

## **A performance measurement system to control investee companies: The Case of the Municipality of Turin**

**Alberto Sardi\***

University of Turin - Department of Management

**Silvia Sinicropi**

University of Turin - Department of Management

**Enrico Sorano**

University of Turin - Department of Management

**Valter Cantino**

University of Turin - Department of Management

SUMMARY: 1. Introduction – 2. Literature background – 3. Methodology – 4. Findings – 5. Discussion – 6. Conclusion

---

*The paper aims to identify an approach for designing an efficient performance measurement system for controlling unlisted investee companies of public bodies. The authors undertook action research at the Municipality of Turin and its unlisted investee companies over 2 years. The results describe a performance measurement system and a bottom-up approach for performance measurement of unlisted investee companies. The paper describes a practical example of how to develop a performance measurement system based on specific public needs. It also gives suggestions on the design and implementation of performance measurement in the public context.*

---

*Cet article traite du développement d'un système de mesure de la performance au niveau du réseau intra institutionnel. Les auteurs ont mené une recherche-action chez la municipalité de Turin et ses entreprises participées non cotées, pendant une période de 2 ans. Les résultats montrent un système de mesure du rendement basé sur une approche bottom-up. L'article montre un exemple pratique de la façon de développer un système de mesure des performances basé sur les besoins d'une administration locale. L'article fournit également des suggestions sur la conception et la mise en œuvre de mesures de performance dans le contexte public.*

---

*Questo articolo presenta un approccio per progettare un efficiente sistema di misurazione delle prestazioni utile a controllare le società partecipate non quotate della Città di Torino. Attraverso un'action research presso la Città di Torino e le sue società partecipate non quotate per un periodo di 2 anni, l'articolo propone un nuovo approccio bottom-up per sviluppare un sistema di misurazione delle prestazioni. Attraverso l'esempio pratico, incentrato sulle esigenze di un'amministrazione locale, si forniscono suggerimenti sulla progettazione di un sistema di misurazioni delle prestazioni in un specifico contesto pubblico.*

We would like to thank the Municipality of Turin for its collaboration in this action research. We would also like to thank employees for comments, suggestions and active participation of this project. Our gratitude goes to the Mayor of Turin Dr Chiara Appendino, Assessor Sergio Rolando, Director of Municipal Participation Area Dr Antonino Calvano, Manager of Municipal Participation Dr Ernesto Pizzichetta, Dr Dario Rinaudo, Dr Leonardo Niglia, Dr Claudia Garino, Dr David Piovano, Dr Stefania Campagnolo and Dr GianCristian Conti.

Corresponding author: Department of Management, University of Turin, corso Unione Sovietica 218 bis – 10134 Torino; email: [alberto.sardi@unito.it](mailto:alberto.sardi@unito.it)

Article received 14/06/2020 - accepted 1/02/2021

**Keywords:** performance measurement system, performance management system, public sector  
**Mots clés:** système de mesure de la performance, gestion de la performance, contexte public  
**Parole chiave:** sistema di misurazione delle prestazioni, gestione delle prestazioni, settore pubblico

## 1. Introduction

Since New Public Management reform, central administrations have demanded a business-management approach from public organisations aimed at improving the efficiency and effectiveness of their actions (Hood, 2001). According to this requirement, public organisations have implemented management models adopted by large private organisations (Northcott and Ma'amora Taulapapa, 2012; Toor and Ogunlana, 2010). In this scenario, the administrative and bureaucratic regulations have also increased (Hood and Scott, 1996; Di Mascio and Natalini, 2013). Central administrations have also required public organisations to exercise rigorous bureaucratic control to achieve public objectives. To meet bureaucratic requirements, public organisations have designed more limiting regulatory frameworks (Hood and Scott, 1996; Di Mascio and Natalini, 2013).

This scenario strengthens the performance paradox involving two completely contrasting lines. On the one hand, New Public Management reform expressly requires strategic decisions to maximize efficiency and effectiveness, on the other bureaucratic regulation poses challenging constraints that public organisations must face achieving results (Agostino and Arnaboldi, 2015; Barbato and Turri, 2017).

To measure and manage performance, public organisations implemented approaches used by large enterprises such as Balanced Scorecard and Performance Prism. However, these approaches do not fit the need of public organisations. The literature highlights a great challenge in developing efficient performance measurement system in public organisations (Arnaboldi *et al.*, 2015; Arnaboldi and Azzone, 2010; Garenigo and Sardi, 2020). It is becoming progressively relevant in the study of European local government (Bel and Warner, 2015; Casula, 2020; Silvestre *et al.*, 2018).

The paper aims to identify an approach for designing an efficient performance measurement system for controlling unlisted investee companies of public bodies. The results describe a bottom-up approach and a practical example of how to develop a performance measurement system based on specific needs.

The originality of this study is the continuous communication and strong engagement with the public managers for developing a useful performance measurement system that people "want to use" because it is based on their specific control needs.

## 2. Literature background

Since the 1980s and under the lens of New Public Management reform, many governments have reformed their respective public sectors moving from the bureaucratic to the managerial vision trying to improve overall public performance (Cepiku *et al.*, 2017; Heinrich, 2007). In this scenario, performance measurement became a key management process in public sector reform for improving efficiency, transparency and performance.

Designing efficient performance measurement is highly critical for public organisations because they often act without a clear strategy, owing to the many stakeholders involved having high levels of autonomy and different laws, culture and standards (Agostino and Arnaboldi, 2015; Arnaboldi *et al.*, 2015; Arnaboldi and Azzone, 2010; Barbato and Turri, 2017). Efficient performance measurement should allow performance management by a balanced and holistic measurement system supporting the decision-making process (Sardi *et al.*, 2020; Smith and Bititci, 2017). It should include performance communication management, relationship management and continuous improvement and learning (Bourne *et al.*, 2018; Sardi *et al.*, 2019). Moreover, it should control strategy implementation within the organisation, commit function management to organisational performance and assess a large number of tangible and intangible assets (Smith and Bititci, 2017; Swiatczak *et al.*, 2015). Performance measurement implemented in public organisations should also represent a congruence of general-purpose between units of public networks, which are essential to delivering many public goods and services (Bititci *et al.*, 2012; Sardi and Sorano, 2019). Although public organisations are always part of the inter-institutional network (Cristofoli *et al.*, 2014), they develop performance measurement systems independently. Public organisations think in terms of operations to achieve their own goals, without regard to public inter-institutional objectives (Rajala *et al.*, 2018). This happens because of the fragmentation of public mission among stakeholders and poor collaboration between public actors; thus, strategic public partnerships become a key factor for the effectiveness of any performance measurement system (Jacobs, 2009).

As for highlights from the academic literature, important research contributes to improving the knowledge of performance measurement and management in public organisations at national and international level (Agostino and Arnaboldi, 2018). This knowledge makes for better internal and external transparency for stakeholders, as well as better decision-making (Hammerschmid *et al.* 2013; McDavid and Huse 2012). Several studies describe the implementation performance measurement approaches used by private large organisations (Garengo and Sardi, 2020). However, these approaches were adopted for developing performance measurements in large private organisations through top-down implementation, rarely considering the organisation's peculiar characteristics, e.g. size, business, purpose, vision (Garengo and Biazzo, 2012). Although theoretically valid, they do not consider the key differences between organisations, thus resulting in poor adoption of these performance measurement approaches within the public context (Christensen and Lægheid, 2007; Laihonon *et al.*, 2014).

This complex public environment can be explained by the performance paradox theory (Meyer *et al.*, 1994). This theory describes a weak correlation between indicators and performance, as performance indicators lost their ability to represent bad and good performance over time (Meyer *et al.*, 1994). The performance paradox is even stronger in public or-

ganisations where contrasting pressures exist (Hood and Peters, 2004). The theory, based on increasing numbers of performance measures, poor strategic correlation between performance measures and continuous change of strategic objectives, well-represents a current public scenario. To improve these weak points, there is a need to involve public managers in designing performance measurement systems. Collaboration in performance measurement becomes a key factor for success in promoting the use of performance measurement systems (Smith and Bititci, 2017).

The literature leads scholars to reconceptualise performance measurement considering the high complexity of actual public environments and to rethink it through various perspectives (Arnaboldi *et al.*, 2015; Giacomelli *et al.*, 2019). Furthermore, it promotes innovative strategic performance management models able to integrate administrative compliances, managerial purposes and stakeholders' needs (Poister, 2010). As a consequence, the public sector needs a new approach that considers the peculiarities of these organisations. The theory of public management calls for approaches to design performance measurement system.

### 3. Methodology

This study is based on action research methodology (Coughlan and Coghlan, 2002). It was adopted by other studies to develop new knowledge (Gillespie *et al.*, 2018; Paolone *et al.*, 2020). We chose action research because it gives unique insights; it promotes the linkage between theory and practice, improving existing knowledge and applications in the performance measurement field. It supports scientific knowledge by involving researchers in this little-explored topic in a real context. Furthermore, it supports the organisation involved in solving specific problems by a strong commitment between researchers and managers (Garengo and Biazzo, 2012). Commitment facilitates access to a large amount of knowledge, which are rarely available from only one actor (Coughlan and Coghlan, 2002).

Action research was carried out at the Municipality of Turin and its unlisted investee companies, which were selected because they had recently implemented important national and local reforms. In the findings section, we explain the reasons for action and research.

#### *The Research Process*

The action research was a 2-year process according to a specific commitment\*<sup>1</sup>, involving almost 70 interviews/meetings by 4 researchers and 11 employees. The research process was shared with the Municipal-

<sup>1</sup> Accordo Quadro tra l'Università degli Studi di Torino, Dipartimento di Management, e la Città di Torino, n. rep. 395 del 24 maggio 2017.

Contratto di collaborazione scientifica tra l'Università degli Studi di Torino, Dipartimento di Management, e la Città di Torino, 2018.

Contratto di collaborazione scientifica tra l'Università degli Studi di Torino, Dipartimento di Management, e la Città di Torino, 2019.

ity of Turin and organised according to the steps suggested by Coughlan and Coughlan (2002).

*Understanding the context.* We highlighted the main information on the public administration and unlisted companies in question, regarding legal, account, size, group and classification, giving an understanding of the action research context. This step also gives the reason for action & research (Coughlan and Coughlan, 2002). The reason for this action for the Municipality is to strengthen internal controls of unlisted companies, as expressly required by article 147 quarter, Legislative Decree 267/2000. The reason for this research is to contribute a strategic and holistic performance measurement approaches, as required to the managerial literature (Arnaboldi *et al.*, 2015; Garengo and Sardi, 2020). Consequently, the overall purpose is to identify an approach for designing an efficient performance measurement system for controlling unlisted investee companies.

*Data collection.* We collected data through observations, semi-structured interviews and meetings. We carried out 18 semi-structured interviews with the City Mayor, the municipal participation area director and manager and other key employees (Yin, 2018). The questions of the semi-structured interviews were based on the form illustrated in Table 2. For instance, "What are the purposes of the Economic and Financial Control? What are the scopes of the Economic and Financial Control?" The data were recorded on a specific form (Table 2). By these investigation sources, we collated the information for each of the following control information:

- Scope
- Purpose
- Support
- Frequency (when to update and use the support)

Through Deliberation 208/2018, the Municipality defined the requirement to adapt the control system to ensure control compliance, to rationalize the overall measurement activities according to the standards specified by the Italian Court of Auditors and to increase the levels of economic management of the services provided. As required by Deliberation 208/2018 of the Municipality of Turin, we also collated the information for each of the following controls (see Table 2):

- Economic and Financial Control
- Legal Control
- In-house Control
- Strategic and Planning Control
- Quality Control

*Data analysis.* We analysed the data through a collaborative approach by researchers and public administrators. This approach assumed that companies know their organisation better than researchers (Coughlan and Coughlan, 2002). We carried out 28 interviews to ensure accurate

cy of analysis (Yin, 2018). This also allowed cataloguing and standardizing information according to a common standard, to eliminate distinctive features and individual character, thereby levelling and depersonalizing the survey.

*Design of a new performance measurement system.* Jointly with the administrators, we defined the key performance indicators for each investee company through 20 interviews. The key performance indicator describes the results of a strategic organisational activity (Kaplan and Norton, 1992). A performance measurement system should include about 25 to 30 key performance indicators, as suggested by literature (Marr, 2012). The definition of key performance indicators yielded a draft of strategic performance reports for each investee company. During the meetings with the companies, the reports were discussed and modified or integrated according to the specific needs of the inter-institutional network. After these integrations, the performance reports were submitted to the companies (see Figure 2). Finally, researchers and the administration developed an integrated performance measurement dashboard for the Municipality (see Figure 3).

#### 4. Findings

Located in the North West of Italy, Turin is the regional capital and seat of local government of the Piedmont Region, having been the first national capital from 1861 to 1865. City population is 875 million approx. Greater Turin is home to about 1.7 million people. It is an important centre of industry and commerce, forming the key "industrial triangle" with Milan and Genoa and ranking third in terms of economic strength and representing the lowest tier of administration within the State. The Municipality provides public and community services, including local road maintenance, registry records, etc., helped by public and private entities, e.g. state-owned, investee companies. Public partners include Region and Province local authorities performing as part of a complex inter-institutional structure. Action research focused on unlisted investee companies, which have recently been the subject of public reform. Eight unlisted companies were identified (see Table 1 for detailed information). The global ultimate owner of these firms is the Municipality of Turin.

Table 1 – Companies information (Latest results year 2018 - Source: Bureau van Dijk)

|                   |                           |                                  |   |   |                            |  |                                |  |
|-------------------|---------------------------|----------------------------------|---|---|----------------------------|--|--------------------------------|--|
| <b>Company</b>    | 5T S.r.l.                 | Gruppo Torinese Trasporti S.p.a. | Società Metropolitana Acque Torino S.p.a. | Infratrasporti.To S.r.l.                  | Società Riscossioni S.p.a. | Centro Agro-Alimentare Torino S.c.p.a. | AFC Torino S.p.a.              | Finanziaria Città di Torino Holding S.p.a. |
| <b>Legal form</b> | Limited liability company | One-person joint-stock company   | Joint stock company                       | One-person company with limited liability | Joint stock company        | Consortium by shares                   | One-person joint-stock company | Joint stock company                        |

- segue -

|  |  |   |  |   |                          |  |                                |                            |
|--|--|---|--|---|--------------------------|--|--------------------------------|----------------------------|
| <i>Date of incorporation</i>               | 08/07/1992                                 | 23/12/2002                                  | 17/02/2000                             | 17/05/2010  | 19/11/2004               | 27/11/1989                                     | 03/07/1995                     | 18/12/2003                 |
| <i>Turnover (EUR)</i>                      | 5.060.373                                  | 175.787.927                                 | 399.423.000                            | 22.256.120  | 20.832.882               | 5.900.620                                      | 14.262.404                     | 1.009.330                  |
| <i>Profit (EUR)</i>                        | 61.904                                     | 497.918                                     | 51.797.000                             | 384.679   | 1.065.617                | 101.800  | 1.061.520                      | 49.018.690                 |
| <i>Total assets (EUR)</i>                  | 5.225.648                                  | 666.301.095                                 | 1.205.539.000                          | 1.431.006.057                                     | 37.928.289               | 41.333.482                                     | 20.279.851                     | 602.347.919                |
| <i>Employees</i>                           | 61   | 4.539                                       | 983                                    | 34  | 71                       | 8  | 127                            | 1                          |
| <i>No. of companies in corporate group</i> | 15   | 15  | 15                                     | 15  | 15                       | 15   | 15                             | 15                         |
| <i>No. of recorded shareholders</i>        | 3  | 1   | 291                                    | 1   | 2                        | 13   | 1                              | 1                          |
| <i>No. of recorded subsidiaries</i>        | 0  | 14  | 7                                      | 0   | 0                        | 2  | 0                              | 13                         |
| <i>Trade Description</i>                   | Other supporting land transport activities | Urban and suburban passenger land transport | Water collection, treatment and supply | Construction of railways and underground railways | Tax collection companies | Managing public markets and public expenditure | Funeral and related activities | Activities of head offices |
| <i>Ateco 2007</i>                          | 522190                                     | 493100                                      | 360000                                 | 421200  | 829910                   | 829930   | 960300                         | 701000                     |

These companies are a key asset of the Municipality and its citizens. They employ almost 5,900 people with a turnover of about EUR 645 million and provide key services such as urban and suburban transport, water collection, treatment and supply.

These companies are responsible for managing valued public resources. The economic, environmental and social sustainability of this area also depends on efficient management of these companies.

To reconstruct current performance measurement based on existing data, we used a form explaining the scope and purpose of controls, the supports used to collect information and control frequency (see Table 2).

Table 2 – Framework of main controls

| <i>Control</i> | <i>Economic and Financial</i>   | <i>Legal</i>  | <i>In house providing</i>  | <i>Strategic and Planning</i>                 | <i>Quality Control</i>                        |
|----------------|---|---|--|---|---|
| <i>Scope</i>   | Leg. Decree 267/2000<br>Leg. Decree 175/2016<br>Deliberation 208/2018 | Leg. Decree 267/2000<br>Regulation n.361<br>Deliberation 208/2018 | Leg. Decree 175/2016<br>Leg. Decree 50/2016<br>Deliberation 208/2018 | Leg. Decree 267/2000<br>Deliberation 208/2018 | Leg. Decree 267/2000<br>Deliberation 208/2018 |

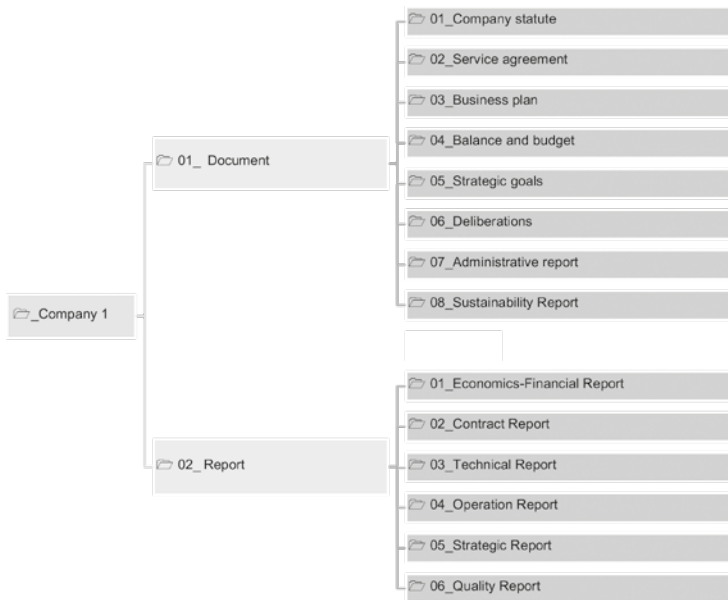
- segue -

| <i>Control</i>   | <i>Economic and Financial</i>  | <i>Legal</i>  | <i>In house providing</i>  | <i>Strategic and Planning</i>   | <i>Quality Control</i>  |
|------------------|--|---|--|---|---|
| <i>Purpose</i>   | <p>To identify possible economic and financial imbalances.</p> <p>To check the progress of management and the state of implementation of the objectives defined in the budget.</p> <p>To analyse annual financial statements, business plans, budgets and investment plans of companies.</p> <p>To check accounting and non-accounting parameters.</p>                               | <p>To check compatibility of acts of the company following current legislation.</p> <p>To check fulfilment of Service Contracts concerning expenses, entry forecasts and control and revision of the controls themselves.</p> <p>To check the quality of services provided.</p> <p>To ensure compliance with the law on public finance constraints.</p> | <p>To analyse the adequacy of direct assignment under current legislation.</p> <p>To check the company's economic and financial statements.</p> <p>To check periodic achievement of objectives.</p> <p>To identify any deviations from the forecasts.</p>  | <p>To analyse the deviations from objectives and to identify appropriate corrective actions, also concerning possible economic-financial imbalances relevant to the institution's financial statements.</p> | <p>To ensure the effectiveness and efficiency of services by checking compliance with quantitative and qualitative standards.</p> <p>To identify the degree of user/customer satisfaction.</p> <p>To detect specific needs of the different target groups and citizens.</p> |
| <i>Support</i>   | <p>Balance sheet of the companies, industrial plan, budget and investment plan of companies.</p> <p>Quarterly economic and financial reports of the companies.</p> <p>Half year reports approved by the board of directors of companies.</p> <p>Draft annual financial statements integrated with the comparison between balance sheet data and budget data for the same period.</p> | <p>Company Acts. Examples are social statutes, shareholders' agreements, contracts of a corporate nature.</p> <p>Service contracts and bodies (governance)</p> <p>Stakeholders' meeting of companies.</p>   | <p>Company Acts. Examples are: corporate statutes and corporate contracts.</p> <p>Service contracts and bodies (governance).</p> <p>Shareholders' meetings of companies.</p> <p>Report on the progress of service management and the state of implementation of the objectives.</p> <p>Balance sheet of the companies.</p> | <p>Report on the achievement of objectives, on the possible analysis of deviations and in planning of remedial actions.</p>   | <p>Service Agreements.</p> <p>Quality of service cards.</p> <p>Service satisfaction surveys.</p> <p>Benchmarking, Annual reports on verifying the functioning of the services.</p>  |
| <i>Frequency</i> | <p>Quarterly for informed documents.</p> <p>Half-yearly for the reports of the board of directors of companies.</p> <p>Annual for closing documents.</p>   | <p>Monthly, Quarterly, Half yearly, Annually.</p> <p>Depending on control typology</p>  | <p>Quarterly for informed documents.</p> <p>Half yearly for reports of the board of directors of companies.</p> <p>Annual for closing documents.</p>   | <p>Annual</p>   | <p>Half yearly/ Annual</p>  |





Analysis of the above framework helped to catalogue and standardize the information (see Figure 1). Together with administrators, we decided to divide the information collected for each company into two folders, documents (administrative fulfilments) and reports (performance measurement). The document folder includes official statements and agreements needed to check administrative fulfilments; the report folder includes performance communication by the investee company. Through discussion with administrators, we decided to include sustainability and operation controls. The sustainability control aimed to define the economic, environment and social impacts of company activities; the operation control aimed to detect the efficiency of operational processes.

Figure 1. Example of the standardization of main “folders” needed for the control



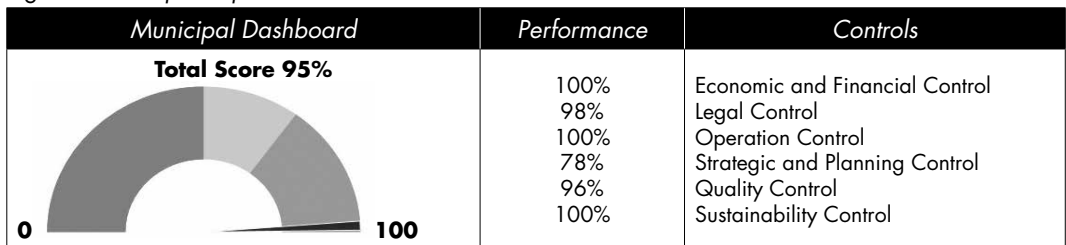
Together with administrators, we produced a first draft of the key performance indicators for each investee company. Then, we shared and discussed the indicators with investee companies. An example of performance reports is illustrated in Figure 2, suitably customized for the control needs of the company in question. In this report, there is no sustainability control as, for this investee company, sustainability is not strategic. A similar type of report is now used to communicate performance quarterly. However, to avoid the performance paradox (i.e. a weak correlation between performance indicators and organisational performance because indicators lost their capability to represent performance during the time), every quarter administrators and companies discuss the validity of key performance indicators.

Figure 2. Example of a performance report for an unlisted investee company

|   |                |  |  |
|---|----------------|--|--|
|  |                |    |  |
| Goal<br>2020  | Budget<br>2020 | Controls and Metrics   |  |
| <b>Economic and Financial Control</b>   |                |  |  |
| -   | -              | Report of Statutory Auditors   |  |
| -   | -              | Report of the Independent Auditing Firm  |  |
| -   | -              | Production value   |  |
| -   | -              | Production costs   |  |
| -   | -              | EBITDA   |  |
| -   | -              | Net income (loss)  |  |
| <b>Legal Control</b>  |                |  |  |
| -   | -              | Service quality charter update   |  |
| -   | -              | Availability service getting around in Turin   |  |
| -   | -              | Availability traffic information service via variable message routing panels   |  |
| -   | -              | Availability service information on places available in car parks through messaging  |  |
| -   | -              | Availability service information on the conditions of access via information panels near the access points   |  |
| <b>Strategic and Planning Control</b>   |                |  |  |
| -   | -              | Implementation of Business Plan 2020-2022 according to the indications of stakeholders   |  |
| -   | -              | Implementation and networking of 'intelligent traffic lights' project  |  |
| -   | -              | Support in construction and commissioning of 'Torino Centro Aperto'  |  |
| -   | -              | Compliance with the terms for preparation of consolidated financial statements of the City of Turin and reconciliation of reciprocal credit and debt items |  |
| <b>Quality Control</b>  |                |  |  |
| -   | -              | Number of complaints   |  |
| -   | -              | Number of anomaly reports  |  |
| -   | -              | Complaint response time  |  |
| -   | -              | Anomaly response time  |  |

Finally, we developed an integrated performance measurement dashboard for the Municipality. It should improve decision making by amplifying cognition and capitalizing on human perceptual capabilities. The dashboard includes an aggregate view of integrated results for all unlisted investee companies (see Figure 3) and analyses the following aspects: Economic and Financial Control, Legal Control, Operation Control, Strategic and Planning Control, Quality Control and Sustainability Control. Specific results for each company are described in the exploded view.

Figure 3. Example of performance measurement dashboard



### 5. Discussion

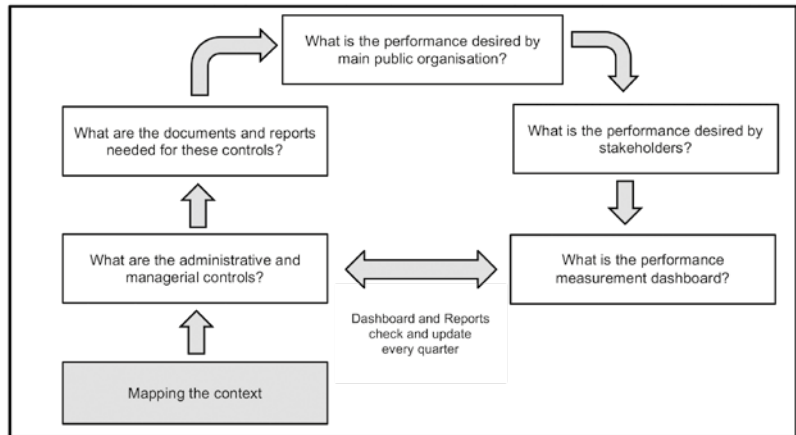
The findings highlight a performance measurement system able to support internal control of unlisted investee companies participated by the Municipality according to organisational needs, allowing control and monitoring of objectives.

New Public Management reform increased the attention on performance measurement of the public sector facilitating the adoption of performance measures (Hood, 2011; Hood and Peters, 2004). Recently, the role of the New Public Management reform has been widely criticized for being in many cases far removed from the public context. Although attempting to promote a culture of efficiency and transparency, the concepts proposed by the New Public Management reform are generic, vague and difficult to apply in practice, as stated in the literature (Agostino and Arnaboldi, 2015; Christensen, 2012; Garengo and Sardi, 2020). Despite there being important research studies on performance measurement applied to public contexts, these approaches are based on top-down implementation without consideration to the specifics of the organisations in question (Agostino and Arnaboldi, 2018; Garengo and Sardi, 2020). This points to the need of developing efficient performance measurements of public organisations, especially in inter-institutional networks. According to that, the research describes the need for innovative strategic performance measurement in complex institutional environments, which need to be managed as a system of systems, i.e. as independent and interdependent systems with unique capabilities (Bourne et al., 2018). A system based on careful balancing and interaction between performance measurement and performance manage-

ment, should promote personal commitment and, consequently, improve organisational performance (Smith and Bititci, 2017).

This action research identifies an approach for developing a performance measurement system according to administrative and management needs (Figure 4).

Figure 4. Approach for designing and implementing performance measurement



This performance measurement approach may be defined as a balanced, holistic and collaborative performance measurement to support inter-institutional networks through a bottom-up approach. It represents a bottom-up approach because it is based on the expertise of public managers and technicians and promotes cooperation among stakeholders to achieve the inter-institutional goals. It enhances the performance discussion and supports the decision-making process during periodic meetings, as required to the recent literature (Smith and Bititci, 2017; Swiatczak *et al.*, 2015). This approach can improve performance measurement activities, such as data collection and data analysis.

The result is a realistic view of how to measure performance in a specific public context. To support the effective adoption of performance measurement in public organisations, research goes beyond the labels of New Public Management reform to identify ways for designing performance measurement systems that public administrators “want to use” because it reflects their actual control needs.

## 6. Conclusion

The paper describes the performance measurement system of the Municipality of Turin for controlling its unlisted investee companies. It has been developed to strengthen internal controls of unlisted companies, as expressly required by article 147-quarter, Legislative Decree 267/2000.

The paper also identifies a strategic and holistic approach for designing an efficient performance measurement system for supporting the control of unlisted investee companies participated by public bodies.

The research contributes to the knowledge of performance measurement in public context. On the one hand, it provides an approach bottom-up able to favour strategic controls, which encourages participative collaboration among stakeholders to achieve the overall inter-institutional goals. On the other hand, the research provides a practical example of how to develop a performance measurement system based on the needs of a local government for controlling its unlisted investee companies.

The implications of the research are twofold. Through this approach, the Municipality can have an updated performance measurement system for controlling its unlisted companies, whereas the literature can dispose of a new approach for performance measurement in a specific public sector.

The research has its limitations related to the adoption of the action research methodology. Consequently, it is representative of a country-context, without comparison to other public contexts. However, this research produces longitudinal and concrete contributions which cannot be obtained in other ways.

Further research is needed to investigate, empirically, the outcomes of this study and to test, validate and improve the performance measurement approach proposed.

## References

- AGOSTINO D., ARNABOLDI M. (2015), "How Performance Measurement Systems Support Managerial Actions in Networks: Evidence from an Italian Case Study", *Public Organization Review*, 15(1), pp. 117–137.
- AGOSTINO D., ARNABOLDI M. (2018), "Performance measurement systems in public service networks. The what, who, and how of control", *Financial Accountability and Management*, 34(2), pp. 103–116.
- ARNABOLDI M., AZZONE G. (2010), "Constructing performance measurement in the public sector", *Critical Perspectives on Accounting*, 21(4), pp. 266–282.
- ARNABOLDI M., LAPSLEY I., STECCOLINI I. (2015), "Performance Management in the Public Sector: The Ultimate Challenge", *Financial Accountability & Management*, 31(1), pp. 1–23.
- BARBATO G., TURRI M. (2017), "Understanding public performance measurement through theoretical pluralism", *International Journal of Public Sector Management*, 30(1), pp. 15–30.
- BEL G., WARNER M.E. (2015), "Inter-municipal cooperation and costs: Expectations and evidence", *Public Administration*, 93(1), pp. 52–67.
- BITITCI U.S., GARENGO P., DÖRFLER V., NUDURUPATI S. (2012), "Performance Measurement: Challenges for Tomorrow", *International Journal of Management Reviews*, 14(3), pp. 305–327.

- BOURNE M., MELNYK S., BITITCI U.S. (2018), "Performance measurement and management: theory and practice", *International Journal of Operations & Production Management*, 38(11), pp. 2010–2021.
- CASULA M. (2020), "A contextual explanation of regional governance in Europe: insights from inter-municipal cooperation", *Public Management Review*, 22(12), pp. 1819–1851.
- CEPIKU D., HINNA A., SCAROZZA D., SAVIGNON A.B. (2017), "Performance information use in public administration: an exploratory study of determinants and effects", *Journal of Management & Governance*, 21(4), pp. 963–991.
- CHRISTENSEN T. (2012), "Global Ideas and Modern Public Sector Reforms: A Theoretical Elaboration and Empirical Discussion of a Neoinstitutional Theory", *American Review of Public Administration*, 42(6), pp. 635–653.
- CHRISTENSEN T., LÆGREID P. (2007), "The whole-of-government approach to public sector reform", *Public Administration Review*, 67(6), pp. 1059–1066.
- COUGHLAN P., COUGHLAN D. (2002), "Action research for operations management", *International Journal of Operations and Production Management*, 22(2), pp. 220–240.
- CRISTOFOLI D., MARKOVIC J., MENEGUZZO M. (2014), "Governance, management and performance in public networks: How to be successful in shared-governance networks", *Journal of Management and Governance*, 18(1), pp. 77–93.
- GARENCO P., BIAZZO S. (2012), "Unveiling strategy in SMEs through balanced scorecard implementation: A circular methodology", *Total Quality Management & Business Excellence*, 23(1), pp. 79–102.
- GARENCO P., SARDI A. (2020), "Performance measurement and management in the public sector: state of the art and research opportunities", *International Journal of Productivity and Performance Management*.
- GIACOMELLI G., ANNESI N., BARSANTI S., BATTAGLIA M. (2019), "Combining ideal types of performance and performance regimes: An integrated framework of analysis of performance management systems for public organizations", *International Journal of Public Sector Management*, 32(7), pp. 721–740.
- GILLESPIE M.A., GILLESPIE J.Z., SLITER K.A., COLATAT M.C., NOLAN K.P., GUION R.M. (2018), "An SK BARS System: Ongoing Performance Management With Municipal Police", *Public Personnel Management*, 47(1), pp. 93–114.
- HEINRICH C.J. (2007), "Evidence-based policy and performance management: Challenges and prospects in two parallel movements", *American Review of Public Administration*, 37(3), pp. 255–277.
- HOOD C. (2001), "Public service managerialism: Onwards and upwards, or 'Trobriand Cricket' again?", *Political Quarterly*, 72(3), pp. 300–309.

- HOOD C. (2011), "It's public administration, rod, but maybe not as we know it: British public administration in the 2000s", *Public Administration*, 89(1), pp. 128–139.
- HOOD C., PETERS G. (2004), "The middle aging of new public management: Into the age of paradox?", *Journal of Public Administration Research and Theory*, 14(3), pp. 267–282.
- HOOD C., SCOTT C. (1996), "Bureaucratic regulation and new public management in the United Kingdom: Mirror-image developments?", *Journal of Law and Society*, 23(3), pp. 321–345.
- JACOBS B. (2009), "Developing performance management in a local strategic partnership: Context and issues", *International Journal of Public Sector Management*, 22(5), pp. 432–444.
- KAPLAN R.S., NORTON D.P. (1992), "The balanced scorecard — measures that drive performance.", *Harvard Business Review*, 70(1), pp. 71–79.
- LAIHONEN H., JÄÄSKELÄINEN A., PEKKOLA S. (2014), "Measuring performance of a service system – from organizations to customer perceived performance", *Measuring Business Excellence*, 18(3), pp. 73–86.
- MARR B. (2012), *Key Performance Indicators (KPI): The 75 Measures Every Manager Needs to Know*, Oxford, U.K: Pearson.
- DI MASCIO F., NATALINI A. (2013), "Context and Mechanisms in Administrative Reform Processes: Performance Management Within Italian Local Government", *International Public Management Journal*, 16(1), pp. 141–166.
- MEYER M., MARSHALL W., GUPTA V. (1994), "The performance paradox", *Research in Organizational Behavior*, 16, pp. 309–369.
- NORTHCOTT D., MA'AMORA TAULAPAPA T. (2012), "Using the balanced scorecard to manage performance in public sector organizations: Issues and challenges", *International Journal of Public Sector Management*, 25(3), pp. 166–191.
- PAOLONE F., SARDI A., SORANO E., FERRARIS A. (2020), "Integrated processing of sustainability accounting reports: A multi-utility Company case study", *Meditari Accountancy Research*.
- POISTER T.H. (2010), "The future of strategic planning in the public sector: Linking strategic management and performance", *Public Administration Review*, 70(1), pp. 246–254.
- RAJALA T., LAIHONEN H., HAAPALA P. (2018), "Why is dialogue on performance challenging in the public sector?", *Measuring Business Excellence*, 22(2), pp. 117–129.
- SARDI A., GARENGO P., BITITCI U.S. (2019), "Measurement and management of competences by enterprise social networking", *International Journal of Productivity and Performance Management*, 68(1), pp. 109–126.
- SARDI A., SORANO E. (2019), "Dynamic Performance Management : An Approach for Managing the Common Goods", *Sustainability*, 11(22), p. 6435.

- SARDI A., SORANO E., GARENGO P., FERRARIS A. (2020), "The role of HRM in the innovation of performance measurement and management systems: a multiple case study in SMEs", *Employee Relations*, available at: <https://doi.org/doi:10.1108/ER-03-2020-0101>.
- SILVESTRE H.C., CUNHA M.R., GOMES R.C. (2018), "Joined-up Government of utilities: a meta-review on a public–public partnership and inter-municipal cooperation in the water and wastewater industries", *Public Management Review*, 20(4), pp. 607–631.
- SMITH M., BITITCI U.S. (2017), "Interplay between performance measurement and management, employee engagement and performance", *International Journal of Operations and Production Management*, 37(9), pp. 1207–1228.
- SWIATCZAK M., MORNER M., FINKBEINER N. (2015), "How can performance measurement systems empower managers? An exploratory study in state-owned enterprises", *International Journal of Public Sector Management*, 28(4–5), pp. 371–403.
- TOOR S.-u.-R., OGUNLANA S.O. (2010), "Beyond the 'iron triangle': Stakeholder perception of key performance indicators (KPIs) for large-scale public sector development projects", *International Journal of Project Management*, 28(3), pp. 228–236.
- YIN R. (2018), *Case Study Research: Design and Methods*, 6th ed., Los Angeles, CA: Sage.