. [Its] contribution is to create an overall context [...] to stimulate ideas or to identify trade-offs and goal conflicts. For example, we all want to promote public transport and cycling, that's a declared aim but also requires using space and cutting some trees [...]. We don't have a red or green traffic light but want to show the municipal council its options for action.

Evidently, action orientation helps to increase salience of reports for specific target groups such as councillors. In this regard, political systems constitute an important contextual factor. As a politician from Dublin (I.17) remarked, 'In Ireland, the amount of competencies of local government are fairly small. So one could have a fairly incomplete picture if one only looked at the city council's own activities.'

Discussion and conclusion

In response to our research question – *how have sustainability reporting practices evolved in pioneering European local governments, and what are their effects* – this study covering six cities in four European countries showed that various types of reporting can be valuable for local governments as a learning, management and communication tool. Financial costs can be very limited; some local governments do not even print their reports and rely only on electronic dissemination. There is evidence of organizational benefits, for example, concerning increased staff motivation and data management capacities. This is noteworthy as internal changes were usually no explicit objective. This finding is in line with other studies, for example, the perception of sustainability reporting as a learning experience in universities (Ceulemans, Lozano, and Alonso-Almeida, 2015) and of voluntary yet publicized self-assessments stimulating sustainability policies among local governments (Niemann, Hoppe, and Coenen 2016). Organizational outcomes, however, tended to be strongest during the inception of sustainability reporting and to dissipate over time, while (continued) usefulness for management purposes and external communication appeared more difficult to achieve. Various local governments experienced 'reporting fatigue,' leading to the discontinuation or radical altering of sustainability reporting practices.

This study's findings tentatively suggest that meeting different information needs of different stakeholders requires smart strategies such as combining extensive, multi-

year reports with executive annual updates disseminated in various media. For some local governments studied, especially those producing stand-alone reports, the pursuit of public legitimacy is an explicit objective, corroborating prior studies (Marcuccio and Steccolini 2009). In some cities, this endeavour is relatively successful, with active dissemination efforts producing desired resonance (such as the launching of reports in public events). Various local governments, on the other hand, struggled to maintain public interest over time. This appears to relate to a lack of news value when repeated reports showed unchanged trends on descriptive indicators yet also to a lack of politically salient information. Most local governments meticulously vet narratives so as to accommodate diverging opinions. In one deviant case, the published report is more outspoken and used for ‘debates’ between executives. The space for such utilization appears to be influenced by political systems and cultures (cf. Alcaraz-Quiles, Navarro-Galera, and Ortiz-Rodríguez 2014), with cases in this study showing sub-national diversity in political embeddedness (cf. Fox 2015). Local governments tying sustainability to policy and budgetary cycles aim to inform management, and there is tentative evidence of this being effective. However, targeting internal decision makers has consequences for the design and writing style of relevant documents – as also asserted elsewhere (Cohen and Karatzimas 2015), sustainability reports geared towards managers are generally not attractive to citizens.

This suggests that sustainability reporting is no ‘magic tool’ simultaneously fulfilling communication and management functions; instead, attempts to reach all audiences with a single document are doomed to fail, ushering in ‘jackof all trades – master of none.’ Simply calling for integrated, high-frequency, high-complexity reporting is misguided as there are trade-offs between conciseness and completeness (cf. Perego, Kennedy, and Whiteman 2016). In the words of one NGO representative (I.12) interviewed:

If you have the ambition of achieving an integrated approach, you’ll quickly face unmanageable amounts of data and thick reports nobody reads. Or you’re describing in one chapter what you’re doing against soil sealing, and in another [...] the shortage of housing, as if the two were not related. Then you have some cities that simply decide to zoom in on focus areas but are rightly challenged too. The crux is solving this tension between comprehensive and focussed.

As a matter of fact, integration can refer to several dimensions including report types, contents and internal processes, and sustainability reporting requires making choices for each. At the same time, many national statistics offices are mounting sophisticated dashboards that individual local governments need not compete with in terms of disclosing macro indicators. The growth of interactive, electronically linked sustainability reporting formats leads to yet more diverse uses by wide-ranging audiences. Facing these developments and choices, there is high demand for guidance that current frameworks (e.g. GRI, IR) do not provide. The GRI’s focus on organizational performance without considering territorial outcomes is unsatisfactory for (local) governments. For them, the linking of policies and actions to territorial outcomes constitutes the ultimate management and accountability demand.

Against this backdrop, the framework developed in this study – revolving around the distinction of main *contents* (context, policies, performance and outlook), key *process* considerations (organizational involvement, political involvement,

Table 6. Positive local government reporting practices.

Dimension	Subdimension	Positive practices	Examples	Complexity
Content	Context	<ul style="list-style-type: none"> Indicator selection based on local priorities, documenting in report annex the relation ('comply or explain') to standardized sets (notably GRI, ISO 37120) Long time series discussion of trends Comparison of local scores to benchmarks (e.g. WHO air quality guidelines) and averages (similar cities) Identification and discussion of local government competences and spheres of influence Clear link (avoiding duplication) between sustainability reporting and other local government planning and reporting systems Analysis of choices for and impacts of decisions taken by local government in key policy areas 	<ul style="list-style-type: none"> Dublin; Freiburg 	<ul style="list-style-type: none"> Low
	Public policies	<ul style="list-style-type: none"> Long time series discussion of trends Comparison of local scores to benchmarks (e.g. WHO air quality guidelines) and averages (similar cities) Identification and discussion of local government competences and spheres of influence Clear link (avoiding duplication) between sustainability reporting and other local government planning and reporting systems Analysis of choices for and impacts of decisions taken by local government in key policy areas Long time series; trends Targets (short + long term) Benchmarking with similar cities Local agenda with short-term and long-term targets and commitments (by local government and other stakeholders) 	<ul style="list-style-type: none"> Various Zurich [2008]: matrix of influence Various Freiburg Various Amsterdam 	<ul style="list-style-type: none"> Low (provided local data available) Low Medium High Medium High
Processes	Organization performance	<ul style="list-style-type: none"> Local agenda with short-term and long-term targets and commitments (by local government and other stakeholders) 	<ul style="list-style-type: none"> Various 	<ul style="list-style-type: none"> Low
	Organizational involvement	<ul style="list-style-type: none"> Cross-departmental working groups for mutual learning Minimization of additional workload (e.g. through collaboration with universities) Smart periodicity (e.g. multi-year full reports plus shorter annual updates) to minimize fatigue Discussion, approval of reports in local government council 	<ul style="list-style-type: none"> Various 	<ul style="list-style-type: none"> Low
	Political involvement	<ul style="list-style-type: none"> Media + Internet events for various target groups Conscious timing of reporting (release) to maximize attention 	<ul style="list-style-type: none"> Various 	<ul style="list-style-type: none"> Low
	Dissemination efforts	<ul style="list-style-type: none"> Changing focus themes (in reports + accompanying events) Reports, visualizations and raw data on website 	<ul style="list-style-type: none"> Nuremberg Zurich 	<ul style="list-style-type: none"> Medium Medium

(Continued)



Table 6. (Continued).

Dimension	Subdimension	Positive practices	Examples	Complexity
Outcomes	Organizational change	<ul style="list-style-type: none"> • Self-evaluation (gains, suggestions for improvement) among report contributors and sample of staff • Self-evaluation (uses, suggestions for improvement) among decision makers 	<ul style="list-style-type: none"> • Various (including Basel Freiburg) 	• Medium
	Management			
	Communication	<ul style="list-style-type: none"> • Tracking of media references, downloads, etc. • Solicitation of feedback from citizens/report users on website • Sharing of experiences with other cities 		

Table 7. Hypotheses for further research.

Factor	Hypotheses	Relevant case
Context	<ul style="list-style-type: none"> • In consensus-oriented political systems, the room for sustainability reports to contain political analyses and targets is limited • The longer the term of councils or budgets, the lower the advantages of frequent reporting • Demands for outcome-oriented budgeting create opportunities to use sustainability indicators for management purposes • More limited municipal competences increase the demand for distinct sustainability reports addressing outcomes in the city-at-large 	<ul style="list-style-type: none"> • Zurich, Basel, compared to Nuremberg • Freiburg • Freiburg • Dublin
Content, reporting features	<ul style="list-style-type: none"> • The inclusion of performance indicators and targets is associated with increased instrumental/management use • Over time, mere trend reporting based on descriptive indicators leads to decreasing interest from internal and external audiences • Frequent, high content reporting with limited news value leads to internal 'fatigue' and decreased external interest • Comprehensive, high content reporting integrating financial information is ineffective as external communication tool 	<ul style="list-style-type: none"> • Amsterdam, Freiburg • Zurich • Dublin, Zurich • Amsterdam
Process	<ul style="list-style-type: none"> • Organizational involvement (e.g. collectively defining goals and indicators) increases organisational learning • The simultaneous yet exclusive launch of reports with governmental plans and budgets increases management use 	<ul style="list-style-type: none"> • Zurich, Freiburg, Nuremberg • Freiburg

dissemination) and three *outcome* clusters (organizational change, management and communication) – is valuable for multiple audiences.

For practitioners, the framework is a point of departure to initiate or redesign sustainability reporting successfully. While the presence of trade-offs and our analysis of a small while diverse set of front runners makes searching generalizable 'best practices' inappropriate, this study uncovered many 'good practices' that practitioners elsewhere will find inspiring. Table 6 identifies such practices in relation to our research framework and case studies. The tentative rating of complexity (low/medium /high) serves to indicate ease of replicability. The selection of context indicators and compilation of relevant data, for example, is relatively straightforward and constitutes a recommendable practice for any city initiating sustainably reporting. Political target-setting and impact assessments of governmental decisions, on the other hand, are complex and require more skills and resources.

Regarding *outcomes*, Table 6 contains the implicit recommendation for sustainability reporters to self-evaluate. Simple satisfaction surveys among report contributors and the monitoring of download statistics, for example, produce important feedback at hardly any cost. Researching the utilization of reports by various audiences is more complex yet may interest a local university, as happened in Basel. For policymakers – including those contemplating mandatory municipal sustainability reporting as in France, or subsidized voluntary reporting as in parts of Germany (LUBW 2015) – the framework and evidence produced by this study will give guidance about policy objectives and local government needs.

For researchers, the theoretical framework and major design choices identified in this article – such as periodicity, information types, process arrangements – suggest

major lines of enquiry. In terms of sustainability reporting, we posit that the focus on disclosure as main research paradigm has had its day, and that more utilization- and impact-oriented studies are urgently needed. There is potential for increased mutual learning with the adjacent fields of performance management (see e.g. Navarro Galera, Rodriguez, and López Hernández 2008) and city-oriented sustainability monitoring (see e.g. Tanguay et al. 2010). Table 7 lists a set of hypotheses derived from this explorative study to inform further research.

In light of preliminary evidence that sustainability reporting by local governments can be beneficial at limited costs and risks, we conclude by calling for perseverant yet reflective experimentation. As a civil servant from Dublin (I.16) put it:

You have to say on the first day: We're going to do five years of sustainability reporting and then evaluate. Just to create that expectation. Because it's very hard to do a good job the first time. You have to learn the lesson.

Acknowledgements

We sincerely appreciate the open sharing of data and thoughts by all interviewed practitioners, institutional support provided by VNG International (The Hague), and feedback on the manuscript from anonymous reviewers and Larry J. O'Toole.

Disclosure statement

No potential conflict of interest was reported by the authors.

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