

Article

A Sustainability Management Model for Local Government: An Explanatory Study

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Abstract: Although the scientific debate in the field of business economics is rich in contributions to the subject of sustainability, they mainly focus on a specific aspect represented by sustainability reporting. Consistent with this bibliographic evidence, the aim of this study was to investigate a sustainability management model in local authorities, which, by examining the dimensions of sustainability, goes beyond the focus of reporting highlighted in the literature to consider the entire sustainability cycle (from planning to measurement). To this end, the methodology of the single case study with multiple units of analysis is used, examining the case of an Italian local authority that has experimented with the sustainability management model described in this paper. The analysis of the case leads to some concluding remarks on the strengths and weaknesses of the model, contributing to the scientific debate on sustainability management and providing useful indications for public managers and political decision-makers.

Keywords: sustainability management; local government



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1. Introduction

The concept of sustainability is complex, considering its transversal nature in relation to different areas of management, the strong focus it implies on the impact of management choices, its multidimensionality and the need to consider the intergenerational effects of current decisions. Therefore, the definition of sustainability is not simple and often requires a multidisciplinary approach.

There are numerous scientific contributions that, over the last 25 years, have proposed different definitions of sustainable development (Pezzey 1992; Murcott 1997; Pope et al. 2004; Kuhlman and Farrington 2010; Borgonovi et al. 2018). However, it is not possible to identify a comprehensive definition of sustainability, and attempts to find one may represent a stretch (Homann 1996).

Despite the aforementioned difficulty in unambiguously defining the concept of sustainability, an early definition of the concept of sustainable development in the Brundtland Report of the *World Commission on Environmental and Development* (WCED) of 1987 can be identified. This document defines sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development 1987).

Furthermore, it states that sustainable development is to be understood as “a process in which the exploitation of resources, the direction of investment, the orientation of technological development and institutional change are all in harmony, and enhance the present and future potential for the satisfaction of human aspirations and needs”.

An initial analysis of this definition identifies sustainability as a functional approach to the sustainable pursuit of development that combines social equity, environmental protection and support for economic progress, with a view to intergenerational equity.

Therefore, it is possible to identify what are traditionally considered the three main dimensions of sustainability (World Commission on Environment and Development 1987):

Environmental sustainability, considered in terms of the ability to maintain the availability of natural resources over time;

Economic sustainability, understood as the capacity to produce lasting wealth through the rational use of available resources;

Social sustainability, which can be understood as the ability to ensure access to services considered fundamental (security, health, education) and to guarantee conditions of well-being (serenity, sociality) in an equitable manner between current and future generations. However, recently, the COVID-19 pandemic has highlighted how (along with health and economic issues) we must also consider social sustainability in terms of interpersonal relationships, which the pandemic has severely challenged.

It is clear that, although the three main dimensions of sustainability are set out separately for reasons of explanatory simplification, they are interrelated and therefore require a systemic approach that considers them as elements of a whole that contribute synergistically to achieving a common goal.

Several sustainability issues are of concern to citizens and scientists, considering that humanity is already demanding more than the Earth's ecosystems can renew (Galli et al. 2020): Earth Overshoot Day has been brought forward from 22 August 2020 to 29 July 2021. Air pollution, climate change, waste and water management are issues that have reached such problematic levels that they have had significant negative impacts on the environment, human health and the economy. Obviously, these aspects cannot be ignored by public policies at all levels of government. In particular, local government—given its proximity to the territory—must address sustainability concerns and make them relevant on the political agenda (De Matteis et al. 2021). Therefore, it becomes essential to understand if and how local public governments can develop managerial tools for sustainability.

This is also reflected in the contents of both Agenda 21—in terms of the role attributed to local authorities on the issue of sustainability (Local Agenda 21)—and the more recent 2030 Agenda (Bebbington and Unerman 2018).

This lays the foundations for the objective of this study, which was to investigate a sustainability management model that enables the planning, detection, measurement and evaluation of the sustainability profile in local authorities, taking into account the various dimensions of the sustainable approach and integrating sustainability management into the documents already in use by local authorities.

The article is structured as follows. Section 2 recalls the main scientific contributions to sustainability management in the public sector and identifies the objective of the work. In the following Section 3, the research methodology applied in this work is made explicit, while Section 4 analyzes the case study of an Italian municipality that has experimented with a sustainability management model. Finally, Section 5 contains some concluding reflections and managerial and policy implications.

2. Literature Review

The role of public administration, and in particular of local authorities, in implementing sustainability is fundamental: The municipality is the institutional point of reference closest to the citizen and to economic and social organizations and is responsible for promoting a culture of sustainable development by drawing up a comprehensive, multi-level strategy and setting an example for the behavior of the community (Laurian et al. 2017). On the one hand, local governments must make their experience available, and, on the other hand, they must take an active and collaborative role in spreading the culture of sustainability and implementing it.

It is therefore essential that local authorities have people in place with the appropriate skills to integrate the principles of sustainable development into their policies and planning documents (Wang et al. 2014).

The presence of a managerial and political class capable of meeting these challenges is an essential condition for launching a sustainable development process. Sustainable development not only involves taking on new responsibilities but also urges local authorities to

question their own institutional role, the way they carry out their mandate and their ability to make choices for the community that also look to the future—choices made in view of the value and relevance and also from a strategic point of view (Zeemering 2018), that are now attributed to sustainability and that, therefore, should no longer sacrifice, as in the past, the medium–long-term vision or place the achievement of immediate political results at the top of the list of criteria to be considered. In this regard, Ball warns of the possibility that local authority management may make the mistake of focusing on short-term actions—aimed at achieving an adequate level of efficiency—to the detriment of long-term actions, such as those linked to sustainability (Ball 2002).

In general, it is a question of reasoning and promoting a development model based on renewed socioeconomic relations and on a rational use of resources and, therefore, centered on a profound cultural and organizational change in the way public administration is managed (Bruff and Wood 2000), leveraging the essential role of training as a vehicle for a sustainable approach (Bryant and Thomson 2021).

Since the late 1980s, the academic and institutional worlds have raised the level of attention placed on sustainability issues which, as Bebbington and Gray (2001) point out, have been given a prominent place on the political agenda of many countries. Policymakers, as shown in the work of Rogers et al. (2008), have been asked to combine the protection of the natural environment with the economic and social needs of the community in setting their agenda. However, according to Tracey and Anne (1997), in order to achieve a concrete result in this sense, it is essential that the principle of sustainability is present across the board in policymaking at all levels of government, from international to local. Otherwise, the achievement of this goal remains a mere utopia.

In the early 2000s, the lack of specific research in the literature on the sustainable orientation of public institutions was seen in the work of Ball (2002, 2004) and Ball et al. (2014), who highlighted the importance of studies on sustainable principles and practices. In Gray (2006) study, however, the disparity in the number of contributions promoted in the public sector compared to the private sector was noted.

Public organizations, by definition, should generate value for the community through their political choices: It is therefore clear that they have a greater responsibility not only in terms of making sustainable choices but also in terms of promoting and supporting policies that encourage their development.

The reporting aspect certainly appears to be the one most dealt with by scholars (Dumay et al. 2010; Williams et al. 2011; Domingues et al. 2017; Montecalvo et al. 2018). Indeed, public administrations, both at national and local levels, having to undergo various recommendations and numerous controls and seem to be more facilitated and oriented towards communicating the actions undertaken and, consequently, the performance achieved in terms of sustainability. However, several scholars have pointed out in their work that there are other factors that have contributed to the proliferation of writings on sustainability reporting in local authorities. For example, in the study by Kaur and Lodhia (2014), stakeholder involvement is considered an essential motivation for the development of sustainability reporting. The same orientation can be seen in the work of Farneti and Guthrie (2009) in which, with reference to the Australian public sector, it was found that sustainability reporting is justified by the need to inform stakeholders of the organization's activities.

In addition, according to Ball and Bebbington (2008), for the public company, transparency regarding sustainability aspects is an essential variable and linked to its very nature. Moreover, according to the same scholars, in general terms the *performance* of public organizations is often related to the achievement of socially sustainable objectives. Through sustainability reporting, public organizations have a tool at their disposal to monitor their strategies and direct future actions.

In terms of sustainability reporting models, the *Global Reporting Initiative* (GRI) is among the most widely used worldwide (Marimon et al. 2012) and has been analyzed in the literature from different perspectives, including the following:

- The diffusion and usefulness of the GRI approach in corporate reporting ([del Mar Alonso-Almeida et al. 2014](#));
- The impact of the GRI approach on sustainability reporting ([Moneva et al. 2006](#));
- Some critical issues and limitations of GRI ([Isaksson and Steimle 2008](#); [Fonseca et al. 2012](#); [Hahn and Lülfs 2014](#); [Belkhir et al. 2017](#));
- The use of GRI in the public sector ([Guthrie and Farneti 2008](#); [del Mar Alonso-Almeida et al. 2015](#)).

On the contrary, there is still a limited amount of research on planning sustainable strategies. Some scholars argue that sustainability should be integrated into the strategic planning process ([Williams 2002](#); [Zeemering 2018](#)).

In addition, studies on sustainability planning in the public sector show that it is characterized by a compliance and formal approach to regulatory requirements ([Rodriguez et al. 2018](#)).

A situation similar to that referring to the subject of programming can be found in terms of systems and techniques for measuring and evaluating results related to the general strategies of the entity and, consequently, also related to the objectives programmed in the specific area of sustainability ([Nuhu et al. 2019](#)), hence the need for increased attention to control systems. The control phase closes the planning cycle and provides, among other things, data on management and deviations from plans, which are also useful for defining future sustainability objectives.

These are complex but important assessments for the purposes of verifying the decision-making process because they make it possible to re-examine the targets identified in the planning documents and, therefore, to confirm, eliminate or reformulate them according to the criteria of effectiveness, efficiency, cost-effectiveness and sustainability.

In conclusion, the literature cited highlights, on the one hand, the importance of local authorities in implementing sustainability ([Siboni and Sangiorgi 2013](#)) and, on the other, the concentration of scholars on sustainability reporting aspects. Hence, the aim of the present work was to investigate a model that integrates sustainability management into the planning and control cycle of the local authority.

In this work, therefore, (i) in view of the importance that we believe should be given to sustainability, (ii) in order to go beyond the focus on reporting and (iii) to give greater scope to the results obtained in terms of sustainability, we chose to investigate sustainability by considering both the preventive planning phase and the final measurement phase.

3. Research Methodology

In an attempt to achieve the research objective, the applied research methodology was that of the *case study* ([Yin 2017](#)), which, in this work, was of an explanatory type, allowing for theoretical generalization ([Gomm et al. 2000](#)). The analysis of specific socioeconomic realities and managerial choices made in them does not allow for empirical generalization towards an aggregate of elements due to the presence of numerous specific elements characterizing the reality studied ([Gillham 1999](#)).

Moreover, the choice of a case study is inspired by the approach of institutional processualism ([Barzelay and Gallego 2006](#)): Just as the processualist approach is particularly attentive to interaction during the process ([Abbott 2001](#)), and the institutional approach considers how interaction is influenced by a stable context ([Thelen 1992](#)), institutional processualism is strongly interested in how interaction can be nurtured by the context ([Tendler 1997](#)).

This approach started by analyzing public management reforms by seeking to achieve a causal understanding of processes such as organizational decision-making, organizational change and policymaking ([Barzelay 2001](#)). This, through a coherent set of historically grounded analytical generalizations ([Abbott 2001](#)), aimed at understanding “public management policy change”, defined as the set of government-wide administrative practices in different areas of public management, including audit and evaluation.

Therefore, through the case study, the process characterizing the sustainability management model tested was analyzed in order to investigate the interactions carried out during the process and how they were influenced by the context, contributing to the debate on institutional processualism.

In particular, the choice was made to analyze the experience of an Italian municipality, adopting, therefore, the single case study option (Eisenhardt 1989; Baxter and Jack 2008) on the basis of the rationale that there was a case relevant to the object of analysis (Yin 2017). The municipality analyzed was chosen because it assumed the role of experimenter of the sustainability management model presented in this paper, making this case unique and singular. In other words, this model was the result of a three-year research project that engaged the analyzed municipality as an experimenter through the implementation of the various aspects (in terms of approach, procedures and tools/documents) characterizing the model itself.

The research design included multiple *embedded units of analysis*. In the following, for each unit of analysis, the source used for data acquisition is also indicated:

1. The first unit of analysis focused on the sustainability management model with reference to its characterizing elements (tools, measurement parameters, etc.). The source of the data and information is a documentary analysis (Bowen 2009) based, essentially, on the Executive Management Plan/Performance Plan, the Strategic Control Report/Performance Report, the Management Report and the Excel workbooks used to measure the degree of user satisfaction;
2. The second unit of analysis examined the sustainability management system from the point of view of the top management of the institution. With regard to this unit of analysis, the data are derived from semi-structured interviews (Kvale and Brinkmann 2009) through which the main technical aspects related to the testing of the model were explored;
3. The third unit of analysis examines the sustainability management model in terms of the phases carried out and the subjects involved in testing it. In this third unit of analysis of the case study, information and data were generated through the technique of direct observations (Bailey 1982) of an unstructured and disguised type (in order not to condition the subjects observed).

The use of the case study methodology, through the use of different units of analysis, made it possible to analyze the object of the research, represented by the sustainability management model, from different points of view (integrating the data and information collected): the documents pertaining to the system, the top management responsible for testing the model and the process and the subjects involved in various aspects of experimentation and, therefore, in the operation of the proposed model.

The data recorded and the information collected through the different sources mentioned above were used in the analysis of the case and relate to the three-year period 2015–2018, during which the sustainability management model for local authorities was defined and tested for the first time.

4. Sustainability Cycle in Local Authorities: A Case Study

The sustainability management model that is the subject of this case study was developed during a three-year research project. It is a model whose initial version derives from the analysis of literature and practice in the field of sustainability but which was subsequently modified to incorporate certain variations arising from experimentation with it. In the final analysis, therefore, the model described here combines the insights gained from the analysis of literature and practice with what emerged during its implementation.

The model is illustrated by referring to what emerged during its experimentation with respect to the main elements that characterize it, which are briefly listed below:

1. The approach that underlies the implementation of a sustainability management system in local authorities;
2. The dimensions of sustainability that are taken into consideration;

3. The stages of the sustainability management cycle and integration with the documents in use in local authorities;
4. Elements of sustainability measurement in local authorities.

Approach: The model envisages two possible approaches for the development of a sustainability management system in local authorities:

The autonomous approach, which considers sustainability management processes separately from the other processes which take place in local authorities, both from the point of view of logic and the tools which can be used (strong point: recognizing a specific role for sustainability; weak point: perception of an increase in workload on the part of the structure of the authority, which sees the monitoring of sustainability as a fulfilment);

The integrated approach, which considers the various aspects connected with sustainability management as integrated into the wider management of the local public company as a whole (strength: synergy arising from the joint treatment of several aspects of management, avoiding the proliferation of documents in which similar information could be repeated and allowing an overall view of the public company; weakness: risk of sustainability being underestimated compared to other more important aspects contained in the documents chosen for integration).

As shown by the interviews with top management, of the two approaches just briefly mentioned, in the case study municipality the integrated approach was chosen, which, furthermore, was considered in its twofold meaning:

1. Integration of sustainability-related processes with respect to the cycle and to the planning and control documents used by local authorities, in order to avoid an increase in workload, to consider sustainability as an element of the overall performance of a local authority and not as a separate aspect, avoiding the logic of “watertight compartments”;
2. Integration between the planning phase of sustainability objectives and the monitoring phase of their achievement, overcoming, moreover, both the limitation revealed by the analysis of literature and practice of focusing essentially on the final phase of sustainability reporting, and a critical aspect that often characterizes local authority processes and sees the planning phase disconnected from the final reporting phase.

Dimensions of sustainability: The dimensions of sustainability taken into account by the model are environmental, social and economic. In addition, the interviews highlighted how the authority proved to be innovative by welcoming an additional dimension of sustainability represented by culture. Considering both the undoubted cultural vocation of Italy, in general, and of the municipality analyzed, in particular, as well as the effects that culture has on other factors of human action (culture as a founding element of human thought and action), the sustainability management model tested also considers cultural sustainability (Duxbury and Jeannotte 2012).

Moreover, alongside the dimensions of sustainability mentioned above, this model also considers the financial dimension (López Subires and Rodríguez Bolívar 2017; De Matteis and Preite 2018) of sustainability. This is defined as the availability of financial resources to be used rationally to achieve the institutional objectives of public sector organizations. In other words, financial sustainability can be considered as the ability of the government to provide public services (maintaining or increasing social welfare) at a quantitative and qualitative level through a rational use of available financial resources that allows the tax burden to be contained (primary source of financial resources in public administration), without compromising the satisfaction of the needs of future generations.

The model considers financial sustainability as a transversal element of the environmental, social, economic and cultural dimensions of sustainability. Therefore, financial aspects are considered here as elements to be measured for each of the other four dimensions of sustainability, in order to define the overall sustainability profile of a local authority.

The phases of the sustainability management cycle and integration with the documents used by local authorities: The model tested does not stop at measuring sus-

tainability results in the final phase of the financial year but rather considers the entire sustainability cycle.

With reference to the integration of sustainability processes with the planning and control cycle and documents used by local authorities, from the interviews the decision to integrate sustainability aspects into the Executive Management Plan (EMP) unified with the Performance Plan (henceforth EMP/PP) from a documentary point of view emerged.

In the integrated approach followed in this model, the EMP/PP was considered the pivotal document around which the sustainability planning/management/control cycle revolves because:

- It is an instrument that, by its very nature, is a programming document that contains both a reference to strategic objectives (of political origin) and the identification of operational objectives;
- It is a document that, in addition to fulfilling a programming function, is also created for control purposes. It is a document that stems, on the one hand, from an organic unification of the EMP that is used in the final phase for the evaluation of management and, on the other, of the Performance Plan that is the basis for the drafting of the year-end Performance Report in which the degree of achievement of the strategies of the local authority is measured;
- It is a document that, if correctly interpreted and implemented, must lay the foundations for a management phase that, starting from the definition of objectives, prepares processes and tools to collect the data and information necessary for the subsequent control phase;
- It is a document that provides a link to the accounting data contained in the budget and therefore also allows for the consideration of financial aspects related to the sustainability objectives of the municipality.

Elements of sustainability measurement: The model proposed here is based on four elements used to assess the sustainability profile of the local authority. These elements are quantified by indicators which, in most cases, relate what has been planned to the result actually achieved. Therefore, for each element, a value expressed in percentage terms is arrived at, and the average of these values—thus considering equivalently the weight of each element analyzed—leads to the measurement of the level of sustainability (environmental, social, economic and cultural) of the local authority.

It is important to highlight that, in this case study, the measurement of sustainability elements, as well as the data collection to support the measurement process, is fundamentally based on Excel spreadsheets. This choice can be justified by the fact that this is an experimental model of sustainability management which, therefore, must reach a definitive version before migrating to more articulated software.

The four elements analyzed and measured for the evaluation of the sustainability profile of the local authority are the following:

1. Level of achievement of objectives;
2. Level of customer satisfaction expressed by users;
3. Level of financial commitment of the local authority;
4. Level of general sustainability of the previous year.

Level of achievement of objectives: From the EMP/PP it is possible to identify, for each sector of the authority, the planned objectives relating to each of the four dimensions of sustainability considered.

The structure of the EMP/PP sheets was set up in such a way as to identify for each objective, together with other information, the following: the weight, the actions and the estimated time of achievement for each action necessary to pursue the objective (time schedule), result indicators and related targets (expected value of the indicators), the strategic area of reference (corresponding to the mandate line) and the references to the codes of missions and budget programs from which the resources are drawn for the achievement of each objective.

The parameters used to determine the level of achievement of the objectives are represented by compliance with timeframes and compliance with targets. The first derives—by deducing data from the time schedule contained in the EMP/PP—from the ratio between the number of activities underlying an objective that were carried out according to the planned time schedule and the total number of activities planned for that objective. The second derives from the average of the deviations between the expected value (target) and the actual value of the result indicators related to each objective. Finally, in order to obtain a measure of the level of achievement of the objective, the average of the values of the two parameters above was determined for each sustainability objective.

The average of the percentages of achievement of all the objectives relating to each sustainability dimension makes it possible to determine the level of achievement of the environmental, social, cultural and economic sustainability objectives.

The objectives considered for each sustainability dimension are selected from among all the entity's objectives on the basis of their relevance to the budget missions related to those dimensions. In other words, the objectives related to cultural sustainability are those for which, in the EMP/PP, the link to budget Mission no. 5 ("Protection and enhancement of cultural heritage and activities") was inserted, the environmental sustainability objectives are those related to Mission no. 9 ("Sustainable development and protection of the territory and the environment"), the social sustainability objectives are those linked to Mission no. 12 ("Social rights, social policies and the family") and the economic sustainability objectives are grouped under Mission no. 14 ("Economic development and sustainability").

Level of customer satisfaction: In this model the level of satisfaction of users of services related to the environment, social services, services related to economic development and services related to the cultural sector is a fundamental element in determining the level of sustainability: The degree of customer satisfaction is one of the essential elements in understanding whether the authority is meeting the needs of the community and how to continue to provide services.

In order to assess the degree of customer satisfaction, the interviews highlighted the development of a process that began with the mapping of all the services provided by the local authority: If the municipality's service charter was not up to date, a survey of all the services provided was carried out in order to obtain a complete overview of the activities carried out. This activity is essential because, on the basis of the mapping carried out, the services to be subjected to customer satisfaction analysis were selected, starting with those with a high impact on the community.

Once the services were selected, a customer satisfaction questionnaire was developed that considers both the possibility of detecting the degree of user satisfaction on specific aspects of the service under investigation, and the presence of elements common to all services in order to aggregate data for each dimension of sustainability. In the municipality in question, in the period under consideration, 31 services provided (in relation to the four dimensions of sustainability considered) were subjected to customer satisfaction surveys and analyses, for a total of 443 questionnaires filled out by users.

This approach, once the survey was carried out (at the authority's offices in the manner deemed most appropriate each time depending on the type of service—e.g., in some cases online, in others in person), made it possible to transform the qualitative preferences expressed by users into aggregate percentage values for each dimension of sustainability in order to obtain the level of customer satisfaction for each of them.

Level of financial commitment: As previously mentioned, in this model financial aspects are considered an element to be taken into account for each dimension of sustainability in order to define the overall sustainability profile of a local authority. In particular, the degree of financial involvement/attention of the local authority regarding the issues covered by the four sustainability dimensions analyzed was taken into account. This is because financial commitment is one of the indices that, on the one hand, highlights the financial attention of the authority towards sustainability, and, on the other, represents an indicator of the degree to which the local authority's policies on sustainability have been implemented.

In particular, in order to define the level of financial commitment of the authority in terms of sustainability, for budget missions 5, 9, 12 and 14 the following were determined:

The ratio of financial commitments to expenditure forecasts. This indicator expresses the degree of compliance/reliability of the sustainability forecasts;

The ratio of payments to financial commitments. This indicator expresses the degree of realization (from a financial point of view) of the entity's activities in areas related to the four dimensions of sustainability considered by this model.

The overall level of financial commitment was measured by the average of the percentage values assumed by the indicators mentioned above, thus arriving at a single percentage value for each dimension of sustainability, which summarized the level of financial commitment of the local authority.

Level of sustainability in the current year: The average of the three indicators described above (level of achievement of objectives, level of customer satisfaction, level of financial commitment) gives the level of sustainability for the current year (i.e., the year under analysis).

General sustainability level of the previous year: Implicit in the concept of sustainability is intergenerational equity, hence the need to take it into account. In this model we chose to consider the time element by considering, as an element of evaluation of the degree of sustainability of the local authority, the level of general sustainability of the previous year. Thus, past actions form part of the definition of the current sustainability profile.

Overall sustainability level: The average between the sustainability level of the current year and the general sustainability level of the previous year leads to the measurement of the general sustainability level of the authority.

In this case, since only the first year of testing the sustainability management model was available, the current year's sustainability level (81%) coincides with the general sustainability level.

5. Discussion

The analysis of the model, which is open to improvement, allows for some elements of discussion as follows:

1. The sustainability management model tested considers the entire sustainability planning and control cycle. Therefore, the focus is not only on reporting (as highlighted by the literature analysis), but also the need to develop skills in planning sustainability objectives is emphasized (Zeemering 2018), giving greater strength to the reporting itself (comparable to planned objectives and not limited to a state-of-the-art report on sustainability);
2. The proposed model, in addition to the integration between programming and control mentioned in the previous point, suggests the integration of sustainability policies (Figueira et al. 2019) in the documents used by local authorities (especially in the programming phase). This avoids adding to the workload of the municipal sectors involved, provides an impetus for a managerial approach to these documents (seeking to limit the compliance approach to them) and could contribute to the effectiveness of implementing sustainability policies;
3. The model provides a single summary percentage figure for each of the sustainability dimensions considered and for the overall sustainability of the local authority (without prejudice to the possibility of obtaining the more analytical information from which the summary measure is derived). This is particularly significant from the point of view of readability and streamlining of information both for external readers (who may not have the skills to understand the procedure behind the final synthetic value) and for internal users (politicians and managers) who are characterized by a lack of time and, therefore, are more inclined to want the availability of a few clear pieces of data (which can be further investigated), rather than overly voluminous documents;
4. The model presented is characterized by its replicability in local governments because its essential elements can be found in all local authorities. In particular, in the model

attention is paid to the trade-off between standardization (the main elements of the model are fixed and the same for all entities) and adaptation to the characteristics of the entity that implements it (e.g., methods/services on which to measure customer satisfaction; structure of the EMP/PP form);

5. The implementation of the model presented can also act as an impetus for obtaining other results with respect to determining the level of sustainability: this refers, in particular, to the support that the model can provide for strategic control, management control and the detection of customer satisfaction (in the model, this is envisaged in relation to the dimensions of sustainability considered, but it can also be usefully detected in areas outside those more directly connected to sustainability).

6. Conclusions

The managerial literature on the subject of sustainability has essentially focused on the reporting phase through the determination of sustainability indicators. Hence, the objective that guides this work is to investigate a model that integrates sustainability management into the planning and control cycle of the local authority. The research methodology used to achieve this objective was that of the single case study with multiple units of analysis. The case of the municipality that acted as the testing public organization for the model was analyzed.

The model tested is aimed at determining the level of sustainability (environmental, social, economic, cultural) in local authorities through the use of an integrated approach and the measurement of certain elements (achievement of objectives, customer satisfaction, financial commitment, level of sustainability in the previous year) relating to the sustainability profile of a local authority.

Finally, the analysis carried out allows for the formulation of some useful concluding remarks for politicians and public managers concerning:

1. Political will. The lack of real political will to develop a sustainability management model is perceived at a managerial level and throughout the administrative structure, thus undermining the effectiveness of the model itself;
2. The need for training (Bryant and Thomson 2021):
 - To develop the sustainability skills needed to implement the model;
 - To create consensus on the model. Experimentation has shown that it is not effective to bring in an innovative model/aspect from outside the local authority if it is not shared by the internal structure. Internal sharing is not easy, both due to its very nature—as it concerns the cultural profile of those who work in the local authority—and when it has to be achieved in a rather short time. Adequate training support is therefore essential to address these critical issues.
3. The need to develop a specific software related to the implementation of the model, both for data collecting, and for the elaboration of sustainability indicators. This would allow the model to speed up its related processes and be more easily shared among its users, including citizens. Indeed, the use of digital technologies is a fundamental factor of sustainable development (Burlacu et al. 2021)
4. The dissemination of the model despite its “non-compulsoriness”. The implementation of the described model also in other local authorities would be desirable in order to identify further strengths and weaknesses and, consequently, to optimize its applicability, functioning and possibility of benchmarking. Dissemination is facilitated by the fact that the analyzed model uses documents that are in use by law in all local authorities.

The main limitation of the work is represented by the fact that it analyzes a model of sustainability management contextualized within the Italian local government, characterized by its own management and regulatory characteristics. At the same time, we think that the logic underlying the model (link between objectives–actions–results of sustainability) can be usefully replicated outside the Italian context.

A further limitation of the work is represented by the use of a single case study on a complex model that provides numerous elements of investigation. In this regard, we hope for longitudinal advancement in the use of the model in order to be able to develop future research by applying the multiple case study methodology.

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References

- Abbott, Andrew. 2001. *Time Matters: On Theory and Method*. Chicago: University of Chicago Press.
- Bailey, Kenneth. 1982. *Methods of Social Research*, 2nd ed. New York: The Free Press.
- Ball, Amanda. 2002. *Sustainability Accounting in UK Local Government: An Agenda for Research*. London: Association of Chartered Certified Accountants (ACCA), Research Report, n. 78.
- Ball, Amanda. 2004. A Sustainability Accounting Project for the UK Local Government Sector? Testing the Social Theory Mapping Process and Locating a Frame of Reference. *Critical Perspectives on Accounting* 15: 1009–35. [\[CrossRef\]](#)
- Ball, Amanda, and Jan Bebbington. 2008. Accounting and Reporting for Sustainable development in Public Service Organisations: Issues and emerging directions. *Public Money and Management* 28: 323–25. [\[CrossRef\]](#)
- Ball, Amanda, Suzana Grubnic, and Jeff Birchall. 2014. Sustainability accounting and accountability in the public sector. In *Sustainability Accounting and Accountability*, 2nd ed. Edited by Bebbington Jan, Unerman Jeffrey and O'Dwyer Brendan. London: Routledge.
- Barzelay, Michael. 2001. *The New Public Management: Improving Research and Policy Dialogue*. Berkeley: University of California Press.
- Barzelay, Michael, and Raquel Gallego. 2006. From “New Institutionalism” to “Institutional Processualism”: Advancing Knowledge about Public Management Policy Change. *Governance: An International Journal of Policy, Administration, and Institutions* 19: 531–57.
- Baxter, Pamela, and Susan Jack. 2008. Qualitative case study methodology: Study design and implementation for novice researchers. *The Qualitative Report* 13: 544–59.
- Bebbington, Jan, and Jeffrey Unerman. 2018. Achieving the United Nations Sustainable Development Goals. *Accounting, Auditing and Accountability Journal* 31: 2–24. [\[CrossRef\]](#)
- Bebbington, Jan, and Rob Gray. 2001. An Account of Sustainability: Failure, Success and a Reconceptualisation. *Critical Perspectives on Accounting* 12: 557–605. [\[CrossRef\]](#)
- Belkhir, Lotfi, Sneha Bernard, and Samih Abdelgadir. 2017. Does GRI reporting impact environmental sustainability? A cross-industry analysis of CO2 emissions performance between GRI-reporting and non-reporting companies. *Management of Environmental Quality: An International Journal* 28: 138–55. [\[CrossRef\]](#)
- Borgonovi, Elio, Paola Adinolfi, Rocco Palumbo, and Gabriella Piscopo. 2018. Framing the Shade of Sustainability in Health Care: Pitfalls and Perspectives from Western EU Countries. *Sustainability* 10: 4439. [\[CrossRef\]](#)
- Bowen, Glenn A. 2009. Document analysis as a qualitative research method. *Qualitative Research Journal* 9: 27–40. [\[CrossRef\]](#)
- Bruff, Garreth E., and Adrian P. Wood. 2000. Local Sustainable Development: Land-Use Planning's Contribution to Modern LG. *Journal of Environmental Planning and Management* 43: 519–39. [\[CrossRef\]](#)
- Bryant, Jayne, and Giles Thomson. 2021. Learning as a key leverage point for sustainability transformations: A case study of a local government in Perth, Western Australia. *Sustainability Science* 16: 795–807. [\[CrossRef\]](#)
- Burlacu, Sorin, Maria Loredana Popescu, Amelia Diaconu, and Alexandra Sârbu. 2021. Digital Public Administration for Sustainable Development. *European Journal of Sustainable Development* 10: 33–40.
- De Matteis, Fabio, and Daniela Preite. 2018. Sustainability Management and Local Governments: A Proposal to define the Role of Financial Sustainability. In *Financial Sustainability and Intergenerational Equity in Local Governments*. Edited by Manuel Pedro Rodriguez Bolivar and Maria Deseada Lopez Subires. Hershey: IGI Global.
- De Matteis, Fabio, Daniela Preite, Fabrizio Striani, and Elio Borgonovi. 2021. Cities' role in environmental policy: The Italian experience. *Cities* 111: 102991. [\[CrossRef\]](#)
- del Mar Alonso-Almeida, Maria, Frederic Marimon, Fernando Casani, and Jesus Rodriguez-Pomeda. 2015. Diffusion of sustainability reporting in university: Current situation and future perspective. *Journal of Cleaner Production* 106: 144–54. [\[CrossRef\]](#)
- del Mar Alonso-Almeida, María, Josep Llach, and Frederic Marimon. 2014. A Closer Look at the “Global Reporting Initiative” Sustainability Reporting as a Tool to Implement Environmental and Social Policy: A Worldwide Sector Analysis. *Corporate Social Responsibility and Environmental Management* 21: 318–35. [\[CrossRef\]](#)

- Domingues, Ana Rita, Rodrigo Lozano, Kim Ceulemans, and Tomas B. Ramos. 2017. Sustainability reporting in public sector organizations: Exploring the relation between the reporting process and organizational change management for sustainability. *Journal of Environmental Management* 192: 292–301. [CrossRef] [PubMed]
- Dumay, John, James Guthrie, and Federica Farneti. 2010. GRI Sustainability Reporting Guidelines for Public and Third Sector Organizations. *Public Management Review* 12: 531–48. [CrossRef]
- Duxbury, Nancy, and M. Sharon Jeannotte. 2012. Including culture in sustainability: An assessment of Canada's Integrated Community Sustainability Plans. *International Journal of Urban Sustainable Development* 4: 1–19. [CrossRef]
- Eisenhardt, Kathleen M. 1989. Building theories from case study research. *Academy of Management Review* 4: 532–50. [CrossRef]
- Farneti, Federica, and James Guthrie. 2009. Sustainability Reporting by Australian Public Sector Organisations: Why They Report. *Accounting Forum* 33: 89–98. [CrossRef]
- Figueira, Inês, Ana Rita Domingues, Sandra Caeiro, Marco Painho, Paula Antunes, Rui Santos, Nuno Videira, Richard M. Walker, Donald Huisingh, and Tomás B. Ramos. 2019. Sustainability policies and practices in public sector organisations: The case of the Portuguese Central Public Administration. *Journal of Cleaner Production* 202: 616–30.
- Fonseca, Alberto, Mary Louise McAllister, and Patricia Fitzpatrick. 2012. Sustainability reporting among mining corporations: A constructive critique of the GRI approach. *Journal of Cleaner Production* 84: 70–83. [CrossRef]
- Galli, Alessandro, Katsunori Iha, Sara Moreno Pires, Maria Serena Mancini, Armando Alves, Golnar Zokai, David Lin, Adeline Murthy, and Mathis Wackernagel. 2020. Assessing the Ecological Footprint and biocapacity of Portuguese cities: Critical results for environmental awareness and local management. *Cities* 96: 102442. [CrossRef]
- Gillham, Bill. 1999. *Case Study Research Methods*. London: Continuum.
- Gomm, Roger, Martyn Hammersley, and Peter Foster, eds. 2000. *Case Study Method*. Key Issues. London: Sage.
- Gray, Rob. 2006. Social, Environmental and Sustainability Reporting and Organizational Value Creation: Whose Value? Whose Creation? *Accounting, Auditing and Accountability Journal* 19: 793–819.
- Guthrie, James, and Federica Farneti. 2008. GRI Sustainability Reporting by Australian Public Sector Organizations. *Public Money and Management* 28: 361–66.
- Hahn, Rüdiger, and Regina Lülfs. 2014. Legitimizing Negative Aspects in GRI-Oriented Sustainability Reporting: A Qualitative Analysis of Corporate Disclosure Strategies. *Journal of Business Ethics* 123: 401–20. [CrossRef]
- Homann, Karl. 1996. Sustainability: Politikvorgabe oder regulative Idee? In *Ordnungspolitische Grundfragen einer Politik der Nachhaltigkeit*. Edited by Gerken L. Baden-Baden: Nomos, pp. 33–47.
- Isaksson, Raine, and Ulrich Steimle. 2008. What does GRI-Reporting tell us about Corporate Sustainability? Paper presented at the 1st QMOD Conference, Helsingborg, Sweden, August 20–22.
- Kaur, Amanpreet, and Sumit K. Lodhia. 2014. The state of disclosures on stakeholder engagement in sustainability reporting in Australian local councils. *Pacific Accounting Review: Special issue on Sustainability Accounting and Reporting* 26: 54–74.
- Kuhlman, Tom, and John Farrington. 2010. What is sustainability? *Sustainability* 2: 3436–48.
- Kvale, Steinar, and Svend Brinkmann. 2009. *InterViews: Learning the Craft of Qualitative Researching Interviewing*. London: Sage.
- Laurian, Lucie, Mark Walker, and Jan Crawford. 2017. Implementing Environmental Sustainability in Local Government: The Impacts of Framing, Agency Culture, and Structure in US Cities and Counties. *International Journal of Public Administration* 40: 270–83. [CrossRef]
- López Subires, María Deseada, and Manuel Pedro Rodríguez Bolívar. 2017. Financial Sustainability in Governments. A New Concept and Measure for Meeting New Information Needs. In *Financial Sustainability in Public Administration*. Edited by Manuel Pedro Rodríguez Bolívar. London: Palgrave MacMillan.
- Marimon, Frederic, María del Mar Alonso-Almeida, Martha del Pilar Rodríguez, and Klender Aimer Cortez Alejandro. 2012. The worldwide diffusion of the global reporting initiative: What is the point? *Journal of Cleaner Production* 33: 132–44.
- Moneva, José M., Pablo Archel, and Carmen Correa. 2006. GRI and the camouflaging of corporate unsustainability. *Accounting Forum* 30: 121–37.
- Montecalvo, Monica, Federica Farneti, and Charl De Villiers. 2018. The potential of integrated reporting to enhance sustainability reporting in the public sector. *Public Money and Management* 38: 365–74.
- Murcott, Susan. 1997. What is Sustainability? Paper presented at AAAS Annual Conference, IIASA, Sustainability Indicators Symposium, Seattle, WA, USA, February 16.
- Nuhu, Nuraddeen Abubakar, Kevin Baird, and Ranjith Appuhami. 2019. The impact of management control systems on organisational change and performance in the public sector: The role of organisational dynamic capabilities. *Journal of Accounting & Organizational Change* 15: 473–95.
- Pezzey, John. 1992. Sustainability: An Interdisciplinary Guide. *Environmental Values* 1: 321–62. [CrossRef]
- Pope, Jenny, David Annandale, and Angus Morrison-Saunders. 2004. Conceptualising sustainability assessment. *Environmental Impact Assessment Review* 24: 595–616. [CrossRef]
- Rodríguez, Rocio, Göran Svensson, and David Eriksson. 2018. Organizational positioning and planning of sustainability initiatives: Logic and differentiators. *International Journal of Public Sector Management* 31: 755–74. [CrossRef]
- Rogers, Peter P., Kazi F. Jalal, and John A. Boyd. 2008. *An Introduction to Sustainable Development*. London: Earthscan.
- Siboni, Benedetta, and Daniela Sangiorgi. 2013. Genesis and Development of the European Communication on Sustainability in Local Governments. *International Journal of Advances in Management Science* 2: 43–49.

- Tendler, Judith. 1997. *Good Government in the Tropics*. Baltimore: Johns Hopkins University Press.
- Thelen, Kathleen. 1992. Historical Institutionalism in Comparative Politics. In *Structuring Politics: Historical Institutionalism in Comparative Analysis*. Edited by Sven Steinmo, Kathleen Thelen and Frank Longstreth. New York: Cambridge University Press.
- Tracey, Strange, and Bayley Anne. 2008. *Sustainable Development. Linking Economy, Society, Environment*. Paris: OECD Publishing.
- Wang, Xiaohu, Montgomery Van Wart, and Nick Lebredo. 2014. Sustainability Leadership in a Local Government Context. *Public Performance & Management Review* 37: 339–64.
- Williams, Belinda, Trevor Wilmshurst, and Robert Clift. 2011. Sustainability reporting by local government in Australia: Current and future prospects. *Accounting Forum* 35: 176–86. [\[CrossRef\]](#)
- Williams, Paul M. 2002. Community Strategies: Mainstreaming Sustainable Development and Strategic Planning? *Sustainable Development* 10: 197–205. [\[CrossRef\]](#)
- World Commission on Environment and Development. 1987. *Our Common Future*. Oxford: Oxford University Press.
- Yin, Robert K. 2017. *Case Study Research and Application: Design and Methods*. Los Angeles: SAGE.
- Zeemering, Eric S. 2018. Sustainability management, strategy and reform in local government. *Public Management Review* 20: 136–53. [\[CrossRef\]](#)