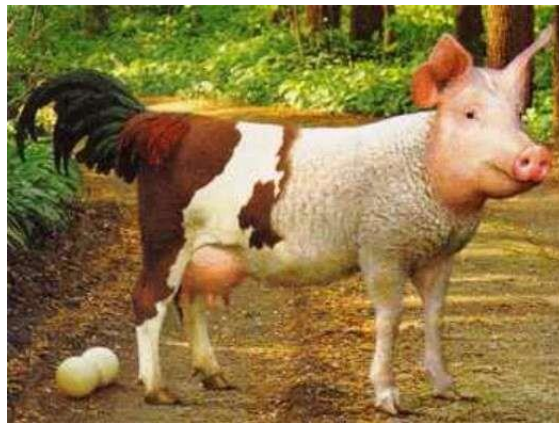

SUSTAINABILITY REPORTING BY CITIES – A MAGIC INSTRUMENT? LESSONS FROM SIX EUROPEAN PIONEERS



The “egg-laying wool-milk-sow”

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Master of Public Management

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1. Introduction

1.1. Subject of research

“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

“There are plenty of competing guidelines and vision documents and political pressures and issues not controlled by a city government. However, to track in the background how things are developing, even if it's not us who can influence them, that is the point why sustainability reports are important.” Civil Servant, City of Nuremberg

Report – an off-putting word. For many people at least, the term conjures the image of having to produce or read tedious, technical accounts, or, considering another meaning, of denunciation when someone is reported to the police. Sustainability, and its equivalents in other languages, generally is a positive buzzword yet its overuse is liable to lead to ‘sustainability fatigue’ too. In Scandinavia, the term is reportedly losing public and policy interest, with ‘wellbeing’ on the rise (Rinne, Lyytimäki, and Kautto 2012). Moreover, sustainability is about the need to balance needs of ‘people and planet’, and for many observers this entails calling for pluralistic, participatory and complexity-informed governance (Bond et al. 2011; Pintér et al. 2012). Reports, by contrast, are part and parcel of conventional performance management ideas that have been promoted in the tradition of ‘New Public Management’; they are part of today’s ‘audit explosion’ (Power 2005) that is accused of stifling innovation, learning and motivation. Scholars warn of ‘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 un-sustainability” (Milne and Gray 2013, 13).

This sceptical view, to some extent a tongue-in-cheek rant, rubs against strong enthusiasm in other quarters. Empirically, it appears that ever more local governments across the world produce sustainability reports. Some municipalities (i.e. city governments) have voluntarily been writing sustainability reports for over 10 years. In France, this has become a legal obligation for cities with more than 50,000 inhabitants, and the European Union (EU) is pushing for more “non-financial reports” in all types of public organisations. International policy frameworks such as the United Nations ‘Sustainable Development Goals’ (SDGs) call for increased reporting by all types of institutions. Media coverage, too, tends to be emphatic. Referring to the positive experience of Amsterdam, Chicago, Rio de Janeiro amongst other cities, one article claims that “a commitment to sustainability reporting is a vital step towards creating vibrant cities” (Ballantine 2014, 4). Here, sustainability reporting is portrayed as an effective, multi-purpose, globally applicable strategy. In

analogy to “magic concepts” such as accountability and governance that are popular in public management (Pollitt and Hupe 2011), sustainability reporting appears to be something Germans might call an “egg-laying, woollen, milky sow”: a magic, “Swiss army knife”, desirable “jack of all trades” tool.

The apparent tension with competing claims of ‘greenwashing’ and conversely ‘vibrant’ local governments raises several general questions of relevance for public management.

- How do local governments actually engage in sustainability reporting? Do they follow a standardised or tailor-made formats?
- What is the evidence of reporting effects, including positive and negative ones?
- Perhaps most importantly, is it appropriate to draw generalised lessons, or does sustainability reporting produce different effects depending on local contexts and the type of reporting?

The academic literature contains rather few responses. There is evidence that previous attempts to introduce standardised reporting formats – e.g. by the Global Reporting Initiative (GRI) – have failed to catch on in the public sector. Some studies have looked at the prevalence and motives for producing certain types of reports but actual effects are generally under-researched. Not surprisingly, many articles close with the plea for further work in this field.

In the face of high demand for guidance from practitioners, public management research appears very expedient. This is where the present study aims to make a contribution. In order to complement prior studies, an evaluative and an evolutionary lens appears especially useful. It is time to explore what various types of sustainability reporting achieve in local governments that have applied it over longer periods of time. This is the essence of this study. It presents an evaluation framework that is used to distil lessons about sustainability reporting based on the multi-year experiences of six pioneering local governments from four European countries: Amsterdam (Netherlands), Basel and Zurich (Switzerland), Dublin (Ireland), Freiburg and Nuremberg (Germany).

1.2. Research objectives

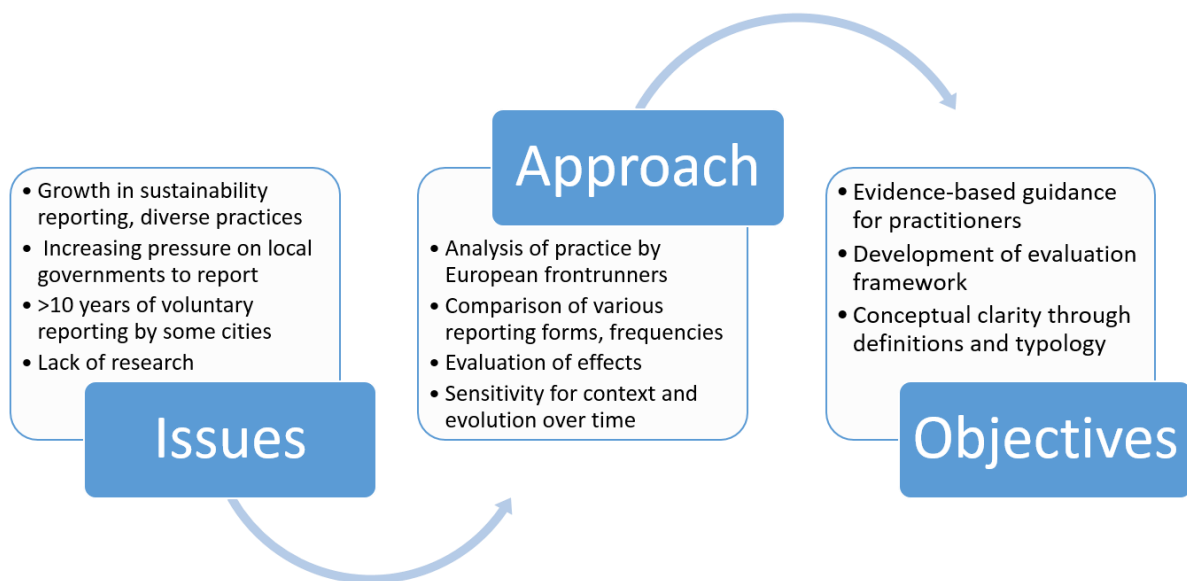
This research sets out to reflect on sustainability reporting among pioneering European local governments in order to distil lessons that can inform public management theory and practice. The primary purpose thus is to critically appraise the use, strengths and weaknesses of various forms of reporting, paying attention to local governments’ use over time.

This objective requires an appropriate evaluation framework; hence, developing such a model that may also inform theory and be of use for future studies, constitutes the secondary purpose of this research. Any closer look at the subject matter immediately reveals that the term “sustainability reporting” actually embraces a diversity of practices – from stand-alone sustainability reports issued

annually, to stand-alone reports issued at multi-year intervals, to the integration of sustainability considerations into other type of documents (such as annual reports). To avoid confusion, any research needs to begin with providing clarity through appropriate definitions and descriptions. Consequently, the tertiary purpose of this research is to contribute to conceptual clarity by offering a typology of strategies concerning sustainability reporting.

This document is structured in reverse order: The analysis begins with the tertiary purpose of definitions and typologies in order to create a basis for the development of an evaluation framework, the secondary purpose. This serves as foundation to work on the primary purpose of drawing lessons from practical experiences. Figure 1 summarises the research rationale.

Figure 1: Research issues, approach and objectives



1.3. Relevance

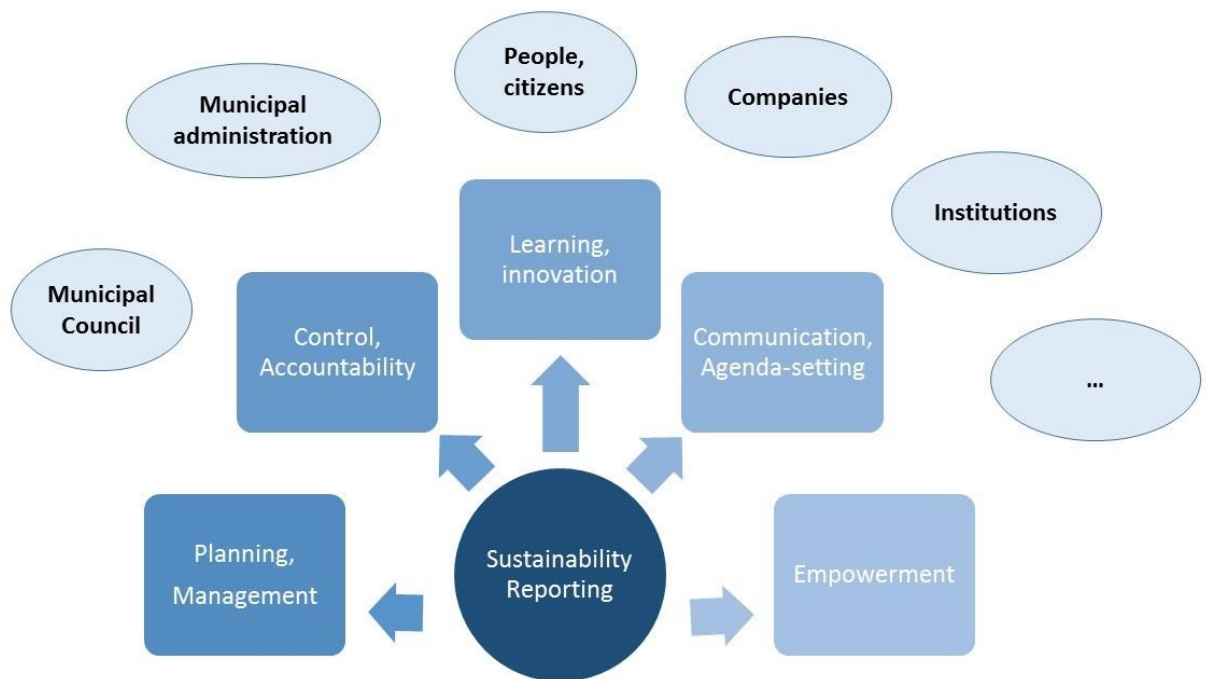
Judging from what mayors write in prefaces, local governments produce sustainability reports in order to pursue manifold, ambitious objectives. The following statements from Augsburg, Wijk bij Duurstede, and Freiburg illustrate this point:

- “Augsburg’s first sustainability report fulfils several functions: It explains in clear and exemplary form, what policy-makers, the municipal administration, civil society institutions, companies and individual citizens have so far achieved in implementing sustainability programmes, and it contributes to making Augsburg’s sustainable development a topic of discussion (*information and communication*). At the same time, it shows us where there are gaps and needs for action (*control and planning*). Both, what has been achieved and what needs to be done, drive us to further engagement (*motivation*)”
(Augsburg, Germany, 2010, translated from German, italics added)

- “This report is meant to increase awareness and to inspire and *stimulate inhabitants and companies* to engage with sustainability” (Wijk bij Duurstede, The Netherlands, 2014, translated from Dutch, italics added)
- “I am pleased that this sustainability report, presented to the municipal council and the public, serves in conjunctions with the municipal budget as an *important management instrument* for sustainable urban development” (Freiburg im Breisgau, Germany, 2014; translated from German, italics added)

Surely, if pioneering cities manage to achieve these declared aims through their sustainability reporting, it is highly expedient to spread knowledge of this powerful tool so that others may reap similar benefits. The following graph (Fig 2) summarises objectives that are frequently mentioned in prefaces of municipal sustainability reports.

Figure 2: Common, self-declared objectives

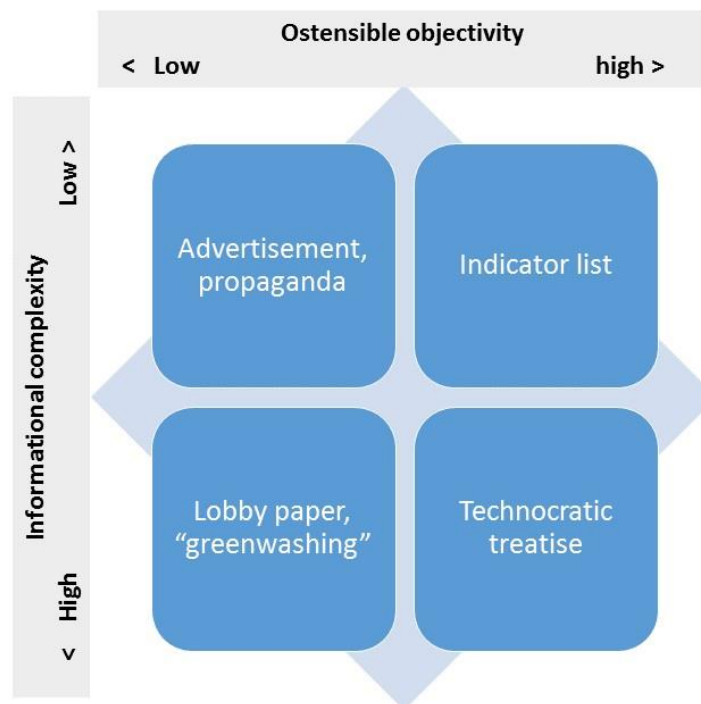


On the other hand, reporting requires resources. Many municipal sustainability reports (including Augsburg’s and Freiburg’s) contain more than 100 pages, which is a testament to the investment of significant staff time. An efficient use of (public) resources is an ethical mandate. In this regard, evaluations are needed in order to establish whether reporting leads to the achievements of declared objectives. Moreover, a reporting exercise may also cause negative, unintended or at least contested effects. Consider the following excerpts taken from the sustainability reports of Dublin and Incheon.

- “The accomplishments described in this report are a testament to our efforts to make Dublin a better place to live, work, and visit” (Dublin, Ireland, 2013)
- “Attracting the Best Green Field Investment in Korea: Incheon Metropolitan City has actively promoted foreign direct investments, focusing on Free Economic Zone, to bring the local economy alive and contribute to raising job creation numbers. Instead of stock investments or M&As, the city has sought to attract Green Field Investment and building factories and businesses, through the direct purchase of lots” (Incheon, South Korea, 2012)

Dublin and Incheon allude to the promotion of city visits and of greenfield factory construction, respectively, and these are likely to be contested aims. Further, there are hardly any sustainability reports that do not speak of “highlights” and “success stories”, putting the municipal administration into a positive light, and thus evidently representing a tool with political uses. This may inspire some people but not others, just as the prevalence of glossy images and slogans. Similarly, the presentation of detailed data may attract the attention of specialists while failing to produce any understanding in general audiences. Common sense suggests that sustainability reporting can fail in uncountable ways. Borrowing the phrase that ecological indicators stand between the “two fires of science and policy” (Turnhout, Hisschemöller, and Eijsackers 2007), one may postulate that local government sustainability reporting is surrounded by hazards. “Political propaganda”, “a lobby note”, and conversely an “indicator list” or a “technical treatise”, are four potential accusations if one just considers shortcomings with regards to informational value and ostensible objectivity (cf Figure 3); considering other dimensions one can imagine yet more potential “fires”.

Figure 3: Four potential hazards for city sustainability reports



To sum up, sustainability reporting may offer significant benefits for local governments and local sustainability agendas but is unlikely to be a silver bullet. Presumably, there are some generalisable lessons – for example, if a lack of clarity in writing can be labelled as “bad practice” – while other factors are more dependent on local (socio-political) conditions. Context-sensitive public management research into this matter thus is a timely endeavour.

1.4. Research questions

The ultimate ambition of this research is to learn about the use, i.e. value of various forms of sustainability reporting by local governments. The scarcity of prior research necessitates a search for potential effects, and this study makes a start by focusing on positive effects, framed as achievements. This does not preclude the possibility of discovering negative effects but makes this research more manageable than the alternative of a fully open search for any type of intended or unintended, positive or negative effect. Moreover, the focus on value allows managing an additional amount of variance – contrary to most studies that analyse municipalities within a single country and thus a relatively more homogenous context, this research seeks to broaden the study object by comparing cities in various countries. Thus, this study is structured around the pursuit of the following main research question:

What is the value of sustainability reporting by local governments?

The following four sub-questions are intended to guide the research and structure the conclusion

- 1) **What do pioneering European local governments achieve through sustainability reporting?**
- 2) **How have sustainability reporting systems evolved in European cities that count as pioneers?**
- 3) **Which factors explain the relative effectiveness of various sustainability reporting strategies?**
- 4) **What lessons can be drawn from the experience of pioneers?**

1.5. Reading guide

This study is structured as follows. After this introduction, Chapter 2 entitled “Knowledge on municipal sustainability reporting”, contains a review of the literature including studies and typologies. Chapter 3 (“Research design and methodology”) describes the choice of frameworks and methods applied to select and study a number of European local governments. Chapter 4 (“Results”) presents key empirical findings. The final chapter 5 (“Conclusion”) contains responses to the research

questions, puts findings in relation to existing bodies of knowledge, and contains suggestions for further investigations and recommendations for practitioners.

Figure 4: Structure of this document



In terms of terminology, “city”, “local government” and “municipality” deserve a clarification. “City” is primarily a geographical term referring to a large, urban town. City governments and their administrative area of control are often called “municipalities” but this is not universally so; some countries do not use the term while some also have rural municipalities devoid of cities. The more generic term “local government” is universally applicable but may also describe other levels standing hierarchically above and below municipalities. For this reason, all three terms are frequently used and cannot be reduced without losing specificity; only in select contexts they are interchangeable, e.g. when referring to the general object of this study as “city / municipal / local government sustainability reports”.

2. Knowledge on sustainability reporting

2.1. Introduction

In the face of growing evidence for adverse climate change induced by human societies (Pachauri et al. 2014), most scientists, global policy makers and citizens in many countries share the view that the world has a collective problem of unsustainability. The recent launch of the UN's "Sustainable Development Goals" is evidence of some global consensus yet, in the words of an eminent public management researcher, it "is widely recognized that a formal decision to pursue a given policy is merely an early chapter, rather than the conclusion in the winding, twisting story of what eventually happens on the ground" (Pollitt 2015, 184). Pollitt therefore calls for public management research to focus on policy implementation, thus responding to the "huge demand for high-quality information about what is working when, for whom and in what contexts" (2015: 184).

A basic tenet of public administration is that public management arrangements can make the difference between success and failure of public policies (Meier and O'Toole 2002). For sustainability, it has been observed that the concept has "saturated the modern world" yet "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)

In response to this call for proper engagement, the following sections review relevant literature from various fields (cf Figure 5) including sustainability as policy framework (2.2), sustainability reporting in the private (2.3) and public sector (2.4), reporting standards (2.5), public sector accountability and performance management (2.6), and evaluation research (2.7).

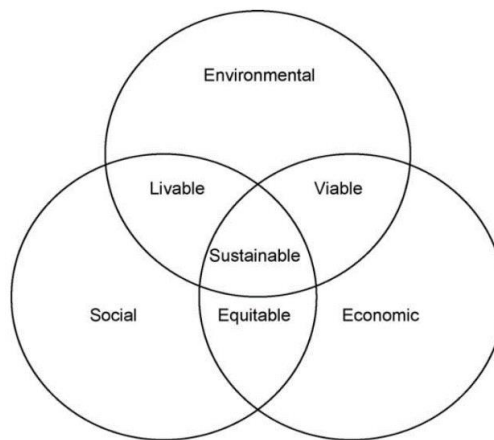
Figure 5: Relevant research disciplines



2.2. Sustainability as policy framework

In 1987, the *World Commission on Environment and Development* proposed a definition of sustainable development that continues to be widely shared to date (Tanguay et al. 2010): “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”. A general agreement has emerged about the following key aspects of the term: Balancing well-being with environmental constraints, considering social, economic and ecological factors simultaneously. To communicate this, it has become popular to refer to the “triple bottom line” of balancing environmental, social and economic needs (cf Figure 6).

Figure 6: Classic dimensions of sustainable development



This general agreement notwithstanding, there are differences beneath the surface. One major distinction involves the concept of strong and weak sustainability (Mayer 2008). The former emphasizes planetary boundaries and that ecological functions cannot be replaced through technology. Weak sustainability, on the other hand, allows for cost–benefit analyses and trade-offs between environmental, social and economic benefits. Whether one pursues one or the other (emphasising sustainability and conservation, or development and change) is influenced by one’s political convictions and short vs long-term perspectives. Further, the analysis of humanitarian needs in a given geographical context and considerations of equity certainly play a role too (Niemann 2015).

In the global strive for sustainable development, the Rio conference (1992) represented a milestone. In the following years, under the label “Agenda 21”, sustainability concepts diffused across countries and administrative levels, often facilitated by national government-driven policy programmes (Coenen 2008) yet also as a response to voluntary action by local governments. Across Europe, more than 2600 local governments have committed themselves to sustainability policies by signing up to the Aalborg Charter launched in 1994 (Grönholm 2014). In recognition of the importance of local governments in the light of increasing urbanisation, one of the UN’s 17 Sustainable Development Goals is dedicated to cities - Goal #11 is to “make cities and urban settlements safe, resilient, inclusive

and sustainable”. According to the Secretary General of the United Nations, “Our Struggle for Global Sustainability Will Be Won or Lost in Cities”, proclaimed (United Nations 2012), and this sentiment is widely shared in view of the tremendous socio-economic impact of cities and further urbanisation underway.

City governments (i.e. municipalities) are important because of the growth of urban areas yet also because of their unique role and competencies in local governance settings – they typically “have direct control over energy consumption and waste production, via land-use regulation, transportation planning, community design, and building code regulation; have been enacting sustainable development policies for decades; can facilitate external action by lobbying senior government and developing meaningful partnerships beyond government as well as small-scale demonstration projects; and have experience addressing other environmental issues” (Holden and Larsen 2015, 2). Most municipalities also have a say on public services in the field of health and education, and have economic power through their own procurement, the employment of staff, and the ownership of real estate.

Many municipalities make active use of their potential as “sustainability brokers” and voluntarily commit to ambitious targets – in times of climate change, cities are said to have turned “from passive implementers to active co-decision makers” (Kern and Mol 2013). The UN’s Agenda 21, Global Compact or the “Compact of Mayors” are examples of international initiatives that capitalise on local engagement. Evidently, there can be many motives at play beyond an altruistic strive to maintain the “global commons”. Cities are also keen to strengthen their credentials as being “green” and “smart” in an attempt to gain a “competitive edge in the global knowledge economy” (Yigitcanlar and Lönnqvist 2013).

2.3. Private sector reporting

According to standard dictionary definitions, a sustainability report is “an organizational report that gives information about economic, environmental, social and governance performance”. The concept of sustainability reporting originated in the corporate sector. In the late 1980s, chemical companies with reputation problems and some environmental front-runners started to issue environmental reports; many then broadened the scope and integrated environmental and social issues to what became “corporate social responsibility” (CSR) reports and eventually “sustainability reports”. This practice is now commonplace - among the world’s 250 largest companies, over 90% produce (annual) sustainability reports, and many medium-sized companies issue them too (van der Esch and Steurer 2014). As the concept of sustainability has gained wider acceptance, sustainability reports are now more common than CSR or other types of non-financial reports. More recent is the proposition to merge (annual) sustainability reports with (annual) financial reports into so-called “integrated reports”.

Proponents (cf, www.integratedreporting.org) herald this approach as the best way to increase the relevance of sustainability information for decision-makers. To maintain readability, attention is focused on most important, so-called material issues (with the auditing term of “materiality” designating relevance), with consequently less space available for discussions of the general context, cross-connections, weak signals, etc. Until now, only few companies are producing such integrated reports; in 2010, 14 % of the initiatives registered in the GRI’s publicly available Sustainability Disclosure Database was self-declared as “integrated” (Bartocci and Picciaia 2013). Further, some scholar criticise the limited perspective and “capture” of the subject by the accounting profession (Flower 2015). According to Dumay, Guthrie, and Farneti (2010, 535), “it seems to be recognized that accounting at an organizational level does not address the wider implications of sustainability from a global or ecosystems perspective”. Gray warns that “any simple assessment of the relationship between a single organisation and planetary sustainability is virtually impossible. The relationships and interrelationships are simply too complex [...]. So whatever else organisational ‘accounts of sustainability’ are, they are probably not accounts of sustainability (Gray 2010, 48).

What is the purpose of sustainability reports? Companies produce them for various reasons. Most prominently cited (cf van der Esch & Steurer 2014), are the wish

- to increase legitimacy, i.e. to maintain a social “license to operate”, and a positive image among customers, regulators, the public and other stakeholders
- to inform stakeholders on management decisions and the business model
- to boost employee morale and to attract staff caring about sustainability

Explanations of sustainability reporting often refer to legitimacy. Through reporting, companies can increase their reputation but may conversely be accused of producing sustainability reports for window-dressing or “greenwashing” when organisational activities that superficially improve sustainability are put into the limelight while the core business is not addressed. Legitimacy theory has high face validity. On the other hand, “once it is realized that legitimacy plays a role, the incremental value of looking further for a broad brushstrokes notion of legitimacy falls rapidly. This is not to devalue legitimacy as a concept however, rather it is to suggest the need for the concept of legitimacy to take on nuance” (Unerman and Chapman 2014, 390). Research has shown that companies that publish sustainability reports tend to perform well economically (e.g, Hahn & Kühnen 2013). This may be due to learning triggered by the reporting in the firm itself or to customers consciously or unconsciously valuing the reports (Hong and Liskovich 2014).

Research in the corporate sector is facilitated by the fact companies are a priori selective in their communications. As long as “integrated reporting” remains uncommon, sustainability (or CSR) reporting can relatively easily be distinguished from other official communications such as financial

statements and conventional annual reports. This also explains why many guidelines that are widely accepted in the corporate sector – notably the standards of the Global Reporting Initiative (GRI) – frame sustainability reporting as “information disclosure” (Schaltegger, Bennett, and Burritt 2006), a term that has much less face validity in the public sector.

2.4. Public sector reporting

Especially in the public sector, there is wide spectrum with “a variety of reporting practices appearing to exist under the umbrella of sustainability reporting” (Dickinson et al. quoted by Plawitzki 2010, 13). After all, the English gerund “sustainability reporting” has two major meanings: One is the production and publication of distinct sustainability reports but more generally, reporting can also refer to the release or sharing of sustainability relevant data. For example, when a municipality puts data on sustainability indicators onto its website or uploads them into a national database it could be said to engage in ‘sustainability reporting’.

Why should public agencies engage in sustainability reporting? The following benefits have been proposed (Lamprinidi and Kubo 2008):

- Helps the public understand what public agencies do and their sustainability performance.
- Improves engagement with stakeholders.
- Promotes public trust.
- Makes it easier for public agencies to demand sustainability reporting from the private sector.
- Cuts workload by reducing the number of requests for information from the public.

At the same time, a number of practical issues have been put forward to explain why the majority of public agencies are not producing sustainability reports (Joas et al. 2014; Lamprinidi and Kubo 2008).

- Lack of knowledge of all types of sustainability-related tools
- Workload due to existing mandatory reporting
- Confusion about the use of an appropriate framework

The following factors have been identified as promoting reporting (Lamprinidi and Kubo 2008):

- Needing to demonstrate efforts to address climate change and other sustainability issues.
- An increasing interest and demand in transparency and accountability.
- Explaining the agency’s performance to stakeholders.
- Displaying leadership in the sector.
- The existence of sustainability reporting ‘champions’ who want to promote sustainability reporting and share the benefits they have experienced.
- Sustainability reporting can be consolidated with existing reporting requirements.

A consensual statement found in all types of studies and reviews (Hahn and Kühnen 2013; van der Esch and Steurer 2014) is that research is still in its infancy. Only few studies have been carried out so far on municipalities, with a regional focus on Australia, Italy and Spain. Table 1 summarises key findings from major empirical studies of recent years (ordered by year of publication).

Table 1: Empirical studies of sustainability reporting by local governments

Reference	Study object	Method	Findings
Marcuccio and Steccolini 2005	Italian local authorities	<ul style="list-style-type: none"> 12 local authorities in one Italian region; interviews 	<ul style="list-style-type: none"> Growth in reporting is “management fashion” Reporting can be a tool for appearing innovative, progressive
Marcuccio and Steccolini 2009	Italian local authorities	<ul style="list-style-type: none"> Social Reports of 15 Italian local authorities 	<ul style="list-style-type: none"> No standard set of factors can explain the differences in disclosure practices Major driver: seeking of legitimacy
Farneti and Guthrie 2009	Australian public sector organisations	<ul style="list-style-type: none"> Sample of 7 organisations; interviews 	<ul style="list-style-type: none"> Major driver: seeking of legitimacy
Plawitzki 2010	German municipalities	<ul style="list-style-type: none"> Prevalence of reports Six case studies 	<ul style="list-style-type: none"> 80 German local governments have produced one or more reports with varying sophistication Municipalities use reports for management, some also for communication
Williams, Wilmshurst, & Clift, 2011	Australian local governments	<ul style="list-style-type: none"> Mail survey among local governments 	<ul style="list-style-type: none"> Half of respondents report on at least one sustainability domain 40% of non-reporters indicate willingness to report in future
Greco, Sciulli, and D’onza 2012	Italian and Australian councils	<ul style="list-style-type: none"> Five local councils in each country Interviews with managers and accountants 	<ul style="list-style-type: none"> Councils have large discretion about what to report and show various legitimacy behaviours Some differences between countries can be explained as cultural
Goswami and Lodhia 2014	Australian councils	<ul style="list-style-type: none"> Four case studies, content analysis of annual reports 	<ul style="list-style-type: none"> None of studied councils had stand-alone reports but many reported on sustainability issues in annual reports Need for a holistic, contextual reporting framework addressing local issues
Alcaraz-Quiles, et. al, 2014	Major towns in Spain	<ul style="list-style-type: none"> Disclosure of GRI indicators on websites (55 towns) Regression analysis on 13 factors 	<ul style="list-style-type: none"> Disclosure is driven by individual interests of managers and policy makers
Navarro Galera et. al, 2014	European local governments	<ul style="list-style-type: none"> Disclosure Content analysis of websites of 33 major European cities 	<ul style="list-style-type: none"> Local governments are reasonably transparent No significant link between degree of disclosure and indicators of development and financial health

There is evidence – broadly in line with legitimacy and stakeholder theory – that local governments (in the Italian sample studied) generally have institutional and political motives such as the wish to be granted some ‘trendy label’ and the adoption of sustainability self-reporting has been judged as a

mimic of managerial manners (Marcuccio and Steccolini 2005). By voluntarily undergoing scrutiny local governments “signal virtue” (Gugerty 2009) that they commit themselves to shared norms and values regarding a given reform process. Local public managers feel increasingly judged upon their capabilities to achieve pre-determined targets, increase performance based on performance indicators and behave entrepreneurially.

The overview (Table 1) further illustrates that some studies explore the country-wide prevalence of municipal sustainability reports (Plawitzki 2010) while others approach the same subject matter by doing a content analysis of websites, probing for sustainability indicators appearing in any place (Alcaraz-Quiles, Navarro-Galera, and Ortiz-Rodríguez 2014). Each approach leads to different conclusions – when assessing the existence of distinct 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 mere disclosure of sustainability-relevant information is studied, scholars report compliance in large number of local governments (Navarro Galera et al. 2014; Williams, Wilmshurst, and Clift 2011). Both approaches face difficulties: Assessing the prevalence of sustainability reports is challenging insofar that sustainability relevant information may appear in any document, and documents that meet the criteria of being a sustainability report may be given a different, perhaps idiosyncratic title such as “City X – Progress Account”. There are no reliable registries of reports as public sector sustainability reporting remains largely voluntary; France is the first major country to make it compulsory (for municipalities with more than 50,000 inhabitants; cf. Commissariat Général au Développement Durable 2012).

The alternative of operationalising reporting as mere “disclosure”, studying the presence of indicators through content analyses has become the dominant empirical research method in the social and environmental reporting field (Marcuccio and Steccolini 2009). However, this approach starts to lose explanatory power, especially at the level of local governments. After all, in the times of Open Data legislation, many public organisations including municipalities constantly disclose and release information that is “integrated” in countless ways. In many countries, local governments publish numerous official documents and reports every year (e.g. spatial development plans, environmental reports, social assessments, project evaluations, policy papers). In this context of abundant information availability – which is not universal but increasingly the case in European cities – assessing disclosure is facing ceiling effects and dodging the question of purpose and functions. Instead, it is compelling that the “focus of research should be less on the performance information as such, on better performance information, or on the technicalities of performance information, but on the people using it and the organisation within which they are using it.” (Van de Walle and Van Dooren 2010, 51). To date, there are yet little knowledge on the actual use of sustainability reporting by public sector organisations.

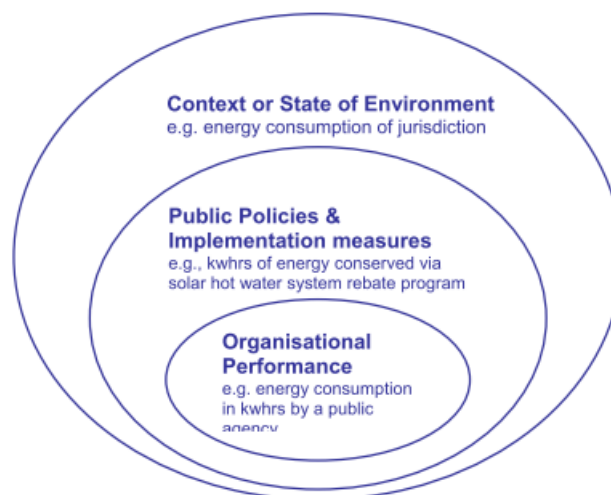
One of the few relevant studies was written in 2010 about the situation in Germany (Plawitzki 2010). This research unearthed 80 sustainability reports (as stand-alone documents) written by various municipalities since 2000, analysed their length and quality and carried out interviews with officials. In six case studies (selected with the purpose of maximum variance), municipalities aimed to use reports for management and decision-making (and some as transparency and communication tools) and this was partially achieved. However, the author concludes that sustainability reporting alone is not sufficient but needs to be embedded into an integrated sustainability management system.

2.5. Reporting typologies and standards

To facilitate and increase the quality of sustainability reporting, several international institutions have developed guidelines; the Global Reporting Initiative (GRI) is most prominent in this field; its standards – GRI-4 being the latest – have been widely adopted in the private sector (Dumay, Guthrie, and Farneti 2010). GRI has also made efforts to promote sustainability reporting in the public sector; in 2005, it released a pilot version of a supplement dedicated to public agencies, and in 2010 a specific document for government agencies. However, GRI no longer promotes the public sector supplement and just shares it on request as its suitability for public organisations has become unclear.

In both documents the GRI (Global Reporting Initiative 2010) proposes to distinguish three types of information that reports by public and governmental agencies can include (cf Figure 7): Organizational performance, Public policies and implementation measures, and the context or state of environment.

Figure 7: Types of information in public sector sustainability reports



For governments, the fact of labelling a document a report conveys the notion of an official record; such a document carries more weight than a personal statement by a politician or civil servant. Therefore, local governments (just as other organisations) usually have protocols to manage internal approval processes but once published there are no formal rules on dissemination and storage. These days, governmental reports no longer need to be printed and some are only issued electronically.

The study on reporting by German municipalities (Plawitzki 2010) and an unpublished concept paper from Leuphana University (Hübner and Plawitzki 2013) proposes the following typology of municipal sustainability reports:

1. Reports of sustainability-related activities
2. Sustainability reports of limited scope and level of analysis
3. Sustainability reports with substantial scope and level of analysis
4. Integrated reports that systematically analyse both sustainability and financial indicators

The authors assert (based on an empirical study of German municipalities) that type 1 are most prevalent, types 2 and 3 rare but existing, while type 4 represents a yet unattained aspiration (Hübner and Plawitzki 2013). Further, according to this typology there is a hierarchy of efforts (type 1: least, type 4: most work) and in parallel of potential effectiveness (type 1: least relevant for decision-making, type 4: most relevant). The implicit argument in favour of the superiority of integrated reports is shared by other researchers (Bartocci and Picciaia 2013) and the accountancy profession (Hoffman 2012). However, while the hierarchy of efforts is plausible, one can question whether integrated reports are necessarily more effective. Some scepticism is warranted about integration of financial and non-financial information as this necessitates reducing the scope of a report – for the sake of manageability, the IIRC recommends restricting a report to issues of high “materiality” (International Integrated Reporting Council 2008).

Moreover, making complex calculations for intangible aspects which are not easily quantified, e.g. by joining non-financial and financial information through so-called “monetisation” methodologies such as “Social Return on Investment” (Cabinet Office 2009; Millar and Hall 2013), may increase salience for decision-makers while simultaneously decreasing its communicative value. The transition of many countries from cash-based reporting systems to more complex and informative ones based on accrual accounting facilitates more integrated and outcome-oriented reporting but may not increase citizens’ understanding of public finance issues after all (Cohen and Karatzimas 2014). One risk of introducing complex statistics for issues of democratic governance is increasing the wedge between experts and non-experts, thus alienating the public and not leading to a strengthening of accountability but paradoxically a decrease in public trust – this phenomenon has also been labelled as “tyranny of light” (Pollitt 2011; Tsoukas 1997). It thus appears premature to declare integrated reporting as superior but necessary for research to consider additional conceptual and theoretical frameworks in order to understand the effectiveness of reports.

2.6. Public sector performance management

External reporting is one core feature – along with the introduction or improvement of performance measurement systems, accruals accounting, and management control – in many reform processes of the recent decades, specifically those inspired by so-called ‘New Public Management’ ideas (Marcuccio and Steccolini 2009). The focus on external reports has also been fuelled by much increased attention – from practitioners and researchers – to the concept of 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).

Further, the international and city-oriented sustainability agenda has always been a ‘measurement agenda’. Many efforts are invested into identifying, measuring and tracking trends, threats and progress, and this generally involves the use of indicators. These are variables that tell something about a larger picture. For example, just as body temperature is important in the analysis of human health, a region’s “gross domestic product” (GDP) is considered as a vital sign of economic health. Indicators are attractive as they allow to structure and summarize complex issues, and this is especially true for something as all-encompassing as sustainable development. They are designed to support decision-making, help to assess the impact of policies and actions, and to communicate to diverse audiences.

Indicators come in different disguises and can have multiple uses. Views diverge on whether indicators should necessarily be underpinned by a causal model (Lehtonen 2015). One typology proposes to distinguish between descriptive, performance and composite indicators: Descriptive indicators assess important aspects of the state of a system (for example, the environment) without specifying policy interpretations. Performance indicators are about inputs, processes, outputs, outcomes, effectiveness or efficiency and comparisons against a standard or target, implying agency and influence of someone in that system. A composite indicator, or index, aggregates a series of individual indicators in order to capture the richness of a multidimensional concept (Lehtonen 2015). Each type of indicator (use) is associated with distinct advantages and limitations.

A challenge for public management research is the fact that sustainability reporting may be built around either type of indicator or a combination of these. Some documents labelled “sustainability reports” are little more than tables with (local) data and trends concerning a set of typical sustainability indicators. Here, indicators are used descriptively, explaining why many people consider “sustainability reporting” as synonymous with “sustainability monitoring”. At the same time, many reports also incorporate indices and composite indicators which have informational value and help to assess overall trends while masking the contribution of individual factors. Finally, local governments (just as other types of public sector organisations) make increasing use of performance indicators (in the disguise of targets, rankings, etc). This has been a central tenet of New Public Management yet

also pertains to reforms of other ideologies and continues to grow across Europe (Pollitt and Dan 2013). Several European countries are leaning towards compulsory benchmarking projects for local governments (Kuhlmann and Jäkel 2013). In line with these trends, performance indicators start to be a standard ingredient of all types of municipal plans and reports and appear – presumably in response to perceived accountability demands and to foster legitimacy by referring to “evidence of performance” – in sustainability reports too.

For performance indicators, the risk of distortions is well documented (Pollitt 2013). According to Pollitt, the tying with incentives and sanctions requires a careful balancing act: “If there is no coupling, or only a very faint connection, then performance targets may not have much effect on behaviour. If, on the other hand, the connection is drawn very tight, so that everybody knows that heads will fall in the event of a missed target, then gaming and cheating behaviours are likely to flourish” (Pollitt 2013, 358).

Descriptive indicator use is less prone to “gaming behaviour” yet a narrow focus on indicators also entails dangers such as shifting attention to those issues that can be measured more readily. The *International Standardisation Organisation*, for example, recently issued a norm (ISO 37120) about “Sustainable Development of Communities” (ISO 2014) that invites all the world’s cities to count – as one of 46 “core indicators” – its number of firefighters. Cities can be certified for having appropriate databases in place, with Dubai receiving a “platinum designation”. The promotion of international frameworks such as ISO 37120 rests on the assumption that standardised indicator sets are helpful (local governments are spared much conceptual work) and necessary for benchmarking; the second point is evident – idiosyncratic indicators in each place render comparisons difficult, and there is some evidence that standardised indicators avoid “cherry-picking” behaviour that may occur when local government just report on those indicators that suit them (Goswami and Lodhia 2014). However, standardisation brings about a number of distinct challenges as it “tars everybody with the same brush”, downplaying differences in context and sustainability concerns, tends to favour indicators with the lowest common denominator (in terms of data availability), etc. It also deserves mentioning that standardisation is a challenging task; even indicators with ostensibly high universality such as “number of teachers” are subject to difficult, sometimes context-dependent definitions with arbitrary cut-off criteria (M. S. Fox 2013). For sustainability monitoring, various scholars argue for a middle way combining common and customised indicators (Moreno Pires, Fidélis, and Ramos 2014; van Zeijl-Rozema, Ferraguto, and Caratti 2011) yet how this plays out in sustainability reporting has remained largely unexplored so far.

Further, while information on air quality and unemployment rates may always be important when formulating overall goals and strategies, they do not tell decision-makers what to do. Only some common sustainability issues – e.g. treatment of household waste – relate to a clearly defined governmental service (Keirstead and Leach 2008). By contrast, most outcome indicators depend on

numerous factors and actors and tend not to change quickly from one year to another. In the case of unemployment, a high-level indicator in many sustainability-monitoring systems, local governments are understandably hesitant to commit to targets and it is extremely difficult to prove that any changes are the impact of local actions (instead of national policies or the global economy). In the public and non-profit sector, the measurement of “impact” (defined as substantial change) is useful in some situations but a waste of resources in others (Ebrahim and Rangan 2010). Overall, results-based management tends to work better when applied to clearly identifiable issues (e.g. health interventions delivering easily observable outputs and outcomes) than in governance-related settings (McGee and Gaventa 2011). It has also been proposed that culture is important – in some countries, competition is more likely to be seen as the normal answer to performance problems while others pursue hierarchist or egalitarian ideas (Hood 2012) – yet these hypotheses are rarely put to test.

2.7. Evaluation research

Many efforts concerning sustainability monitoring are devoted to methodological questions of “sound science”; Holman (Holman 2009) labelled this the “building a better mousetrap” tradition. The underlying assumption is that more information on more sophisticated indicators improves decision-making, governance, and ultimately sustainable development. Such optimism is evident when the launching of new indicator sets (such as ISO 37120) is touted as a “game changer” (Ballantine 2014), though this may of course also be a marketing strategy not to be taken literally.

Surely, not all practitioners are anxiously awaiting new tools but some may be rather sceptical instead. In the public management literature, “grand statements about the importance of performance information for democracy sit alongside extensive if patchy evidence that ministers, legislators and citizens rarely make use of the volumes of performance information now thrust upon them” (Pollitt 2006, 43). In the context of sustainability-related tools, many (European) local governments have made previous attempts of using indicators that were less successful and eventually aborted (Joas et al. 2014).

According to some scholars, disappointment about a perceived lack of indicator “impacts” is attributable to naïve expectations: “In policy-making environments, a linear thinking of direct, instrumental policy use of indicators is simply not acknowledging the complexity of decision-making, and the inherent discursiveness of policymaking. Not acknowledging the richness of indicator uses leads to much of the unnecessary frustration at the level of indicator developers, who might desperately seek for direct signs of policy impacts of their work” (Bauler 2012, 40).

In response, the governance and “politics of policy indicators” has received more attention in recent years (Sébastien and Bauler 2013). Further, in “rather direct opposition to this rather naively optimistic view of the emancipatory and empowering capacity of indicators, alternative and highly critical readings have emerged, highlighting the potentially dysfunctional and roles of indicators in reinforcing the prevailing asymmetries of power” (Lehtonen, Sébastien, and Bauler 2016, 1). Some authors also propose

distinguishing use, non-use and misuse (Lyytimäki et al. 2013) – evidence of misuse is rare but non-use certainly an important issue for all initiatives relying on voluntary participation and reporting.

For assessments of indicator use and influence, frameworks developed for studying the utilization of research and evaluation are informative (Hezri and Dovers 2006). One frequently used framework is a basic typology of evaluation uses developed by Weiss and other researchers since the 1980s. It commonly distinguishes instrumental, conceptual and political or symbolic uses; since the 1990s, discussion arose about process uses of evaluation, putting the emphasis on the effect of participating in the process of the evaluation during its conduct rather than findings. Instrumental use refers to situations wherein there is a direct link or linear relationship between indicators and decision outcomes. Conceptual use refers to indirect and long-term effects stemming from the absorption of new information. Political use – sometimes also described as symbolic or tactical – is essentially about the management of perceptions (Rinne, Lyytimäki, and Kautto 2012). Distinctions between these three main types are not clear-cut. “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. Process use tells how evaluation’s influence arose” (Weiss, Murphy-Graham, and Birkeland 2005, 14). As such, process-related use of information pertains to another level, as it is not linked unequivocally to the output of the information process. In evaluation research, the following five different types of process use have been identified (Forss, Rebien, and Carlsson 2002): Learning to learn, Developing networks, Extending communication, Strengthening the project, Boosting morale.

At least two further factors deserve consideration in studies of evaluations, indicators, reports and knowledge products in general: influence and context. Much research has focused on determining utilization (by target groups, in the media etc) and this is valuable but not sufficient; it has been argued that “use of indicators does not automatically imply influence — and influence does not always require use” (Lehtonen, Sébastien, and Bauler 2016, 4). Whereas the very concept of use connotes intentionality and awareness, influence can be result from numerous, latent and manifest pathways – which are notoriously difficult to pin down but deserve looking for.

Context, in a similar vein, is a difficult but necessary dimension. “Context matters so much, in a range of ways, that there is no general evaluation model that can be applied across all contexts” (McGee and Gaventa 2011, 383:19). In the case of sustainability tools, calling for context-sensitivity often implies consideration of geographical differences between cities, countries and political systems. Authors of a recent research overview argue that “research and practical work on indicators has thus far excessively focused on the instrumental functions of indicators as malleable governance ‘tools’, without due attention to the politico-institutional context, and that research work should instead seek to examine the operation of indicators within their broader context, including both the characteristics of indicator

users and producers, and the political framework conditions shaping and being shaped by indicators” (Lehtonen, Sébastien, and Bauler 2016, 2).

Another dimension of context are local conditions and ways, within the same politico-institutional system, accompanying the introduction of sustainability policies. A recent meta-analysis of social accountability mechanisms has produced evidence that what appear to be identical tools (e.g. participatory monitoring councils and social audits) can be effective or ineffective depending on how they are embedded into other local policies; thus only “the subnational comparative method can reveal patterns of variation that otherwise would be hidden by homogenizing national averages (J. A. Fox 2015, 356). This would suggest that sustainability reporting too may play out differently – even among neighbouring municipalities operating in the same political system – depending on whether it is used “tactically” (bounded, information-focused) or “strategically” (cross-linked, aiming at enabling environment, etc).

Finally, complexity-informed research calls for modesty – in a review of evaluation methods for sustainability transitions it has been argued that “caution is advised with regard to the interpretation of ‘impact’” because “change processes occurring within socio-technical systems are not linear: causes are multiple and produce effects at variable time intervals, there is no relation between the size of cause and effect” (Bussels, Happaerts, and Bruyninckx 2013, 8). Evaluation studies need to acknowledge their limitations but are nonetheless essential in order to advance the understanding of partial connections and potential causalities.

3. Research design and methodology

3.1. Introduction

Sustainability reporting by local governments is a growing but yet limited practice and an under-researched phenomenon. As set out in the introduction (section 1), this study seeks to contribute to public management research by empirically exploring and comparing the experiences of a sample of European cities. For this purpose, the following sections explain a typology of reporting strategies (3.2), the analytical framework (3.3), the case selection (3.4), and research methods (3.5) used in this study.

3.2. Typology of reporting strategies

Point of departure for this research is the typology of municipal sustainability reports presented above (Hübner and Plawitzki 2013, cf. section 2.5) that distinguishes 1) unsystematic, sustainability-related activity reports, 2) sustainability reports of limited scope, 3) sustainability reports of substantial scope, and 4) sustainability reports with substantial scope and the integration of financial aspects. This typology helps to distinguish various levels of sophistication yet evidently the scope and ‘depth’ of reports is not their only characteristic. The discussion about integration (cf section 2.5; International Integrated Reporting Council 2008) entails that reporting can take various forms, with stand-alone sustainability reports and “integrated reports” representing a major design choice. Another important factor that is currently not conceptualised or studied in the academic literature but evident from empirical observations is periodicity: While some municipalities produce annual reports, several German cities appear to release sustainability reports at multi-year intervals (Plawitzki 2010).

Combining these major dimensions of scope, format and periodicity leads to the following model (Table 2) with the proposed distinction of five reporting strategies:

Table 2: Strategies for sustainability reporting by local governments

		General reports		Dedicated sustainability reports	
Consideration of sustainability	<i>Un-systematic</i>	Strategy 1 Marginal	Some sustainability indicators in general reports	Strategy 2 Elementary	Partial coverage
	<i>Systematic</i>	Strategy 5 Integrated	General (annual / financial) reports with sustainability framework	Strategy 3 Periodic	Multi-year
				Strategy 4 Frequent	yearly

In this model, incidental reporting with just a cursory consideration of sustainability, perhaps by including some sustainability indicators in a multi-topic, annual report, is described as “Strategy 1 /

marginal”. Producing a dedicated sustainability report with a partial consideration of sustainability – e.g. by focusing on just the environmental domain – amounts to “Strategy 2 / elementary”. This is the case, for example, when environmental or social reports or one-off assessments are written to inform a local sustainability agenda or strategic plan. Presumably, a large number of municipal sustainability reports can be considered as falling into this category.

When local governments produce dedicated sustainability reports based on a systematic methodology with a broad consideration of sustainability including various domains, two strategies are evident: More comprehensive, in-depth reports at longer intervals (“Strategy 3: Periodic”) or frequent (yearly) reports that are likely to be more executive to be manageable (“Strategy 4: Frequent”).

When local governments systematically include sustainability considerations into other, multi-topic reports, this corresponds to (“Strategy 5: Integrated”). A general, multi-topic report written by a local government is likely to pertain to its overall planning and reporting system. In many countries, there are legal requirements for annual reports. Hence, “integrated reporting” (Strategy 5) will need to fit into this overall framework, limiting the need and space for local governments to develop particular reporting frequencies.

Importantly, these strategies are not mutually exclusive; conceivably a local government may produce an “elementary” stand-alone sustainability report (Strategy 2) while simultaneously attempting to integrate some sustainability considerations into its annual report (Strategy 1).

The distinction between “systematic” and “unsystematic” reporting is not clear-cut. For the purpose of this research, it is operationalised by probing the presence of information on “context“, “public policies“, “organisational performance“ (i.e. the three major components proposed the Global Reporting Initiative; cf Figure 7 in 2.5), and “outlook” proposed by the IR framework (International Integrated Reporting Council 2008). Table 3 summarises the ensuing four components indicating systematic sustainability reporting by local governments.

Table 3: Components indicating systematic sustainability reporting

Sustainability reporting: Components	Scope, scale	Time-frame
1. CONTEXT: Local sustainability issues	<ul style="list-style-type: none"> • Municipality at large • Descriptive indicators, e.g.CO₂ emissions within jurisdiction • Where useful: intra-city and regional perspective, benchmarks 	<ul style="list-style-type: none"> • As recent as available • Desirable: Long time series
2. PUBLIC POLICIES: Local government action	<ul style="list-style-type: none"> • Policies and investments under local government control • Desirable: performance indicators, analysis of impact of decisions 	<ul style="list-style-type: none"> • Reporting period
3. ORGANISATIONAL PERFORMANCE	<ul style="list-style-type: none"> • Municipal organisation (real estate, staff, energy use, etc.) • Descriptive and performance indicators, e.g.CO₂ emissions of municipal buildings / vehicles • Where useful: comparisons, benchmarks 	<ul style="list-style-type: none"> • As recent as available • Desirable: Long time series

4. OUTLOOK	<ul style="list-style-type: none"> • Upcoming plans and decisions • Desirable: Local sustainability agenda and targets 	<ul style="list-style-type: none"> • Near future or longer-term
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In this definition, systematic sustainability reporting thus

- addresses broad aspects of sustainability, e.g. by applying the popular distinction of environmental, social and economic domains (this excludes so-called sustainability reports considering just environmental aspects)
- addresses sustainability in the city / territory at large as well as performance of the municipal organisation (this excludes reports that are just focused on one sphere)
- presents data as well as explanation of trends (this excludes sustainability reports that are mere indicator datasheets)
- describes governmental actions with a view to address effectiveness (this excludes sustainability reports that are mere activity reports or “success stories”)

3.3. Analytical framework

Building on research models used in previous studies – in particularly regarding the use of sustainability indicators (Bauler 2012; Lehtonen, Sébastien, and Bauler 2016) – it seems expedient to define “use and influence” of municipal sustainability reports (and reporting strategies) as major outcome (dependent) variable of this study. Table 4 summarises key concepts.

Table 4: Uses and influences of sustainability reporting

Type of reporting use and influence	Outcomes	Associated terms	Typical target groups
Process	Knowledge, micro / design decisions, coalitions, motivation	Social learning, Networking	Civil servants, other stakeholders engaged in reporting
Instrumental	Decisions	Management	Civil servants Executives Council
Conceptual	Ideas	Learning	Civil servants Councillors General public, NGOs
Political-symbolic	Justification for action or no-action	Communication, Legitimacy, Accountability, Agenda-setting	Council Public Media

Methodologically, this entailed probing for process use as well as use and influence in

- instrumental ways (Key question: Has reporting affected decision-making, management?)
- conceptual ways (Key question: Has reporting influenced learning, communications, etc?)

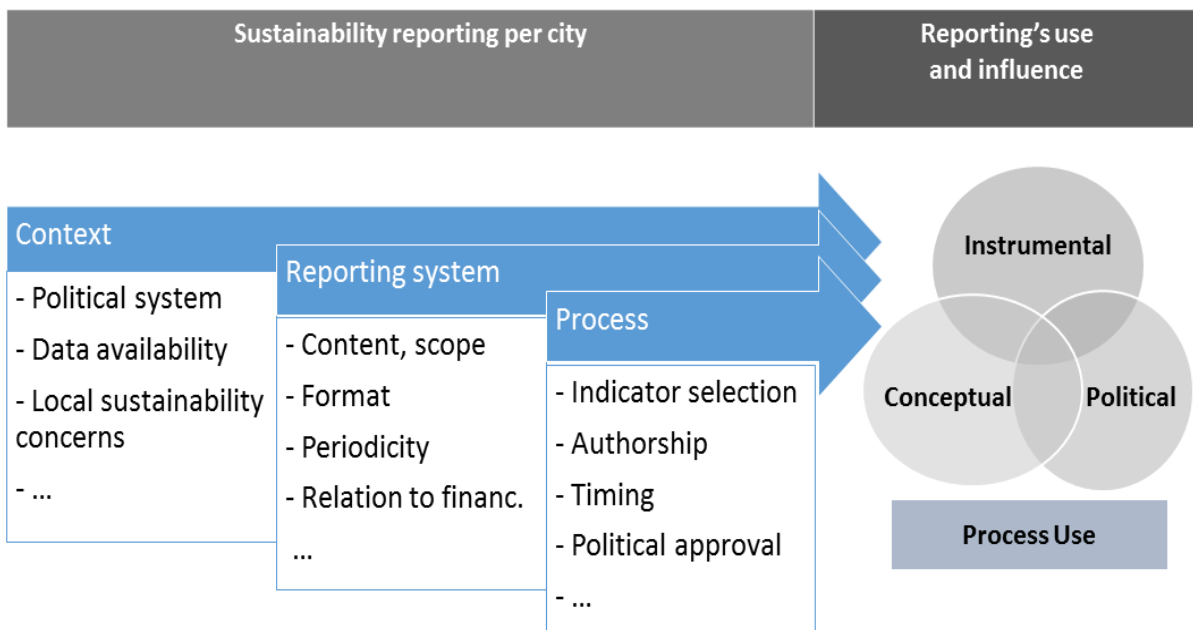
- political-symbolic ways (Key question: Has reporting been used to garner legitimacy for action, inaction, agenda-setting etc)?

All types of use and influence are closely related (cf section 2.7). As for causal mechanisms, extant literature (Hübner and Plawitzki 2013; Lamprinidi and Kubo 2008; Marcuccio and Steccolini 2009) and additional brainstorming suggest a number of factors (identified as independent variables) may influence the effects of sustainability reporting. These include the

- A) context (political system, data availability, concurrent reports, etc)
- B) characteristics of a reporting system (content, scope, indicator origin, indicator type and use including descriptive, performance-oriented, and composite)
- C) process dimensions (authorship, timing of a report’s release, political approval processes, etc)

Combining these three “independent variables” with the four type of use and influence introduced above results in the analytical, evaluative framework illustrated in Figure 8.

Figure 8: Evaluative framework



3.4. Case selection

Sustainability reporting by local governments is yet a limited phenomenon. Long-term observers relate that some countries experienced a first ‘wave’ of municipal sustainability reports around the turn of the millennium, as part of the Agenda 21 movement (Eckerberg, Coenen, and Lafferty 1999) that later lost momentum; the current growth thus represents a second wave. Hence, while the vast majority of local governments has never (consciously) engaged in sustainability reporting, some have nascent

experiences while a very small number has either initiated and then changed or started and then maintained the practice. However, a few local governments have over 10 years of experience in sustainability reporting.

The purpose of this study is to explore and learn from real world reporting practices. This motivates identifying, describing and evaluating various reporting systems. The literature review and proposed typology of reporting strategies (cf Table 2) points to scope / sophistication, format and periodicity as major design choices. Especially the observation that some cities issue reports at multi-year intervals thus asks for a longitudinal research perspective, which is also useful to detect the influence of managerial fashion (Marcuccio and Steccolini 2005) and to detect changes in (process) use over time.

Following this rationale, this study focuses on the long-term experiences of frontrunners which is an established methodology in research of innovative governance developments (Jänicke 2005). The target group for this research are local governments that have – at some stage in their recent history – engaged in systematic sustainability reporting and count on multi-year reporting experiences.

For the exploration of reporting forms and types, diversity is enriching, and studying the practice of local governments in numerous settings desirable. Sensitivity for different socio-political contexts and changes in time, however, requires restricting the number of cases under study and an emphasis on depth rather than width. To satisfy both demands within the scope of limited resources, the present study employed a strategy of purposeful sampling (Yin 2013).

In a two-step process, potential cases were identified first by applying the following selection criteria:

- Local governments (in cities) with systematic reporting (in typology outlined above: evidence of strategies 3, 4 or 5)
- Geographical focus: Europe
- Medium-sized to large city (150,000 to 1.5 Mio inhabitants)

Potential cases were identified by consulting registries, academic articles, the ‘grey literature’ of non-academic publications and speaking to key informants such as representatives of the Global Reporting Initiative (GRI) and researchers. The Global Reporting Initiative’s (GRI) publicly accessible registry (<http://database.globalreporting.org>) is estimated to harbour information on about half of all eligible reports, i.e. perhaps just as many similar reports exist but are not registered (GRI representative, personal communication, 7 April 2015). A search for “public agency” reports yields about 450 results, most of which concern reports of public sector companies. There are some 50 references to municipalities worldwide. Many more cities write sustainability reports without recurring to the GRI but using their own methodologies. An unknown yet certainly small number has integrated sustainability considerations systematically into other types of documents – in the GRI’s database, the Australian cities of Melbourne and Gold Coast are two examples of municipalities that use the GRI’s

framework as a basis for their general, annual reports. Further, the Swiss cantons of Basel-Land and Sankt-Gallen were identified as examples of cases developing sophisticated ways of integrating sustainability into general planning and reporting schemes. However, neither these cantons nor Australian municipalities were eligible for being primarily rural, non-city local governments and from outside Europe, respectively.

For the study to remain manageable, it was decided to include up to two cases from up to four countries, giving preference to municipalities developing distinct reporting strategies and frequencies in order to increase the variance of whole sample. From among roughly 15 “candidate cities” identified as municipal, European, medium-sized pioneers in sustainability reporting (cf Annex 7.1 for an overview), the following six municipalities were selected for case studies: Amsterdam (Netherlands), Basel and Zurich (Switzerland), Dublin (Ireland), Freiburg and Nuremberg (Germany). Links to relevant websites are presented in Annex 7.2.

3.5. Research methods

For the research of the variables identified in the analytical framework, the sources of information presented in Table 5 appeared as most appropriate and relevant.

Table 5: Main source of information and analysis of case studies

	Variables	Main source of information + analysis
Independent	A. Context (political system, etc)	Literature review; interviews with key informants
	B. Characteristics of the reporting system	Document analysis; interviews with key informants
	C. Reporting process	Interviews with key informants
Dependent	D. Process use	Interviews with key informants
	E. Instrumental use and influence	Interviews with key informants
	F. Conceptual use and influence	Interviews with key informants
	G. Political-symbolic use and influence	Interviews with key informants; references in media, etc

The description of the reporting system (B) is the only variable for which a document analysis is the main information source. With reference to the typical components of systematic reporting (cf Table 3), each discernible reporting strategy in of the selected cities was rated as “substantial”, “moderate”, “limited” or “absent”.

For the remaining variables, this study needed to apply primarily qualitative research methods based on the analysis of documents and the holding of interviews with key informants. To explore the history, functioning, context and effects of the sustainability reporting strategies developed in each city, the main source of information were semi-structured interviews based on interview guidelines (cf Annex 7.3) designed to capture main aspects of the analytical framework. In order to maximise the diversity of opinions and to minimise the risk of biases and knowledge gaps, interviews were planned with three types of informants in each city:

- 1) A civil servant involved in the production of sustainability reports
- 2) An elected politician (mayor or city councillor)
- 3) A person with knowledge but from outside category 1) or 2), for example an academic, NGO representative, or consultant

As explained above, various uses and influences are closely related and impossible to disentangle in neat terms – if civil servants and politicians recall having collaborated successfully in the reporting process and decided to redesign certain key indicators, for example, this may indicate process use as well as conceptual and a certain kind of instrumental use and influence.

Bearing these caveats in mind, in each city each discernible reporting strategy (comprising one or more reports compiled in a similar way) was analysed concerning the strength of effects regarding variables D-G. If the totality of qualitative findings (from interviews and documents) produced no relevant information – for example because current key informants had no recollection of a reporting process dating years ago – this was marked with a question mark (?). If key informants or written material suggest that a type of effects (e.g. instrumental use) was absent or very small, this was marked with a “0”. Moderate effects were marked with a “+”, and strong effects with ++. Table 6 summarises these four indicative ratings. It is important to note that a given reporting strategy may not be designed to achieve different types of effects and that this rating therefore does not imply a value judgement of overall effectiveness of the strategy.

Table 6: Strength of effects

Strength of effects (aggregating interview material and document analysis)	Rating
No information	?
Small or absent	0
Moderate	+
Strong	++

Operationally, selected local governments were contacted by telephone to inform them about the research and invited to participate by suggesting suitable informants. All six affirmed their interest and

provided names of civil servants willing to be interviewed. In some cases, local government staff also suggested interviewees from the categories of elected politicians and external stakeholders; in others, suitable informants were searched independently.

In preparation of the interview, informants received the interview guidelines and were asked whether they preferred for their responses to be treated confidentially and would agree to being cited.

With the addition of one interview held with a representative of the Global Reporting Initiative, a total of 19 interviews (each lasting 30 to 90 minutes) with 21 informants were held, 13 during personal visits and 6 by telephone. All interviews were tape-recorded and main parts transcribed. For interviews held in German and Dutch, key statements were translated into English. A list of interviewees is presented in Annex 7.4 (For confidentiality requested by some key informants, this list is not part of the publicly accessible version of this document yet available on request).

Sustainability reporting documents were retrieved from publicly accessible databases – in all cases except for Amsterdam, municipalities displayed the (majority of their previous) sustainability reports on their own website; in the case of the Dutch capital, older reports were obtained from the GRI database. In some cases, additional (and internal, non-public) documents were obtained from informants.

4. Results: Case study findings and patterns

4.1. Introduction

The selected case studies – six European municipalities from four different countries – each have their “own story to tell” – sustainability reporting developed at different times, for different reasons, taking a different course, having different effects, in different contexts. This section presents research findings in the following way

- Case by case presentation of each of the 6 cities (4.2.1.- 4.2.6.)
- Effects of context factors (4.3.)
- Effects of reporting system characteristics (4.4)
- Effects of process factors (4.5)

4.2. Case studies

In accordance with the analytical framework (section 3.3) and research methods (3.4) outlined above, sustainability reporting in each city was analysed concerning seven major variables. For the information in this section to be manageable and holistic, each case study narrative treats instrumental, conceptual and political uses and influence in one paragraph.

Zurich, Basel, Amsterdam, Nuremberg, Dublin and Freiburg – this is a chronological ordering corresponding to the first appearance of dedicated sustainability reports in these cities between 2001 and 2014.

4.2.1. Zurich

A) Context

The city of Zurich – the largest in Switzerland – has approximately 400,500 inhabitants, within an urban agglomeration of 1.3 million. The city is capital of a canton of the same name. Administratively, the city is a municipality, the lowest unit in the political organization of Switzerland that has considerable freedom of choice and autonomy. In the Swiss system, referred to as “direct democracy”, the electorate chooses political office-bearers and decides by plebiscite on legislative proposals. Popular elections for the municipal council (parliament, legislature, 125 members) as well as the City Council (the executive, 9 members) take place every four years. The City Council (*Stadtrat*) comprises the mayor and operates as a collegiate authority; in the current set-up, six of the nine councillors pertain to left-leaning parties.

Since the late 1990, the municipality of Zurich has pursued various projects and programmes under the banner of Agenda 21 and sustainability. Following a legislative proposal approved by plebiscite in 2008, the “2000-watt society” is one of Zurich’s official sustainability aims; it stipulates reducing by

2050 the per capita overall average continuous energy usage to no more than 2,000 watts (48 kilowatt-hours per day) per person, from a current average that is 3-4 times higher. This is the legal mandate for various municipal projects in the fields of energy, construction, mobility and consumption. A strategic plan called «Zurich 2035 strategies» gives orientation to the long-term policies of the city and contains the vision of developing Zurich into a sustainable metropolis.

In Switzerland, sustainable development is also enshrined in the federal constitution. The federal government has developed a policy framework (“Monet”, with 75 indicators) for various sustainability dimensions. In an exceptionally coherent fashion (Dahl 2012), this is supplemented with subnational policy and monitoring frameworks. In particular, the Federal Office for Spatial Development (ARE) provides a platform tracking municipal sustainability processes (with factsheets on currently 239 out of 2353 Swiss municipalities) and facilitates a voluntary sustainability benchmarking system for cantons and cities (“Cercle Indicateurs”; www.cercleindicateurs.bfs.admin.ch).

B) Characteristics of the reporting system

As the first city in Switzerland, Zurich wrote its first Sustainability Report in 2004, followed by a second edition in 2008, and a third edition in 2012. Whereas the first two editions were conventional, written reports (in print and PDF), the 2012 edition appeared on an online platform. This dashboard (www.nachhaltigkeitsmonitoring.ch) contains data – on a core set of 21 indicators maintained in all reports – as well as short responses to the question “what does the municipality do”, comparative statistics with other Swiss cities (with references to “Cercle Indicators”), and links to other municipal projects and documents. Since 2012, this information is updated annually, with a “summary report” (2013, 2014) available for download as PDF in German and English. This document also contains a foreword by the mayor (council president).

Zurich’s 21 sustainability indicators are primarily used descriptively and have been selected (in consultation with Cercle-Indicators) by a steering team of municipal departments. They also feature in Zurich’s “Statistical Yearbook”. The 2012 shift to an online platform suggests describing Zurich’s sustainability reporting system in terms of two phases – quadrennial sustainability *reporting* in 2004 and 2008, and annual sustainability *monitoring* since 2012.

Type of reporting	Frequency	Content, indicator use	Length, format	Rating of components (substantial – absent)	
Dedicated sustainability report (Strategy: <i>Periodic</i>)	Every 4 years (2004, 2008), changed	<ul style="list-style-type: none"> 21 indicators, descriptive trends, municipal actions, benchmarks, trade-offs 	58 pages (2008), printed + PDF	Context:	Substantial
				Public Policies:	Limited
				Org. Performance	Limited
				Outlook:	Limited

Web site with “ monitoring report ” (Strategy: <i>Frequent</i>)	Since 2012: yearly updates (2013, 2014)	<ul style="list-style-type: none"> • 21 indicators, descriptive • municipal actions 	Web site + PDF summary (31 pages for 2014)	Context:	Moderate
				Public Policies:	Limited
				Org. Performance	Limited
				Outlook:	Absent

C) Reporting process

Zurich developed its first report following a joint conceptual work with the Swiss Federal Institute of Technology (ETH). The first report in 2004 contained data in time series going back to 1985 for some of the 21 indicators. According to the “Sustainability monitoring in the City of Zurich - English Summary 2014”, sustainability reporting and monitoring is underpinned by the following ideas:

- "Sustainability is Zurich's primary objective in terms of urban policy. The city has set itself far-reaching targets in important areas as far as sustainable development is concerned"
- The City of Zurich “has thus defined 21 indicators which it considers important with a view to sustainable development and which are to be pursued over time. Where possible, these indicators illustrate the development achieved over the past 20 years”

The municipality's office for urban development coordinates reporting. Staff indicate that various sectoral departments participate in the drafting of narratives and prior to the publication of reports, the draft is screened by all relevant departments in order to ensure that external communications are coherent and consensual.

As for the launching of reports, municipal staff relate that the municipality has decreased its promotion efforts in response to an observed decrease in public interest:

Civil Servant: „For the first two reports we did larger events, inviting a lot of people, with a panel discussion, a media conference with councillors. This is something we phased out, actually. Now for us the main motivation is actually an obligation – we can't just leave the website unattended.

We didn't even communicate the last update to the media. In 2013 we wanted to do a public event but it was difficult to get attention for this. Which is understandable from the media perspective. The news value is not so large.

Zurich's current reporting system is directed at various audiences – decision-makers as well as the public:

Sustainability monitoring in the City of Zurich - English Summary 2014: “Sustainability monitoring enables decision-makers in politics and administration as well as interested members of the public to take stock of where we are. It is clear however that monitoring of this kind can never show the whole "truth". Instead, it reduces the reality to a limited number of aspects”.

The municipality perceives of the city primarily as a communication, and not a management tool.

Civil Servant: *"Our sustainability monitoring system is not the central management instrument of our city government. For this, the municipal administration is simply too big – all departments have their own key indicators."*

D) Process use

Municipal staff indicate that the process use of sustainability reports was strongest in the early years, during the development of the reporting system:

Civil Servant: *"Sustainability reporting has that function of stimulating a fundamental discussion: What are the right indicators, how do we use them? In our municipal administration, that process was very important; now it's less prominent"*

Nonetheless, the shape of Zurich's sustainability reporting system continues to receive attention,

Civil Servant: *"We have a steering group in the municipality checking every four years whether the topics and indicators are still the right ones. And there we have had a consensus every time that yes, these are our own 21 indicators"*.

In this context, most recent changes have been minor adjustments to update definitions of certain indicators.

Civil Servant: *Regularly some departments request me to adjust some indicator because in their internal process they've decided to change something, for example in the exact definition of security incidents and cases of violence"*.

E) Instrumental, conceptual and political uses and influence

Because the report is presented online since 2012 – the municipality does not produce any printouts, not even of the PDF summary – the civil servant in charge of its the report monitors visits to and downloads from the associated website. The civil servant remarks lacking comparative information on what would be realistically attainable download statistics. In Switzerland, sustainability no longer has an unequivocally positive, attractive image:

Civil Servant: *"There is kind of fatigue, and sustainability partially has a negative connotation. Sometimes I get the feeling that this is different in Germany"*

Asked for resonance among municipal and external stakeholders (media, educational institutions) key informants report lacking information on external use and the extent to which municipal office bearers are familiar with the report. It is estimated that most councillors will know of the existence of the report but make little active use of its content.

One exception is the survey of public perceptions that represents one of Zurich's 21 sustainability indicators and is coordinated by the same unit:

Civil Servant: *"The survey of public opinions has news value. When the results come out, that is exciting. Then the politicians also want to know straight away how is the satisfaction, where has it gone up or down".*

In response to the question whether the current reporting system will remain in place, the municipality indicated maintaining it in the near future. Key informants recognise that the current focus on monitoring is relatively apolitical yet that that this cannot be changed by the municipal administration alone:

Civil Servant: *"Setting targets is yet more political. That needs to be backed up, we cannot do that as municipal administration. This needs to be a process. Even using a traffic light – we tried to discuss this in the steering group yet realised that this immediately leads to controversial discussions"*

Nonetheless, from the perspective of the municipality, the act of having and maintaining a sustainability report fulfils a political function, strengthening sustainable development as a policy goal:

Civil Servant: *"The act of reporting also is a signal with symbolic weight, which has an important function. And indeed, sustainable development is high on the public agenda in Zurich. One has to set an example and show, with examples, that one is active and striving to pursue goals – this too is part of our exemplary role.*

4.2.2. Basel

A) Context

Basel is Switzerland's third most populous city with about 195,000 inhabitants, within a metropolitan area of 550,000 people straddling the Swiss, French and German border. Administratively, the city of Basel functions as capital of a Swiss half-canton (Basel-Stadt). As such, Basel enjoys yet more autonomy and representation with the federal government compared to Zurich and other Swiss cities. An Executive Council (*Regierungsrat*) represents the canton's executive – elected every four years together with a cantonal parliament – and operates as a collegiate authority. Of its seven members, four currently belong to left parties. The Council's president (*Regierungspräsident*) is the closest equivalent to the position of a mayor.

In 2001, the executive council approved a set of sustainability goals for the canton such as waste reduction and integration of immigrant citizens. In 2006, the pursuit of sustainable development was

codified as an article (§ 15) in the cantonal constitution. The cantonal government works according to a legislative plan (2013-2017) developed by the executive council and approved by the cantonal council.

B) Characteristics of the reporting system

The city canton of Basel published a first, conceptual “report on sustainable development” in 2001 (without data), followed by more substantial sustainability reports in 2005, 2010, and 2013. The core of these reports are 21 indicators, used descriptively, similar to those chosen by Zurich and monitored by other Swiss cities in the Cercle-Indicateurs benchmark. Each report begins with a foreword signed by all members of the Executive Council.

In 2014, the canton decided to stop elaborating dedicated sustainability reports, but to integrate sustainability reporting into the four-year legislative plan and corresponding reports. This will become effective in 2017 and also replace the cantonal sustainability goals from 2001.

As such, sustainability reporting in Basel can be described as corresponding to two phases: Multi-year sustainability reporting between 2005 and 2013, and integrated planning and reporting starting in 2017.

Type of reporting	Frequency	Content, indicator use	Length, format	Rating of components (substantial – absent)	
Dedicated sustainability reports (Strategy: <i>Periodic</i>)	Every 3-4 years (2005, 2010, 2013), discontinued	<ul style="list-style-type: none"> • 21 indicators, descriptive use • trends • Analysis of public policies 	67 pages (2013), printed + PDF	Context:	Substantial
				Public Policies:	Substantial
				Org. Performance	Limited
				Outlook:	Limited
Integration into general planning and reporting (Strategy: <i>Integrated</i>)	Announced to start in 2017	<ul style="list-style-type: none"> • Integration into four-year legislative planning cycle • To be determined 			

C) Reporting process

The elaboration of sustainability reports is carried out by a staff unit led by the president of the Executive Council. The same department oversees the drafting of the “legislative plan”. To increase policy coherence and mutual links, the Sustainability Report 2013 was launched simultaneously with the legislative plan (2013-2017).

For the development of the new, integrated reporting system, the cantonal government cooperates with sustainability researchers from Basel University. Basel participates in the Cercle-

Indicateurs benchmark and maintains regular exchanges with other Swiss cantons and cities. In this context, Basel civil servants remarked that appropriate organisational structures are important, appreciating the influence enjoyed by their presidential department. According to one interviewee:

Civil Servant: *“Basel is being envied by some other Swiss cities. In a meeting about the standing of sustainability management, several colleagues said that they are located in the environmental department and can’t work effectively at all because sustainability is not perceived as a cross-cutting task. In that regard we’re a step ahead”*

D) Process use

The 2013 report contains a section with “traffic lights” in which 15 governmental aims in the economic, environmental and social sphere are briefly analysed using sustainability indicators; 7 received a “green” light for their contribution to sustainable development, 8 a “yellow”, neutral indication, none a “red” one. According to political office-bearers interviewed for this study, such sections were meticulously analysed within the cantonal government:

Politician: *„The Economics Department certainly puts its oar in whenever economic indicators are discussed, or education. This then moves back and forth two or three times”.*

In response to the question to what extent the cantonal government plans to increase the use of targets – mostly absent in the 2013 sustainability report – the cantonal government referred to benefits of integration with financial plans.

Politician: *“The more management and planning instruments exist in parallel, the less effective they become. The most effective management form is via finances. This is the reality of any administration and government because this is where concrete budgets, positions and investments are approved”.*

One the other hand, the notable observation is made that governments and parliaments may have diverging interests.

Politician: *“The governing council, that’s the system, doesn’t want to have its freedom of action restricted, certainly not by parliament. This is why every planning instrument, so to speak, is kept at a relatively high altitude. So in daily management you retain some latitude. These are conflicting interests. Parliament, in turn, has budget authority, and thus wants to tie the financial and activity planning”.*

E) Instrumental, conceptual and political uses and influence

According to key informants, as part of Basel University’s supporting research project, about 15 senior civil servants of the cantonal administration were interviewed to explore their views on extant sustainability reporting. Results suggested that civil servants generally had limited knowledge and

made little use of the reports. The cantonal government interpreted this finding as one reason to suspend the publication of dedicated sustainability reports and develop instead a format of integrated reporting.

Basel's 2013 report was printed in 1500 copies, with each cantonal councillor receiving one. In light of the concomitant publication with the Legislative Plan, too, it can be assumed that all cantonal councillors are familiar with the existence of the sustainability report. According to civil servants interviewed for this study, the publication of the latest report was mentioned in local media but did not lead to a marked public discussion in (social) media or among civil society groups.

Probed for further purposes and effects, key informants asserted that the publication of a sustainability report also fulfils symbolic functions, creating a positive image for Basel.

Politician: "This also is one of the motives: In Switzerland we have the reputation of being a pioneering canton in environmental protection, energy and climate, and such reports also serve to buttress this"

4.2.3. Amsterdam

A) Context

The city of Amsterdam has about 830,000 inhabitants within a metropolitan area with 1.6 million people. As with all Dutch municipalities, the city is governed by an elected municipal council (45 members in Amsterdam) elected for a four-year term based on proportional representation. Once a governing majority has been reached through a coalition agreement, the council appoints a municipal executive board of alderpersons (*wethouders*). The mayor is appointed for a six-year term by the national government upon nomination by the municipal council. The city has a long-standing reputation for its commitment to sustainability and progressive policies and the development of information systems such as the "Amsterdam monitor" (Schyns and Boelhouwer 2004). The municipality currently co-funds an NGO-run sustainability monitoring initiative (www.degezondestad.org) with innovative info-graphs and statistics. Further, the municipality maintains a "Sustainability Council" with 19 members from business, civil society and knowledge institutions advising the municipal government.

B) Characteristics of the reporting system

Amsterdam first produced two dedicated sustainability reports in 2005 and 2008. Both reports made use of standards proposed by the Global Reporting Initiative (GRI-3) and contained few indicator data. Starting in 2010, the municipality's general, annual reports contained a chapter dedicated to sustainability structured around 10 locally chosen indicators (on air quality, cycling share in overall

transport, citizen satisfaction with the urban environment, etc). Each annual report (2010-2014) also presents a “municipal sustainability index” that transforms scores on these 10 indicators into an overall, aggregated score. The municipality has published additional reports on sustainability-related topics, e.g. a “climate and energy report 2013”. The municipality is carrying out an active (social) media strategy through websites and email newsletters dedicated to sustainability.

In March 2015, the municipal council approved a “Sustainability Agenda” document with numerous indicators and targets for the short-term (2016) and medium-term (2020, 2025). This document also contains the announcement that the municipality will restart publishing dedicated sustainability reports – entitled “State of Sustainable Amsterdam”.

Evidently, Amsterdam’s sustainability reporting contains various instruments and this complexity does not allow describing it in terms of neat categories of “reporting” and “non-reporting”. A distinction of three phases seems justified: Dedicated sustainability reports in 2005 and 2008, Integration into the Annual Report between 2010 and 2014, and new dedicated reports – complementing the Sustainability Agenda and Annual Report – starting in the near future.

Type of reporting	Frequency	Content, indicator use	Length, format	Rating of components (substantial – absent)	
Dedicated sustainability report (Strategy: <i>Periodic</i>)	2005, 2008	<ul style="list-style-type: none"> policies, indicator table (no data) reference to GRI-3 	96 pages (2006), printed + PDF	Context:	Substantial
				Public Policies:	Limited
				Org. Performance	Absent
				Outlook:	Limited
Sustainability Indicators in Annual report (Strategy: <i>Integrated</i>)	Yearly (2010, 2011, 2012, 2013, 2014); to change in 2016	<ul style="list-style-type: none"> 10 indicators and self-developed performance index 	594 pages; 20 in chapter on sustain. (2014), printed + PDF	Context:	Limited
				Public Policies:	Limited
				Org. Performance	Limited
				Outlook:	Limited
Dedicated sustainability report, complementing Annual (Financial) Report (Strategy: <i>Frequent ?</i>)	Announced	Announced: Annual publication with 3 components: <ol style="list-style-type: none"> quantitative sustainability index with trends, developments, facts (e.g CO2 emissions in the city) Summary of results of sustainability initiatives (by municipality and others) New questions about implementation, opportunities and developments 			

C) Reporting process

In the current municipal government, sustainability is a prominent issue of the coalition agreement and a core element the portfolio of one *wethouder* (alderperson) who thus also oversees the production of relevant reports by relevant municipal departments.

The new reporting system outlined in the “Sustainability Agenda” (published by the municipality in Dutch and English) emphasizes the difference between issues that are short-term and under certain municipal control and those pertaining primarily to other city actors. With this perspective, a refined sustainability index “will be included every year in the municipality’s annual sustainability publication, and will no longer appear in the financial statements. The financial statements can then focus on managing on the basis of the results and targets of the College term” (City of Amsterdam 2015, 60). The purpose of the new publication is to “enter into an intensive dialogue with the city and the region on the implementation of the Sustainability Agenda” and “to connect to relevant platforms where talks on sustainability are already underway”.

The scope of the new, dedicate sustainability report will thus be broader than that of the annual report. Nonetheless, the municipality is selective with regards to indicators. According to the Sustainability Agenda, the modified sustainability index will retain only two out of the current 10 indicators – while four will be added (e.g. sustainable energy generated per capita), six will be removed (e.g. attractiveness for establishing new businesses – “no relation to sustainability”; Energy consumption by businesses in terms of added value created – “error prone”; citizen satisfaction with neighbourhood: “unrelated to substantive lines set out in the Sustainability Agenda”; Proportion of clean lorries and vans: “Reflects national trends, not trends in Amsterdam”).

D) Process use

According to a GRI representative quoted in a journalistic piece, “when the city of Amsterdam issued their sustainability report, they pulled together data that was previously hidden in unconnected silos where, for example, carbon emission data was being reported only to the climate change audience, so the reporting process allowed Amsterdam to create a holistic strategy” (Ballantine 2014).

At the time of this research, Amsterdam was busy developing new reporting instruments and municipal staff interviewed did not report substantial process use or benefits derived from existing instruments.

E) Instrumental, conceptual, and political use and influence

Amsterdam’s current “Sustainability Agenda” – which contains more baseline information on a number of indicators than many other “sustainability reports” – was approved unanimously by the City Council, indicating that all councillors will be familiar with its basic content. Aided by the

municipality's dissemination efforts (internet, events, media), this and other documents are likely to have influenced the city's public agenda, though this is hard to prove.

In the light of Amsterdam's concomitant production of various reporting instruments relating to sustainability (dedicated reports, "sustainability agenda" document, annual financial reports), use and influence needs to be seen in conjunction. Office-bearers interviewed for this study asserted that it is unrealistic to expect all councillors to be familiar with all publications but that in the Amsterdam council, some councillors are very knowledgeable per topic (in larger political parties usually the thematic spokesperson) and actively explore the use of data for the benefit of evidence-based policy-making.

Politician: "As councillor you have to ask for the figures behind the figures. Since I asked people are taking a closer look."

This suggests certain instrumental and conceptual use of sustainability-related indicators. In addition, political office bearers subscribe to the view that sustainability reports can have symbolic value, promoting legitimacy among citizens.

Politician: "It certainly has value for the public too. One can ask how many people will really read this but in my opinion this is really serves to show Amsterdam citizens what we've done with tax money".

4.2.4. Nuremberg

A) Context

With a population of about 517,000 inhabitants, Nuremberg is Bavaria's second-largest and Germany's fourteenth-largest city. The city has a rich history, with medieval heritage and significance during the Nazi era. In response, city governments in recent decades have put much emphasis on peace, human rights, and social integration of immigrants who make up a sizeable percentage of residents. In the German political system, local government is organised according to laws of the federal subdivision called *Bundesland*, which is Bavaria in the case of Nuremberg. In accordance with the Bavarian municipal code, citizens of Nuremberg elect the mayor and 70 members of the municipal council that appoint a collegiate of deputy mayors and "professional councillors".

In 1997, as one of the earliest cities in Germany, Nuremberg formalised an „Agenda 21" process (that continues to be active, retaining the name). In 2004, the municipal council approved a sustainability policy and in 2005, an extensive set of indicators. In its candidature for the European green capital award, Nuremberg won a 4th place in 2012, and it was recognised as one of the "top three large cities" by the German sustainability prize (www.nachhaltigkeitspreis.de) in both 2014 and 2015.

B) Characteristics of the reporting system

Nuremberg wrote its first sustainability report in 2009 and a second in 2013. A third is announced for 2016. Each report contains over 100 indicators selected by the municipality. Reports contain a foreword from the relevant departmental head as well as the mayor. The publications presented to but not submitted approved by the municipal council.

Further, reports are designed with an alternating thematic focus: The 2009 report featured a “thematic special” about climate change adaptation, while the 2016 report is announced to focus on spatial land use and traffic.

Type of reporting	Frequency	Content, indicator use	Length, format	Rating of components (substantial – absent)	
Dedicated sustainability report (Strategy: <i>Periodic</i>)	Every 3 years (2009, 2012), announced for 2016	<ul style="list-style-type: none"> • > 100 indicators, descriptive use • trends • sample of municipal actions • outlook 	126 pages (2012) printed + PDF	Context:	Substantial
				Public Policies:	Substantial
				Org. Performance	Limited
				Outlook:	Limited

C) Reporting process

On the basis of the council resolution from 2005, the municipal Department of Environment and Health developed the reports launched in 2009 and 2012. According to key informants, for several year prior to 2005 various municipal departments had formed a working group tasked to develop sustainability indicators, engaging in tedious discussions because of widespread apprehension about the workload involved in data production. According to civil servant interviewed, one positive breakthrough experienced in Nuremberg was the decision to cooperate closely with the municipal statistics office – while for the first report, the department of Department of Environment and Health invested much energy into data collection, the process was subsequently led by the statistical office. When developing its reporting format, the municipality also analysed the practice of other cities, notably Zurich. Reports were launched together with public events (lecture, discussion fora relating to the thematic special of each report).

D) Process use

According to staff interviewed, the production of the initial report has been a means to improve the municipal data management system. For certain indicators – e.g. energy consumption – data needed be retrieved from relevant institutions (e.g. energy suppliers) and to be “dis- and re-aggregated” in order to correspond to the administrative boundaries of the municipality.

Moreover, exchanges between staff responsible for the elaboration of the sustainability report and those from other departments – notably the educational report – were perceived as cross-fertilising and improving the quality of both.

Politician: *“Measuring the contribution of the educational system to the overall development of the city – this isn’t ready yet but posing the very question already created new impulses for educational reporting”*

E) Instrumental, conceptual and political uses and influence

According to civil servants interviewed, municipal councillors are the main target group of the report and will – in their majority – also be familiar with the instrument.

Civil Servant: *“Our main target group is the municipal council. As input. So they’re increasingly aware whenever they take major decisions, about industrial estates, about road construction, about new parks or no new parks”*.

Interestingly, the report is also used as a tool to implicitly inform political discussion within the collegiate of governmental executives. For example, with regards to a proposed new road link to the airport seen favourably by the economics department, the environmental department warns of ecological problems by implicitly referring to indicators contained in the sustainability report. Contrary to the practice of many other local governments where sustainability reports undergo an intense interdepartmental approval process before publication, in Nuremberg the Environmental and Health department retains lead authorship with certain autonomy.

Civil Servant: *“It is plain for everybody that 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”*.

Nonetheless, civil servants elaborating the sustainability report are cautious about the influence that a report may exert.

Civil servant: *“The report got a lot of attention externally and also praise internally, when it was presented in the city council. Nonetheless I doubt that it influenced political day-to-day business. There are so many of such concepts, in Nuremberg and elsewhere, whether it’s child-oriented or senior-citizen oriented city planning or gender mainstreaming. Mission statements quickly become paper tigers. So for us the main focus is making small but real, concrete steps towards sustainability”*

Beyond the city, the sustainability reports can be considered as being instrumental in promoting Nuremberg’s image as a progressive, sustainability-oriented city. In its applications for the European Green Capital Award and German Sustainability Prize, the municipality referred to its sustainability

reporting and in both cases, the public evaluation documents acknowledge Nuremberg's reports. Its reporting also caught the interest of external audiences:

Civil servant: *"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 we gone in no time"*

4.2.5.Dublin

A) Context

Dublin is the capital of Ireland and the country's largest city with an urban population of about 1,270,000 inhabitants. The city is governed by Dublin City Council, a unicameral assembly of 63 members elected by popular vote for five years. The council's president, elected among the councillors for a yearly term, is Dublin's Lord Mayor, a primarily symbolic office. The Council passes an annual budget and appoints the Dublin City Manager as chief executive tasked to implemented council policies and decisions.

In 2008, the city launched the Sustainable Dublin Initiative with the intention to move from individual sustainability projects to a strategic approach (Garzillo, Rok, and Fernández de la Fuente 2014). The Dublin City Development Plan 2011-2017 contains the goal that "within the next 25-30 years Dublin will have an established international reputation as one of the most sustainable, dynamic and resourceful city regions in Europe"

B) Characteristics of the reporting system

Dublin City Council started producing annual sustainability reports in 2010. Further editions appeared in 2011, 2012, and 2013. All published reports were stand-alone documents published as online only, PDF documents, available for download from the council's website. In 2014, no report was published, without further explanation, suggesting that reporting was discontinued.

Together with the 2011 report, a Sustainability Indicators Framework was published that outlines 39 indicators for the Dublin Region, based on a participatory review (following the Natural Step methodology) of existing international, national and local indicators. Each published report contains paragraphs on the city's vision, context and strategic goals, achievements and future actions, illustrative examples of past and future activities, and sustainability indicators to illustrate trends and performance. Each report begins with a statement by the Lord Mayor, Chief Executive, and Green Officer. The reports are organised around eight key themes with a series of quantitative indicators as measures of performance.

Type of reporting	Frequency	Content, indicator use	Length, format	Rating of components (substantial – absent)	
Dedicated sustainability report (Strategy: <i>Frequent</i>)	Yearly (2010, 2011, 2012, 2013), discontinued in 2014	<ul style="list-style-type: none"> 37 indicators, descriptive + performance orientation discussion of trends, actions and planned activities GRI-4 Index 	35 pages (2013), PDF only	Context:	Substantial
				Public Policies:	Substantial
				Org. Performance	Moderate
				Outlook:	Limited

C) Reporting process

Dublin's "Corporate Plan 2010 – 2014" included various sustainability related targets including the publication of a sustainability report. The city council's "Green Officer" drafted the reports, stating that "has been prepared following consultation with staff, partners and elected members" (foreword to Sustainability Report 2010) and presented them in sessions of the City Council.

According to the preface of the 2010 report, "we recognise that we cannot tackle all our impacts immediately, and have focussed on those we have direct control over. In subsequent reports we will increasingly widen our scope".

Civil servants interviewed for this study indicated that Dublin's current Chief Executive asked for a change of indicators, replacing the tailor-made, Dublin-specific indicator framework developed in 2010-2011 by the internationally standardised indicator set "ISO 37120" proposed in 2014 by the International Organisation for Standardisation (ISO 2014).

D) Process use

The elaboration of the report reportedly stimulated the development of linkages among municipal staff and departments that did not exist before.

Civil servant: "When I was coming to write the report I realised that I needed to find the people inside each department who knew what was going on and what were novel, innovative activities. So it meant that I had a list of maybe 13 people that I brought together. So back in 2010 I invited those people to regular meetings in the course of about 6 months. And all of those people got to know each other and they were all people who were the doers, the people who were active in that space. People who said: I didn't realise that we did that or you did that. Maybe you could help me with this. And that grouping has been going right until the present moment."

Further, there is evidence that the collection of data from national statistical system helped to highlight deficiencies, thus possibly triggering a long-term improvement.

Civil Servant: *“Even looking with an interrogating eye at some of the national statistics or the naming of categories, you begin to realise: hang on, that doesn't make sense, those numbers don't add up, and then you ring the central agency responsible for this stuff and they say, yes, well you see, for historical reasons, this doesn't add to that, because we changed the name of this two years ago but now the European Union wants it in a different format. So we've done a conversion and it's inequivalent. And you begin to realise that it's lies, damned lies and statistics”.*

According to long-term observers, the quality of indicator-use and information availability has improved in Ireland, even though such changes cannot be attributed to Dublin's efforts.

Politician: *“In the 1990s, the level of indicator use was really poor. They told us how many kilometres of road there was, and then multiplied that by 2, and told us how many footpaths there were, and that was the level of sustainability reporting. So things have improved. When I was in the national government, we were certainly promoting the greater use of indicators by local authorities. Dublin city took the initiative and produced this report”.*

E) Instrumental, conceptual and political uses and influence

As for the purpose of Dublin's reports, the City Manager writes in his 2010 foreword that the “publication of this report documents of our continuing efforts and is also an invitation to engage with us on these issues”. Further, the document states that “there are many other publications available which are guided by, and which refer to sustainability, but in recognition of public interest and the importance of the topic, we have published this dedicated document so that you can track and influence our overall progress”. In the Sustainability Report 2013, the Lord Mayor's foreword relates that “This report also seeks to empower citizens by giving them information on how the city is developing”.

Dublin thus makes various references to citizens as target group of the report. Interviews with key informants have produced no information on the extent to which citizens have been reached.

Politician: *“It's useful information for senior officials in local government, within the city itself. And also it would be of interest to civil servants in the department of environment, and to city councillors. It's obviously also useful for environmental NGOs. The amount of people with an interest in this I'd say is very small”*

According to key informants, all members of the City Council will know about the sustainability reports since it was presented in the council and had enjoyed certain media and public attention; there is no information on how many councillors actively read or otherwise engaged with the report.

Civil servants relate that they were positively impressed by the resonance the report has caused on the internet including social media; the report was downloaded in great numbers by visitors to the municipal website from Ireland and numerous other countries.

“The reports have been downloaded thousands of times and have proved to be a useful tool for local and international stakeholders to stay informed of our sustainability progress”
(Ballantine 2014)

Further, municipal staff maintain that sustainability reporting fulfils symbolic functions, serving as role model for the promotion of sustainability practices including reporting in the private sector.

Civil Servant: *“That carries weight if we are good corporate citizens, and we have our reporting, and show leadership with our reporting, such that they say: If Dublin City Council can do it, surely we can do it. And so you raise the game for everybody.”*

4.2.6.Freiburg

A) Context

Freiburg im Breisgau has about 220,000 inhabitants and a dedicated "green", eco-city image (Roorda et al. 2011; Späth and Rohrer 2014) – it is a university town known for its use of the bike and as a stronghold of the green party that reaches up to 35% of the overall vote. For the first time among all large German cities (above 100,000 inhabitants), a candidate of the Greens was elected mayor in 2002. In this part of Germany (the Land of Baden-Wuerttemberg), citizens aged 16 and above elect mayors for a term of eight years and municipal council members for periods of five years. In 1995, the city council adopted a resolution stipulating that all new buildings must comply with certain "low energy" specifications. In category of large cities, Freiburg won the German sustainability prize in 2012. Since 2008, the Freiburg has an advisory Sustainability Council; in 2014, the municipality led the appointment of 40 new members from business, knowledge and civil society institutions.

B) Characteristics of the reporting system

In 2014, Freiburg published its first sustainability report. It was launched as an annex to the bi-annual budget. The municipal code of Baden-Wuerttemberg recently introduced the accruals accounting and the requirement of municipal budgets lines tied to performance targets. It allows municipalities to work with yearly or biannual budgets; Freiburg has opted for the latter and declared publishing sustainability reports at biannual intervals henceforth.

Following a preface by Freiburg's mayor, the 2014 report consists of three main parts: a) an outline of the city's sustainability vision, strategy, governance arrangements, and infographs with summary statistics (24 pages), b) a discussion of municipal actions and their effects in relation to 11 policy areas

(70 pages), c) an overview of the overall sustainability cross-relations (10 pages). Throughout, the focus of attention lies on explanation of the effects of municipal policies, actions and choices. This is done through narrative explanations, cross-references to other policy documents, and numerous graphs and figures. Tables and overviews of outcome indicators trends – a typical feature of other municipal sustainability reports – are absent.

Type of reporting	Frequency	Content, indicator use	Length, format	Rating of components (substantial – absent)	
Dedicated sustainability report (annex to Budget) (Strategy: <i>Periodic</i>)	Bi-Annually (started: 2014)	<ul style="list-style-type: none"> policies, strategy, management analysis of municipal impact on 5 pilot indicators GRI-4 Index 	108 pages (2014) printed + PDF	Context:	Moderate
				Public Policies:	Moderate
				Org. Performance	Substantial (select policy areas)
				Outlook:	Limited

As for the report's purpose, the mayor expresses in his foreword the hope that the sustainability report "presented to the municipal council and the public" will serve "together with the budget as important management instrument for sustainable development". The municipal council is a key target group for the report, and the municipality strives to identify the options and choices councillors face, based on an analysis of legal frameworks and indicator trends.

Civil servant: *"We have a certain conclusion yet what was important to us, we don't have a red or green traffic light but wanted to show the municipal council its options for action. Beginning with a specific issue, for example day care centres. What is going on, what are the trends, and what can we do"*.

C) Reporting process

According to the report's preface, the municipality's commitment to sustainability reporting arose by its signing the "Aalborg Commitments" in 2006. Freiburg's Sustainability Council took this policy framework as starting point to develop a set of 60 sustainability goals that the municipal council formally approved in 2009. In 2011, the municipality created a staff unit within the mayor's office that is dedicated to sustainability management. This unit first coordinated a participatory mapping exercise in which all municipal department identified about 600, sustainability-related activities. The municipality presented the ensuring activity report to the Sustainability Council yet this institution was not involved in the design or elaboration of the sustainability report. For the development of the municipal sustainability management system and sustainability reporting format – especially the selection of suitable indicators – the city cooperated with Leuphana University in a pilot project funded through an innovation grant from the federal government.

D) Process use

In the case of Freiburg, key informants stated that data availability was not a major issue as many sectoral reports provided quality information and analyses. However, the elaboration of the sustainability report and particularly preceding mapping exercises (i.e. workshops where municipal departments would relate their work to sustainability goals) were perceived as boosting staff morale.

Civil Servant: „What was very important to us is that colleagues have engaged very closely with the city’s sustainability aims and have seen – great – finally we can show what we’re doing. We’re not only asked how many day care places there are but finally the question of quality is asked too“

E) Instrumental, conceptual and political uses and influence

Since the report was presented and discussed in the council, it can be assumed that all of Freiburg’s councillors are familiar with the existence of the report. The sustainability report also received certain attention since it was the only annex to the budget (2014-2016). This distinguishes it from other, sectoral reports published by the municipality. The sustainability report is intended to supplement these, providing information on cross-linkages and trade-offs.

Civil Servant: “Our contribution is to create an overall context. We tell our colleagues: Good that you’re implementing energy-neutral housing, what’s the relation of this to the promotion of health? This is our level, to stimulate ideas. Or to identify trade-offs and 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. This is something we’re visualizing. That’s our level”

The publication of Freiburg’s sustainability report was mentioned in a local newspaper but did not cause a major media impact. Beyond the city, the report caused considerable interest among peers inasmuch as the municipality received request for advice on reporting from numerous other cities. Freiburg’s cooperation with Leuphana University and a consulting firm (www.publicgovernance.de / KPMG) also led to the dissemination of knowledge about its reporting practice.

4.3. Effects of context factors

What does a comparison of cases tell? Revisiting as initial criterion the socio-political context of each city (Factor A, in the evaluative model and above presentations per city), the case studies reveal a number of commonalities and differences. The small number of cases did not allow making any systematic comparisons yet produced worthwhile evidence of factors with apparent influence.

In terms of political systems, all six case cities have non-majoritarian, relatively consensual governments. Especially in the Swiss cases, informants frequently stressed that in the preparation of

reports, the municipal administration must not overstep its political mandate, carefully avoiding contested interpretations (e.g. regarding what would be a positive or negative trend or sustainability target). For the Swiss cities, sustainability goals legally bestowed through popular referenda also appeared important, thus constituting a context factor that is absent elsewhere.

Politician: *“The political system plays a role. In Switzerland including Basel, we don’t have a majoritarian model of democracy but rather a consensual democracy. In this system, it is important to discuss conflicting interests and agree on general strategies at certain intervals.”*

At the same time, there are marked differences in political systems within countries (e.g., Basel is a canton and Zurich a municipality; mayors in Nuremberg and Freiburg serve terms of 5 and 8 years, respectively). Further, the political system evolves and must not be viewed and studied as a static entity. In this study, change was also observed to bring opportunities – in Freiburg, a reform of the municipal code of the relevant *Bundesland* – particularly the requirement that municipalities introduce accruals accounting and results-oriented budgeting – were seized as an opportunity to attach political salience to sustainability reporting. In a way, the sustainability report (and accompanying work sessions) were perceived as a well-timed “training module” for municipal councillors on performance-oriented budgeting.

Another context factor worthwhile noting in this regard are local government capacities, which relates to a city’s size.

Civil Servant: *“For large cities it’s certainly easier to produce a sustainability report [..]. The smaller ones are more likely to concentrate their efforts on activities“.*

A different context factor with heavy influence on the design and perceived effectiveness of reports are concurrent local government reports and reporting obligations. In all cities, informants reiterated the importance of linking sustainability reports to other (obligatory) reporting instruments.

Civil Servant: *“We have excellent sector reports that go into detail. Our sustainability report can’t emulate this. Which is why we decided to cover the meta level [in the sustainability report].”*

Sectoral reporting (with environmental and educational reports mentioned in various cities) conceptually relates to local government tasks that differ between countries, thus constituting another important context factor:

Politician: *“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”*

In this regard, it deserves mentioning that local governments also perceive of reporting as means to facilitate governance and mobilise citizens, transcending clearly defined legal tasks.

Civil Servant: *“There simply are many issues where a local government can only create very weak incentives. And it should do so but nonetheless there are many developments of our time, in the whole country and in Europe, for example consumption patterns and quality of life habits – these are so strong that the local government can simply not control them”.*

4.4. Effects of reporting system characteristics

The analysis of case studies illustrated that “sustainability reporting” is an umbrella term covering diverse practices – none of the six cases of European “pioneers” has developed the same strategy; to the contrary, each has made different choices about the purpose, content, periodicity, format, target groups, etc.

It is important to recall that not all reporting systems are designed to achieve all types of benefits – some forewords written by mayors refer to “communication / legitimacy / agenda-setting” and “management / decision-making” yet most are not explicit regarding the objectives of the reporting exercise. Further, virtually none mentions internal learning which turned out to be a major effect in various cities. The case studies suggest that Zurich, Amsterdam (through its agenda document and forthcoming, dedicated report) and Dublin seek to engage wide audiences including the public through sustainability reporting. For Nuremberg, Freiburg and Basel (in its forthcoming strategy), external communication is not a major function yet informing the local government (council) is the main objective.

In order to facilitate the comparison of cases, Table 7 summarises the main reporting instruments and the strength of process, instrumental, conceptual and political uses and influence observed in each city. It deserves mentioning that the strength of effects is also influenced by context factors (discussed above) and various process issues that are presented in the following section (4.5).

Table 7: Overview of reporting types and effects

Type of reporting		Main use and influence	Observed effects	Comments
Zurich	Dedicated report, 2004, 2008 (discontinued)	Process	++	• Process learning during inception
		Instrumental	0	
		Conceptual	+	
		Political	++	
	Dedicated online report, yearly since 2012	Process	0	• Declining public interest
		Instrumental	0	
		Conceptual	+	
		Political	+	

Basel	Dedicated report 2005, 2010, 2013 (discontinued)	Process	+	<ul style="list-style-type: none"> • Process learning during inception
		Instrumental	0	
Conceptual		+		
Political		+		
	Integration into general planning	To be determined		
Amsterdam	Dedicated report (2005, 2008)	Process	?	<ul style="list-style-type: none"> • Lack of data, unattractive presentation
		Instrumental	0	
		Conceptual	+	
		Political	+	
	Sustainability section in annual report (since 2010)	Process	0	<ul style="list-style-type: none"> • Opaque index, technical account, certain relevance for financial planning
		Instrumental	+	
		Conceptual	?	
		Political	0	
	“Sustainability Agenda ” (2015)	Process	+	<ul style="list-style-type: none"> • Several targets, unanimously approved by city council, media impact
		Instrumental	+	
		Conceptual	++	
		Political	++	
		Dedicated yearly report (announced)	To be determined	
Nuremberg	Dedicated report, every 3 years (2009, 2012)	Process	++	<ul style="list-style-type: none"> • Per report: changing focus theme • Political use within municipality
		Instrumental	0	
		Conceptual	+	
		Political	++	
Dublin	Dedicated report, yearly (2010, 2011, 2012, 2013), discontinued	Process	++	<ul style="list-style-type: none"> • International resonance • Executive wants ISO indicators
		Instrumental	0	
		Conceptual	+	
		Political	++	
Freiburg	Dedicated report (2014), annexed to bi- annual budget	Process	++	<ul style="list-style-type: none"> • Directed at councillors • High complexity • No overview on outcome indicators
		Instrumental	++	
		Conceptual	+	
		Political	+	

Table 7 suggests a number of observations. Even though none of the local governments explicitly started sustainability reporting to benefit from the writing process, such effects were evident in all six cases. All cities derived substantial “process use”, especially when a new strategy was introduced (In Amsterdam, this type of benefit is also plausible yet was not corroborated through case study evidence regarding its first reports 10 years ago). Inspiration, motivation, and improved data management

systems triggered by the inter-departmental elaboration of goals, indicator sets and narratives were frequently mentioned by civil servants.

These positive effects tended to wear out, however, with ‘fatigue’ affecting various systems. Dedicated reporting was discontinued in two cities (Basel and Dublin) and moved to an online dashboard in Zurich. Among early adopters, Nuremberg’s strategy was considered most continuous; its ostensibly successful strategy is the elaboration of extensive, low periodicity reports with a fixed indicator set yet changing focus themes to generate political salience.

With regards to reporting frequencies, informants from various cities had diverging views.

Civil Servant: 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. Yet in principle, I think that annual reporting is absolutely the right frequency. In terms of the EU legislation on non-financial reporting - I think that annual reporting is absolutely the way that we should go.

Politician: “I am not a friend of yearly reporting because especially the big issues – air quality, education – don’t change that quickly. You won’t find a trend there. It seems to me that 3-yearly reporting is quite a good period”.

What does this tell about the relative advantages of annual reporting (designated as Strategy 3 – frequent) compared to reporting at multi-year intervals (Strategy 4 – periodic)? In light of the fatigue observed among local governments producing substantial sustainability reports at yearly intervals, the argument in favour of lower frequencies appears to be stronger. However, frequency cannot be studied in isolation but is intrinsically linked to questions of scope and to other reports. As a matter of fact, the advantages and disadvantages of integration constitute another trade-off and topic of debate among practitioners.

Politician: “In our system, we have departmental reports but they remain at the bottom of the drawer or somewhere in the administration. This is why we decided [...] to join cyclical assessments, planning, general reporting and sustainability reporting in a four yearly rhythm. If we manage to base the assessment on sustainability criteria and create an honest, unbiased picture, this will show effects [...] Of course, the danger of integration is that the “flying altitude” rises, with much more general, noncommittal accounts”.

External Observer: “Integrated reporting is a very interesting development. Sustainability reporting once developed in the past as a sort communication brochure with a few case studies of corporate voluntary work. Eventually this was standardised with more graphs and hard data and the quality of data is getting better. And if at some stage you give the same credibility to sustainability information as to financial information - that is a really different

approach. Because then you'll also have it checked by an accountant and management will base its decisions not alone on finances but on extended information”.

As is evident from these quotes, integration can refer to different criteria including the joining of various types of information (financial and non-financial information) and the release of separate or joined-up reports. Amsterdam experimented with various strategies, deciding to integrate a small number of indicators into its financial, performance-based planning and reporting whilst relaunching distinct sustainability reports with multiple indicators to address a larger agenda and external audiences. This suggests that management and communication – frequently named as objectives in mayors’ prefaces to sustainability reports – and associated audiences may require distinct tools that are developed and applied at the same time. This interpretation also fits Freiburg’s approach. Its sustainability report – procedurally tied to the budget – is explicitly directed at municipal councillors and not designed to enlighten the public. For this purpose, the municipality focuses on other strategies such as citizen fora and media campaigns.

Another major topic of contention among practitioners that can also be perceived of as a trade-off concerns the reliance of standardised indicator sets. Uniform measures facilitate comparisons between cities and so-called benchmarking exercises yet may not be perceived as locally meaningful and appropriate.

Politician: “In comparisons between cities one can find a lot of non-sense. On the other hand, international comparisons create some pressure to improve. In [our city] we have relatively little green space which is due to our medieval heritage. In whichever ranking we thus perform badly and that creates pressure to look at least seriously at this issue”

Civil Servant: “I think 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 and on which do we have statistical information“.

A related issue highlighted by informants is the sheer number and interrelationship between various indicators. In the words of one NGO representative:

“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”.

Since prior literature suggested that the use of established reporting formats helps local governments make the right choices while avoiding self-serving biases, this issue was assessed too. Among the six

cities studied, only Dublin and Freiburg make indirect use of an established reporting format (namely, by referencing the framework of the Global Reporting Initiative in an annex to the report); Amsterdam did so until 2008. Zurich and Basel worked with an indicator catalogue agreed among Swiss cities but no standardised format. Nuremberg and Freiburg used tailor-made formats. Importantly, in this sample, there is no evidence of the various formats being more or less biased or self-critical; all reports appear relatively objective and measured in their interpretations and statements about the local government's achievements.

4.5. Effects of process factors

How are sustainability reports made? In line with the evaluative framework (Factor C), several process factors can be discerned.

Starting with the origin of the reporting system, in several cities (Zurich, Basel, Freiburg and Dublin), local governments cooperated with universities on design questions; however, in none of the six cities, reports are elaborated in consultation with any stakeholders external to the local government. Sustainability councils, as institutionalised forms of multi-stakeholder engagement, exist in some cities but do not seem to play a role for reporting in the cases studied. Zurich used to have a sustainability council prior to its first sustainability report. Freiburg first involved its council for the design of a local indicator system but the municipality then elaborated the report alone. For Amsterdam, the role of a freshly constituted sustainability council has remained unclear so far.

Authorship, approval and dissemination mechanisms show several differences in the cities studied. As shown in Table 8, in three cases (Amsterdam, Dublin and Freiburg), dedicated sustainability or “green officer” staff units led the elaboration of reports. In Basel and Zurich, staff units for planning and urban development had this task. Nuremberg stands out inasmuch as a sectoral department (Environment and Health) lead the process. Such an arrangement is conceived as unfavourable by informants in other cities (cf 4.2.2) but not perceived as a problem in Nuremberg where the report commands political attention.

Table 8: Elaboration, approval and dissemination

City	Local government unit leading report elaboration			Vetting process		Dissemination
	Urban development unit	Sustainability unit	Sectoral Department	Inter-departmental scrutiny	Involvement of political council	Printed report
Zurich (update 2013)	X			Yes	No	No

Basel (last report)	X			Yes	Presented	Yes
Amsterdam (sust. agenda)		X		?	Formal approval	Yes
Nuremberg			X	Limited	Presented	Yes
Dublin		X		?	Presented	No
Freiburg		X		Limited	Presented	No

This suggests that organisational structure only is one manifest factor influenced by further, less tangible aspects such as internal leadership and organisational culture. Interviews with informants also point to differences in internal vetting processes. While in Zurich and Basel, the content of reports is scrutinized by several departments, there is less evidence of intense vetting in other cities. In all cities, major reports (thus excluding Zurich’s recent update) were presented to the local government council; in Amsterdam, the Sustainability Agenda was formally voted on. In this regard, informants also report a potential advantage of elaborating a sustainability report as a distinct document.

Politician: *“If sustainability reporting is separate, we will discuss it separately in the municipal council. When we review the annual report, somebody might have a question about sustainability but the discussion will primarily be about finances. In this context, a separate report gets more attention.”*

For the dissemination of reports, most local governments also invest into printing (in Basel, for example, of 1500 copies) yet this is no self-evident fact; in Zurich and Dublin, reports only exist as web interface and virtual (PDF) document. All cities except for Amsterdam offer all of their reports for download from their websites.

5. Conclusion

This section presents a response to the research questions (section 5.1) set out in the introduction, a brief discussion about the findings of this study in relation to other studies (5.2.), a review of the limitations of this study (5.3), suggestions for further research (5.4), and recommendations for practitioners (5.5).

5.1. Response to research questions

This study addressed as overall research question the value of sustainability reporting by local governments. The conclusion is structured by answering four sub-questions.

- Sub-question 1: **What do pioneering local governments achieve through sustainability reporting?**

The findings of this study concerning six European cities (Amsterdam, Basel, Dublin, Freiburg, Nuremberg and Zurich) located in four countries (Ireland, Germany, Netherlands, and Switzerland) suggest that sustainability reporting can be valuable for local governments as communication and management tool. There is evidence of various degrees of process use as well as instrumental, conceptual and political use and influence in all cases – these terms (corresponding to a typology derived from evaluation research) mean in everyday language that local governments benefitted internally from undergoing the reporting exercise whilst also improving aspects of management, learning and accountability.

For example, the elaboration of reports strengthened the capacities of local governments in terms of data availability and management and helped improve staff motivation – such ‘process use’ usually represented no declared objective but nonetheless constituted an effect corroborated through various sources. Importantly, this type of benefit tended to be strongest during the inception of sustainability reporting systems and to wear out over time. In Basel, Dublin and Zurich (three out of six cities) there is evidence of certain ‘reporting fatigue’ setting in over the years, and dedicated sustainability reporting was scaled down or discontinued.

Whilst process use mainly concerns government staff, instrumental, conceptual and political-symbolic use and influence may involve uncountable stakeholders inside and outside of the institution. The research methods employed in this study (triangulating results from interviews with three type of key informants per city plus an analysis of documents) point to some benefits in terms of improved decision-making capacities, knowledge generation and external legitimacy. There is no evidence that the reporting process produced any manifest harm in any city, and direct costs tend to be low; various local governments (e.g. Dublin and Zurich) invest relatively small amounts (e.g. about 5000 euro) for a professional layout of sustainability reports but do not even print these.

On the other hand, to what extent reporting contributes to the ulterior aim of sustainable development outcomes is a moot question. In the words of one civil servant interviewed for this research:

“When we're doing something like sustainability reporting which is new, is novel, in a way it's unproven. And you can't draw a straight line between the reporting and a better city. It can be seen as nice to have but not essential”.

Most effects are highly intangible and difficult to attribute causally to the act of sustainability reporting, which is just one of numerous, interrelated activities carried out by units of urban planning, sustainability management, environmental departments, etc. After all, local governments engage with external stakeholders in multiple ways and disclose sustainability-related information through numerous channels (strategic plans, sectoral reports, statistical yearbook, geo-information system, responses to council motions, etc), making it inappropriate and inviable and to evaluate sustainability reporting in isolation.

Moreover, objectives and target audiences differ between local governments. Interviews revealed that some (e.g. Zurich, Dublin) write sustainability reports with multiple audiences in mind, while others (e.g. Freiburg, Nuremberg) consider political decision-makers including municipal councillors as prime target group. However, such targeting is largely implicit (except for occasional insinuations in the prefaces of reports) and always relative. In all cases, sustainability reports are publicly accessible documents that may influence wide audiences; Dublin's reports, for example, were downloaded by thousands of internet users located in Ireland, Europe, and beyond.

Based on such evidence (that was circumstantial in many regards as most local governments did not track download statistics, for example), this study tentatively rated the strength of effects (process use plus instrumental, conceptual and political-symbolic use) associated with various reporting strategies. These findings indicate that sustainability reporting is no 'magic tool' that simultaneously fulfils all types of communication and management functions; instead, attempts to reach all audiences with a single document are doomed to fail, ushering in 'jack-of-all-trades – master of none'.

Reporting can be valuable but its characteristics and the reporting process need fine-tuning to context conditions. Several design choices – such as scope, periodicity, integration with other tools, authorship – deserve consideration. Among the six local governments studied, each developed different and unique sustainability reporting systems. Some of the observed variety may be seen as a sign of immaturity inasmuch as local informants also mentioned having experimented with various strategies in the face of neither prior experience nor existing “good practice” guidance. However, much variability appears to be adaptive – to be and to remain of value, sustainability reporting needs to be adjusted to evolving local conditions, needs and opportunity structures.

- Sub-question 2: **How has sustainability reporting evolved in European cities that count as pioneers?**

In the words of one external observer interviewed for this study,

“In the field of sustainability reporting there is a lot of rank growth. That’s been around for over 10 years that cities attempt to make sustainability reports and there is this enormous spectrum between extremely simple and extremely complicated”.

In the six European cities analysed for this research, sustainability reporting was started between 2004 (Zurich) and 2014 (Freiburg). In each of the four countries studied, public sector sustainability reporting was and is voluntary. The decision to engage in sustainability reporting was mainly made by the local government themselves; in no case did central governments or local government associations or civil society organisations play a major role. In Freiburg, the municipality felt obliged to start sustainability reporting from its having signed up to an international policy framework (“Aalborg Commitments”) that refers to the need of reports; at the same time, a new legal requirement for performance-oriented budgeting and accruals accounting was seized as opportunity to introduce sustainability reporting as a strategic, ‘meta level’ management tool for the municipal council.

Swiss cities (Zurich and Basel) voluntarily participate in an exchange platform on sustainability monitoring and benchmarking facilitated by the central government. Some local governments (Zurich, Basel, Dublin and Freiburg) collaborated with universities on design and evaluation issues but virtually all developed their own indicator sets and reporting formats. In none of the six cities do established reporting guidelines play a major role; some local governments (Freiburg, Dublin, and Amsterdam until 2008) refer to “standard disclosures” of the “Global Reporting Initiative” yet do not accord them major influence. In Dublin, political decision-makers reportedly demanded applying a new indicator set developed by the International Standardisation Organisation (ISO 37120) containing many indicators that are easily quantifiable but of questionable relevance for European cities (e.g. number of firefighters, number of trees planted per year).

The three earliest adopters (Zurich, Basel and Amsterdam) with the longest history of sustainability reporting have all changed their reporting strategies substantially. Experimentation and change was most evident in the case of Amsterdam where the municipality first issued two distinct, “stand-alone” reports before working on the integration of sustainability indicators into its annual (financial) reports and subsequently announcing to restart distinct sustainability reports. Zurich also subjected its reporting to a substantial change, while Basel and Dublin discontinued the publication of their stand-alone reports. Basel is currently working on its way to integrate sustainability considerations into its general planning and reporting cycle, while Amsterdam is working on its new format for public-oriented sustainability reports that will complement its general, council-focused planning and reporting instruments.

- Sub-question 3: **Which factors influence the relative effectiveness of various sustainability reporting strategies?**

The case studies showed that sustainability reporting in the six cities differed concerning various fundamental design choices including scope, frequency, institutional embeddedness, and use of standardised frameworks – as mentioned in the methodological section (3.3), the observed variety is partly a result of the strategy of “purposeful sampling” applied during the selection of cases. The presentation and aggregation of learning, management and communication benefits suggested that certain strategies are more effective than others and that effectiveness changes over time. Which factors matter?

This research applied a broad conceptual distinction between context factors, reporting strategies and process issues. As various local governments developed more than one reporting instrument, there is more evidence on these, also more tangible characteristics; isolating the effects of more latent context and process factors would require larger sample sizes for particular reporting strategies. Therefore, the sample of six cities pertaining to diverse settings (four countries) researched in this exploratory study is not suited to generalise about “best practices”. However, it produced valuable information on configurations, suggesting especially which type of sustainability reporting is *less* effective in a given situation.

One key finding is that the production of stand-alone reports produced at short intervals (Zurich, Dublin) is associated with “reporting fatigue” and decreasing use and influence. Multi-year intervals and alternating focus themes (Nuremberg) appear to mitigate fatigue. Periodicity in relation to format can thus be identified as an independent variable bearing on the effectiveness of reporting. However, decreasing resonance among external audiences also appears to relate to a lack of perceived “news value”, which is influenced by content and process factors. In Amsterdam, political influence is closely associated with a “sustainability agenda” document that contains targets (and indicator baseline information usually found in reports) approved by the municipal council. In other cities, sustainability reporting is less target-oriented but more descriptive, lacking political salience. There is evidence that this relates to political systems and the writing and approval process: In some local governments, draft report narratives are screened meticulously so to accommodate the opinions of collegiate, multi-party governments, thereby rendering accounts rather innocuous and noncommittal. In other cases (e.g. Nuremberg), the published report is more outspoken and used politically for debates between executives. Interestingly and contrary to the majority of cases where sustainability reporting is led by a staff unit of urban planning or sustainability affairs, Nuremberg’s reports are compiled by a sectoral department. Another context factor that was identified as having a major influence on the design choices made by local governments are other local government reports, notably those pertaining to the general (annual or multi-annual) policy cycle and other sectoral reports.

For the majority of local governments studied, the pursuit of legitimacy is an important motivation for reporting, especially in the production of stand-alone reports dedicated to the public. In some cities (Dublin, Nuremberg, Amsterdam's Agenda), this endeavour seems relatively successful, as there is evidence of reports reaching wide audiences. Regarding process factors, the practice of engaging with local stakeholders (media, citizens, etc) by launching reports through public events appears effective. However, merely presenting a report does not guarantee public resonance; in some cities (e.g. Zurich), local governments perceive the public discourse to be 'saturated' with sustainability discussions. In conditions of relative policy maturity (which characterises most of the pioneering cities sampled for this study), creating public resonance appears to require a comprehensive package of activities comprising events (such as discussion fora in Amsterdam, Nuremberg) as well as social media campaigns (Amsterdam, Dublin).

For local governments tying sustainability reporting to the policy cycle including budgets (particularly Amsterdam and Freiburg), the purpose is informing decision-making. There is anecdotal evidence, based on statements by individual politicians, on the extent to which the target group of councillors engages with the content of reports. Queries among key informants suggest that in all cities, the majority of councillors is at least familiar with the existence of sustainability reporting instruments. Some politicians interviewed for this study found it difficult to explain components of their own city's report (such as the working of Amsterdam's index); on the other hand, in Freiburg, councillors appreciated an impact-oriented sustainability report as a "training course" for performance-oriented budgeting which they consider conceptually demanding but had to introduce.

- Sub-question 4: **What lessons can be drawn from the experience of pioneers?**

To what extent are sustainability reporting strategies described in this study replicable by other local governments replicable, in line with the call for generic tools (Joss et al. 2015)? The realities of local governments across the six case study cities in four countries are too diverse for any standardised 'good practice' to make sense, and contextual differences can be expected to be even more pronounced beyond Europe. Nonetheless, some experiences made by pioneers are likely to have universal relevance – sustainability reporting requires capacities and resources, political leadership, and fine-tuning to characteristics of the political system and local agenda. In the words of one civil servant interviewed for this study:

“There are many good ways. I find it important that an indicator set is not simply chosen by a municipal administration but justified. It's essential that the indicator set addresses themes that matter to a city. Housing, quality of life, childcare services – these are important themes for us”.

All local governments studied (as presumably any larger local government in Europe) produced an array of obligatory and voluntary reports and stressed the need to relate sustainability reports to other sectoral instruments (such as education report, housing report, statistical yearbook, etc) and general (financial) reports. For coherence and policy relevance, a further necessity mentioned by informants is taking local government competencies and services into account, which differ per legal system.

Remarkably, in hardly any of the cases analysed in this study (with perhaps the exception of Swiss cities), sustainability reporting strategies appeared to have spread to peers within the same political system. No Dutch city copied Amsterdam's approach, and no Irish city Dublin's. Some local governments staff (e.g. Dublin) tried to motivate counterparts in neighbouring cities to follow their example but were told that these – generally smaller local governments – lacked necessary resources. On the other hand, most of the pioneers sampled in this study (including Dublin, Freiburg and Nuremberg) reportedly received numerous requests for information and advice from other, especially larger cities located in various countries. This suggests interest in the instrument and willingness to learn from pioneers but that introducing sustainability reporting may require particular motivations and resources.

5.2. Relation of study findings to prior literature

This study's finding that the pursuit of legitimacy is an important motivation for sustainability reporting corroborates results of several other studies (e.g. Marcuccio and Steccolini 2009). Legitimacy-seeking as a driver is most plausible for the production of stand-alone reports dedicated to the public; for the integration of sustainability considerations into the general planning and policy cycle it is less compelling. After all, this study also produced evidence that reports targeting internal decision-makers are not necessarily suitable to reach and engage the public. This supports the assertion in prior literature 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).

With regards to content and formats, other authors have argued that that "in the absence of mandatory requirements to report sustainability issues, disclosures are 'fragmentary' or 'cherry-picked' and organizations usually only disclosed those GRI indicators in their annual reports that they were interested in reporting" (Goswami and Lodhia 2014, 274). This claim was not corroborated in this study that showed no manifest differences in terms of self-serving biases between cities applying fully 'home-made formats' (Amsterdam since 2010, Basel, Nuremberg and Zurich) and those making some references to the GRI (Dublin and Freiburg).

Concerning standardisation of sustainability indicators, this study showed advantages and disadvantages, in line with observations made by other scholars (e.g. Moreno Pires, Fidélis, and Ramos 2014; van Zeijl-Rozema, Ferraguto, and Caratti 2011) who recommend selecting indicators according to context-specific factors and the objectives of the specific monitoring and reporting endeavour. Benchmarking can be powerful in producing insights and incentives but can also be misleading and dysfunctional (Tillema 2010).

This study appears to be relatively unique in its consideration of reporting periodicities; no published research had previously evaluated this dimension. Moreover, the associated finding of “reporting fatigue” among high-frequency reporters is a novel contribution to the field of public sector sustainability management where one frequently finds rather uncritical assumptions of “the more, the better”. This study fully supports the rarely heard warning 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).

This is relevant in the face of calls for obligatory sustainability reporting and performance-based management. In general terms, it relates to the public management notion known as “Goodhart’s law” which states that “numbers used for evaluation or control purposes will tend to become ineffective over time because of gaming or other forms of strategic behaviour (Hood 2012, S86).

This research also affirms the need to distinguish reporting from monitoring, two terms which are often conflated by proponents of ‘disclosure’ as research paradigm (e.g. Alcaraz-Quiles, Navarro-Galera, and Ortiz-Rodríguez 2014). After all, even when a local government does not publish indicator information itself, the same information may be publicly available – in the Netherlands, the national statistical office maintains sophisticated geo-information systems and dashboards that individual local governments cannot and need not compete with. This observation supports the assertion that “an indicator in isolation does not provide information about sustainability. It is only by relating a particular indicator to other measures and evaluating its importance within the system that we can make a meaningful sustainability assessment“ (van Zeijl-Rozema and Martens 2010, 15).

Can other local governments exploit these findings to improve their own sustainability reporting practice? Other studies suggests that pioneers may stay ahead. With regards to municipal climate change policies it has been asserted that “existing differences may become even more pronounced if the pioneers strengthen their capacities due to national funding and international benchmarking, while the “rest of the pack” lacks the capacity to apply for additional resources and the motivation to catch-up” (Kern and Mol 2013, 299). The relative scarcity of replication effects observed in this study can be seen as supporting this hypothesis.

5.3. Limitations of this study

The study of frontrunners implies an evident limitation: Early adopters certainly represent a biased sample (Kern and Mol 2013) so empirical findings from this study cannot be generalised to other cases and some hypothetical ‘average local government’. The sample size of just six cities in four countries does not allow to make any generalisations about peers in ostensibly similar contexts. Further, the work with key informants presents the risk of various biases – local government staff and politicians interviewed in each city have intrinsic motives to be wary of presenting their own work in critical terms. This risk is exacerbated by the fact that this research did not anonymise local governments as done by some other studies (Goswami and Lodhia 2014); the decision to identify the names of cities (except for some self-critical comments) was considered necessary to allow a comprehensive and context-sensitive analysis that gives justice to each case study. The triangulation strategy interviewing various persons in each city served to minimize the risk of (conscious or unconscious) biases and knowledge gaps. Further, it can be argued that in their voluntarily experimentation with diverse strategies, local governments had no strong performance pressure. During interviews, the researcher perceived much interest in critical reflections and openness among key informants to share experiences including shortcomings.

5.4. Suggestions for further research

Further research is needed. The traditional focus on “disclosure” as main research paradigm for sustainability reporting has had its day, at least concerning all those countries where local governments and other public institutions release an ever-growing amount of sustainability-relevant information and numerous types of reports. Here, research needs to focus on utilization and the effects of information disclosure and reporting.

Additional research can be of much use at both a more fine-grained (micro) and a broader (macro) level. In the first category, suitable topics of research include the emergence of reports within local governments (authorship, approval processes, relation with other knowledge management systems, etc); in the second category, there is much need to explore the prevalence and use of various reporting in larger samples and comparisons of various countries. The typology of strategies and analytical framework developed for this study appeared useful.

Based on the findings of this research and additional ideas inspired by the case studies, it is hypothesized that the following general factors – with Table 9 not representing a comprehensive list – are likely to influence the viability of sustainability reporting in various political systems.

Table 9: Hypothesized context factors influencing sustainability reporting

Factor influencing viability of sustainability reporting	Comment
<ul style="list-style-type: none"> • A local government's resources 	Includes financial resources and staff capacities.
<ul style="list-style-type: none"> • Availability of sustainability information from official sources 	Some national Statistical Offices or municipal associations maintain sustainability dashboards with localised indicator data; this can facilitate the writing of reports but requires coordination to avoid duplication of efforts.
<ul style="list-style-type: none"> • A city's political and electoral system 	Some countries have consensual, others majoritarian governments, etc. In many countries, mayors are elected for 4-5-years; in parts of Germany they have 8-year terms.
<ul style="list-style-type: none"> • General budgeting and reporting requirements 	In a growing number of countries, budgets have to contain performance information, providing an opportunity to link with sustainability indicators. In most countries, local governments are required to issue yearly financial reports yet some (e.g. in parts of Germany) have bi-annual cycles. In several countries, local governments write compulsory environmental reports, social reports, etc..
<ul style="list-style-type: none"> • National and local sustainability agenda, political discourse 	Also influenced by events and the behaviour of peers including other local governments
<ul style="list-style-type: none"> • Interest, participation and capacities of civil society, business, etc. 	Includes expectations of and familiarity with reporting in other sectors

Insofar that sustainability reporting in the public sector including local governments has strongly been influenced by developments in the private sector (cf Section 2.3), further research comparing these two appears useful. There certainly are commonalities but the findings of this study also pointed to important differences – while for commercial companies (and other public sector institutions) an organisational perspective is paramount, local governments need to manage internal, organisational issues as well as everything that happens within their jurisdiction or territory with uncountable other stakeholders.

To stimulate further discussion and research, a generic comparison between sustainability reporting by (commercial) organisations and (territorial) local governments is proposed in Table 10.

Table 10: Sustainability reporting by organisations and local governments

	Company / organisational sustainability reports	Local government / territorial sustainability reports
Typical target group	Public / customers, regulators, decision-makers, staff	Political decision-makers, senior civil servants, public
Purpose, intended benefits	Legitimacy, public relations, informed decision-making, employee morale	Legitimacy, informed decision-making, agenda-setting, social learning
Risks	“Greenwashing”	Information overload, biased

		“cherry picking” or political propaganda
Attitude to information sharing	Selective “disclosure”	Open data, information use
Related concepts	Sustainability accounting	Sustainability monitoring
Scope	Business activities, value chain, organisational issues	The city at large and / or policy fields under control of the local governments
Contested measurement tools	Monetization	Sustainability indices (aggregating various indicators)
Reporting frequency	Typically yearly	Sometimes yearly, often at 2-4 yearly intervals
Reporting frameworks	Global Reporting Initiative (GRI) and others	Mostly tailor-made tools, loose references to GRI and other frameworks

Recent moves towards compulsory sustainability reporting provide many opportunities for additional research. In France, municipalities with more than 50,000 inhabitants have to start producing sustainability reports (Commissariat Général au Développement Durable 2012) and the European Union is pushing for an increase – a recent EU Directive (2014/95/EU) requires many types of organisations including larger companies to start disclosing non-financial and diversity information.

The explorative nature of this research did not allow for hypothesis testing but generated a number of leads. Table 11 lists further hypotheses derived from this study that may inform future research.

Table 11: Hypotheses for further research

Factor	Hypotheses
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 / mayors / budgets, the lower the advantages of frequent reporting. • The more change and growth a city undergoes, the greater the value of frequent reporting. • The introduction of accruals accounting and outcome-oriented budgeting opens opportunities to links to sustainability indicators. • More limited local government competences increase the demand for distinct sustainability reports addressing trends in the city-at-large.
Reporting system	<ul style="list-style-type: none"> • The inclusion of performance indicators increases instrumental use. • Primarily descriptive indicators lead to decreasing interest from internal and external audiences. • Frequent, high content reporting leads to fatigue, i.e. decreasing interest • Integrated reporting is salient for decision-makers yet ineffective as external communication tool.
Process	<ul style="list-style-type: none"> • Collectively defining goals and indicators increases process use • The simultaneous launch with governmental plans increases influence.

These suggestions echo calls for politically-aware evaluations made in other articles such as the following one that contains a prescient reference to the sample of cities and conclusions of this study - "Switzerland is not Stockholm, and Stockholm is not San Francisco. We need not one model of how to make evaluations politically relevant, but several, each tailored to 'the way politics works round here' (Pollitt 2006, 50).

5.5. Recommendations

Previous sections contain implicit advice on design choices and trade-offs. This is made more explicit in this final section through seven practical recommendations, some of which are illustrated with quotes from practitioners interviewed as part of this study.

- 1) **Gather political and institutional support and manage expectations** – sustainability reporting requires resources, is no magic super tool, but can be beneficial.
 - Civil Servant: *"You have to say on the first day: We're going to do 5 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"*
 - External observer: *"Especially the start of a reporting system - that's work. This is a decision about which indicators, what will we measure. Once you have a system you can produce the report. Because you mustn't do it only once"*
- 2) **Ensure that reporting strategies correspond to the needs and interests of target audiences** (e.g. the public, technical staff, and political decision-makers). Make use of novelty to ensure salience.
 - Good practices: Nuremberg's changing thematic specials. Zurich's inclusion of subjective wellbeing as politically salient indicator.
- 3) **Make sensible choices concerning indicators.** Select approx. 20-40 indicators with local sustainability relevance. Identify and report on all indicators directly relating to local government competencies and services whilst also including other topics of high importance for a city's 'metabolism' and sustainability prospects. Strive for coherence with recognised indicator sets (SDGs, ISO 37120).
 - Good practice: Dublin's and Freiburg's "comply-or-explain" approach, documenting the relation between local indicators and GRI stipulations in the annex.

4) **Maximise informational value, weighing completeness and communicability.**

- Good practice: Produce short executive summaries in print that direct readers interested in more details to annexes and accompanying websites.

5) **Establish an internal evaluation framework.** Study signs that reporting has been worthwhile or not by monitoring references, media links, getting feedback (e.g. through interviews with key stakeholders) and opening channels for unsolicited feedback interviews

6) **Be aware of and make use of links between reporting and organisational development.**

External Observer: *“I’d advise you to start with organisational development. What are your capacities in the municipal administration? This leads - if you want it easily, along the lines of existing catalogues - to the choice of indicators that are relevant to you. This is how you assemble your own indicator set. This is an individual profile. But your first homework is to get the municipal administration into the position that it’s able to achieve that act of systemic thinking”*

7) **Have a long breath.** Make sure that sustainability reporting is carried out with a long term (“sustainability”) perspective.

Civil Servant: *“In our third report, we’ll be able to look back over 12 years and to say what is going into the wrong direction. And with such long-term information one may get a little bit of additional political attention“.*

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7. Appendices

7.1. Scoping of case studies

Highlighted in grey: selected cases

		One-off / unspecified intervals	Yearly	Publication at multi-year intervals (realised or planned)
DEDICATED SUSTAINABILITY REPORT	Limited scope / level of analysis (Strategy 2)	<ul style="list-style-type: none"> Approx. 30-50 cities in Germany In Netherlands: Wijk bij Duurstede 2014, Utrecht 2015 	<ul style="list-style-type: none"> The Hague 2012, 2013 Zurich 2013, 2014 	
	Substantial scope / level of analysis (Strategy 3+4)		<ul style="list-style-type: none"> Dublin 2010, 2011, 2012, 2013 Baltimore 2008 - 2013 	<ul style="list-style-type: none"> Amsterdam 2005, 2008 (+ again 2015?) Nuremberg 2009, 2012 Basel 2001, 2005, 2010, 2013 Zurich 2004, 2008 Bonn 2005, 2008, 2012; Augsburg Freiburg 2014 (special: annex to Budget) Genève, other Swiss cities, other cities from outside Europe
SUST. REPORTING WITHIN MULTI-TOPIC REPORTS	Integration into Annual Report, limited scope (Strategy 1)		<ul style="list-style-type: none"> Amsterdam 2010, 2011, 2012, 2013, 2014 	
	Part of statistical report (Strategy 1)		<ul style="list-style-type: none"> In NL: Utrecht, Groningen + others 	
	Integration into Annual Report, substantial scope (Strategy 5)		<ul style="list-style-type: none"> Basel-Land (canton) 2013 Melbourne 2011, 2012, 2013 Gold Coast (Australia) 	

7.2. Links to websites of case studies

Amsterdam	www.amsterdam.nl/gemeente/organisatie/ruimte-economie/ruimte-duurzaamheid/ruimte-duurzaamheid/making-amsterdam/sustainability/	Dutch + English
Basel	www.entwicklung.bs.ch/grundlagen/nachhaltigkeit/nachhaltigkeit-messen.html	German
Dublin	www.dublincity.ie/main-menu-services-water-waste-and-environment/sustainability-and-climate-change-dublin-city	English
Freiburg	www.freiburg.de/pb/,Lde/206068.html	German
Nuremberg	www.nuernberg.de/internet/umweltreferat/nachhaltigkeit.html	German
Zurich	www.stadt-zuerich.ch/nachhaltigkeitsmonitoring	German (+ English summary)

7.3. Guidelines for semi-structured interviews

<p>Introduction</p> <ul style="list-style-type: none"> • Explanation of purpose of study, proceedings • Agreement on confidentiality needs and follow-up / feedback
<p>1. Emergence</p> <p>1.1. What do you know about the origins of sustainability reporting in your city?</p>
<p>2. Process</p> <p>2.1. What you know about the current production of a report. Who is involved in drafting, approving, launching it?</p> <p>2.2. Do you have any information on costs (staff time, publication costs etc) of the reporting exercise?</p> <p>2.3. How is a report launched? Is publication tied to other political / planning processes in your municipality?</p>
<p>3. Purpose</p> <p>3.1. For which reasons has the municipality engaged in sustainability monitoring?</p> <p>3.2. Who are the target group as readers of the report?</p> <p>3.3. Perhaps a report is not about readers but its collaborative production matters and its very existence can be important. What's your view on this?</p>
<p>4. Effects</p> <p>4.1. Has the drafting or publication of the report had any particular effects?</p> <p>4.2. Is there any evidence or practical example of the report influencing</p> <ul style="list-style-type: none"> • knowledge of any stakeholders • decision making by the municipality, civil servants • decision making by the council, office bearers • transparency, legitimacy • communication with citizens, other stakeholders <p>4.3. Have there been any unintended effects, for example some misunderstanding, or unexpected benefits?</p> <p>4.4. What percentage of council members will a) know of the existence and b) have read the report? How about (senior) municipal staff?</p>
<p>5. Report characteristics in general</p> <p>5.1. What information is essential for a municipal sustainability report to be successful? Is there information you would like to have but currently lack?</p> <p>5.2. Which institutional or political arrangements and other processes (e.g. timing, complementary activities) are needed for a report to be successful?</p> <p>5.3. Which frequency is most appropriate for updating reports?</p> <p>5.4. Should the report focus on issues that are under the direct influence of the municipality or to sustainability issues at large?</p> <p>5.5. What's your view on the idea to set targets and to use "traffic lights" with some /all indicators?</p> <p>5.6. How important are comparisons and rankings a) with other cities b) between neighbourhoods in your city?</p> <p>5.7. There are calls for "integrated reporting", combining non-financial with financial information and also "monetised" comparisons. What's your view on this?</p>
<p>6. Open questions</p> <p>6.1. Why does only a small minority of municipalities elaborate sustainability reports and what would be needed to change this?</p> <p>6.2. What would you like to learn from the reporting experience of other cities?</p>