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Assessing and managing the impact of COVID-19: a study of six European cities participating in a circular economy project

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Abstract

Purpose – This paper aims to explore the role of performance measurement systems as technologies of government for the assessment and management of the effects of COVID-19 in the context of six cities involved in a large European project.

Design/methodology/approach – Based on the field study of a large European project, this paper relies on a comparative case study research approach (Yin, 2003). This research design allows insights into the role of central and local key performance indicators (KPIs) in managing the ongoing pandemic.

Findings – This paper explores the role of accounting in the assessment of the COVID-19 pandemic. Its findings illustrate how the "adjudicating" and "territorialising" roles (Miller and Power, 2013) of local and central accounting technologies rendered the COVID-19 pandemic calculable.

Originality/value – This paper connects central and local performance management systems in the context of the COVID-19 pandemic. It relies on a governmentality approach to discuss how different programmes and the relative KPIs were impacted by the ongoing global crisis.

Keywords COVID-19, Performance measurement, Governmentality, Circular economy, Cities, European union

Paper type Research paper

1. Introduction

Cities play a fundamental role in the transition from a linear to a circular economy, as they are complex networks of private and public actors in charge of specific policies influencing citizens' well-being, the environment and the economy of the territory (OECD, 2020). Circular economy has been subject to numerous definitions and conceptualisations over the last decade (Murray *et al.*, 2017) as it has been considered the latest attempt to implement sustainable practices in line with the Brundtland Commission's Report (WCED, 1987). Despite the circular economy growing as a business construct within urban systems (Ellen MacArthur Foundation, 2019), there is yet little formal academic debate within the sustainability accounting literature on the role of cities in the transition to circular economy and its measurement in social, environmental and economic terms (Czarniawska, 2010). The outbreak of the novel COVID-19 pandemic at the turn of 2020 (World Health Organization, 2020) with its unanticipated and dire consequences for the global community, exacerbated the complexity faced by cities in their transition towards circular economy due to the "behavioural responses to the virus itself [. . .] and [the] government interventions aimed at locking down much of the economy" (Foss, 2020, p. 1323).

Accounting as a technology of governing has been studied in numerous public and private contexts (Mennicken and Miller, 2012). Moreover, the role of accounting has been explored to

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unpack the elements of rationalisation and operationalisation in the case of natural, localised disasters (Lai *et al.*, 2014; Sargiacomo, 2015). For example, studies have shown how accounting created a sense of interdependency between the actors involved in flood recovery (Lai *et al.*, 2014) and the role of accounting in making "exceptional" governance possible in the case of an earthquake (Sargiacomo, 2015; Sargiacomo and Walker, 2021).

Existing studies on the role of accounting within crises have mostly focussed on their aftermath (Lai *et al.*, 2014; Sargiacomo, 2015; Sargiacomo and Walker, 2021). In fact, only a limited number of studies have focussed on the role of accounting in assessing and managing the impact of the ongoing COVID-19 pandemic. Thus far, researchers have focussed on how accounting can play a role in defining the value of life when representing the number of fatalities due to COVID-19 (Yu, 2021). Moreover, Parker (2020) studied the impact of COVID-19 in the government and community occupational health through analysing cost control agendas within offices. However, researchers have devoted limited attention to the role of performance measurement systems in this setting.

Based on the fieldwork performed within six European cities involved in a large European project currently under way, this paper explores the role of performance management systems as technologies of governing to evaluate and manage the effects of the COVID-19 pandemic.

The European project, which is the object of this study, aims at creating a model for cities' transition towards circular economy and implementing it in six European cities of different sizes, including capital cities and small towns. In the context of the project, each of the six pilot cities is characterised by a complex network both at a local and project level. The contract stipulated by the project participants with the European Commission, called Grant Agreement, is based on specific tasks and reports that the participants must prepare according to a predefined calendar. Moreover, specific "central" key performance indicators (KPIs) have been included in the contract between the partners and the European Commission to assess the success of the circular transition of the six pilot cities at the end of the project. Finally, pilot city consortia agreed to develop specific "local" KPIs in the first year of the project in order to capture the local understanding of a successful transition to circular economy. Both sets of KPIs will be used to assess the fulfilment of the project participants' contract with the European Commission.

The disruption caused by COVID-19 also echoed throughout this project. Within a short time, pilot cities were forced to make sense of and respond to the situation, often with cancellations, postponements or revisions of planned activities. A risk assessment framework was implemented project-wide to provide a space to reflect on the potential impact of the COVID-19 pandemic, not least via the performance indicators set for the pilot cities.

In this paper, we explore how accounting became involved in the response of the project's pilot cities to the current pandemic and how it influenced the diverse discourses and practices of governance in this unique situation. We rely on Foucault (2007) notion of "governmentality", which has been used by accounting scholars to explore the manifold implications of accounting in processes of control. Specifically, we are interested in ways governmentality research has shed light on accounting as a technology of governance mobilised by actors within the project and results in ways of assessing and governing the aftermath of COVID-19.

To this end, we explore the role of the two sets of KPIs, central and local, reflecting both the European and the cities' programmes for the definition and implementation of circular economy (Rose and Miller, 1992). Previous literature on governmentality has started to address the relationship between "central" and "local" programmes quite recently (see Ahrens *et al.*, 2020; Newberry, 2020). Thus far, studies on governmentality have highlighted the tensions between the KPIs as accounting technologies translating conflicting central and local programmes. However, little attention has been paid to the role of both programmes and KPIs in the assessment and management of an ongoing crisis such as the COVID-19 pandemic.

In order to explore the role of central and local KPIs in this setting, the paper relies on the "adjudicating" and "territorialising" roles of accounting (Miller and Power, 2013). Accounting

plays an important *"adjudicating"* role in classifying, enumerating and comparing performance by making it part of accounting regimes (Miller, 2001; Miller and Power, 2013, p. 585). Moreover, accounting technologies create visibilities that make specific programme attributes manifest while obscuring others (Dean, 2010). In particular, KPIs render those attributes visible by making them calculable, thus constituting the space in which they operate (*"territorialising"*) (Miller, 1994).

Our paper aims at complementing the extant literature by exploring the role of KPIs as technologies of government guiding cities in the COVID-19 pandemic. It answers the question of how these technologies and practices of governing give rise to specific forms of visibility by making specific aspects of the pandemic calculable (Mennicken and Miller, 2012). Moreover, this paper seeks to understand the role of accounting technologies not only as a translation of local and central governmental programmes related to circular economy transition, but also as a social practice implicated in wider socio-political and -economic discourses and practices due to the current pandemic.

The remainder of the paper is structured as follows. Section 2 outlines the literature regarding the technologies of governance and accounting. Section 3 sets out the methodology, while section 4 illustrates the findings based on the cities' KPIs and the relative response to COVID-19. The concluding section presents the theoretical contribution and implications for literature and future research.

2. Accounting as a technology of government

Governmentality as a "systematic way of thinking about government" (Dean, 2010, p. 211) "render[s] reality thinkable" to make it "amendable to calculation and programming" (Miller and Rose, 2008, p. 16). In the work of Foucault, concerns with government and reality are incorporated into the technologies of government (Foucault, 2007; Raffnsøe *et al.*, 2019). Governmental technologies can be considered "the complex of mundane programmes, calculations, techniques, apparatuses, documents and procedures through which authorities seek to embody and give effect to governance ambitions" (Rose and Miller, 1992, p. 175). However, technologies of government are "not a matter of the implementation of idealised schema in the real by an act of will, but the complex assemblage of diverse forces, [. . .] techniques, [. . .] devices [. . .] that promise to regulate decisions and actions of individuals, groups, organisations, in relation to authoritative criteria" (Rose, 1996, p. 42). This use of governmental technologies contributes to rendering the world governable and individuals' calculable (Miller and O'Leary, 1987, 1994).

The role of accounting in governmentality studies enabled regimes to be assessed and made operable. Examples can be the way accounting allowed the implementation of new manufacturing technologies (Miller and O'Leary, 1994), influenced sustainable supply chain governance (Spence and Rinaldi, 2014) or enabled the development of consumer credit (Jeacle and Walsh, 2002). Accounting technologies produce specific forms of visibility through the "supposedly impersonal logic of quantification [that] configures persons, domains and actions as objective and comparable" (Mennicken and Miller, 2012, p. 7).

Government programmes are linked to accounting technologies for the realisation of their strategic ambition (Rose and Miller, 1992), thus performing their *territorialising* and *adjudicating* qualities (Mennicken and Miller, 2012; Miller and Power, 2013). The link between accounting technologies and government programmes has been explored within urban studies. For example, Argento *et al.* (2020) found that the multiple roles of these technologies hindered the development of the smart city programmes in the city of Helsinki. Moreover, Westerdahl (2020) explored the role of accounting technologies in the programme changes of the public housing sector in Sweden.

Notably, however, internal debates over the accounting technologies themselves and their link to central and local programmes have seldom been addressed (Rose and Miller, 1992; Ahrens *et al.*, 2020). To do so, this paper adopts a concept of control that reflects Foucault's

(2007) view of governmentality as a dynamic set of techniques and forces "operating in a heterogeneous space, constituted through multiple determinations" (Collier, 2009, p. 99). This approach allows an understanding of governmentality not as an institution or a *"dispositif"* (Foucault, 2007) but as a modality of control characterised by dynamic tensions in the definition of programmes at the central, project level and at the local, city level.

The accounting literature on governmentality has started to explore the difference between central and local programmes and the relative KPIs as accounting technologies relatively recently. Examples include the Newcastle City Council's use of accounting to create new forms of counter-conduct aimed at reacting against austerity funding cuts (Ahrens *et al.*, 2020). Moreover, tensions between accounting technologies at the individual entity and government levels have been analysed in the context of the reform of natural disaster funds in New Zealand (Newberry, 2020). Consequently, little is known about how accounting as a governmental technology plays a role in the definition and interpretation of programmes in the management of ongoing crises such as the COVID-19 pandemic.

To explore this element, this paper studies the role of accounting as a technology of government within the COVID-19 pandemic. The six cities involved relied on the central and local KPIs to assess and manage the impact of this unprecedented crisis and its socio-economic and environmental repercussions.

3. Methodological approach and fieldwork

The empirical part of this paper originates from the field study of a large European project. The work on the project started in September 2017 with the definition of the consortium and the agreement on the project content. The project operations were officially commenced in June 2019. The project's aim is to enable cities' transition towards regenerative practices based on circular economy principles. The project consortium is composed of 28 partner organisations, including municipalities, academic institutions, makerspaces, small and medium-sized enterprises (SMEs), non-governmental organisations (NGOs) and citizen associations. The work of the consortium is led by a project coordinator who is directly responsible towards the European Commission. The consortium is organised into teams, broadly categorized on two levels as pilot cities and work packages. On the one hand, pilot city consortia at a minimum consist of municipality representatives, citizens' organisations and small and medium-sized enterprises (SMEs). On the other hand, at the project level, work packages gather partners with a specific competency profile to support all pilot cities on various themes. Examples can be partners focussing on urban governance, sustainable technology or social, environmental and economic performance measurement and impact assessment. Individual roles of risk manager, scientific manager and technological manager are also assigned amongst project members to ensure quality results.

The authors who conducted the empirical part of the investigation attended all the official project meetings, where the whole consortium or various groups of partners such as cities, work package leaders, the risk manager and relevant stakeholders discussed the COVID-19 situation. Due to the pandemic, the meetings were held online using the Zoom platform. Zoom allowed the recording and transcription of all communication.

Following the comparative case study research approach (Yin, 2003), this part of the fieldwork resulted in 30 interviews lasting up to 90 min each conducted with the pilot cities and the relevant project partners. These interviews discussed the relevance of COVID-19 for the project in general and for the cities in particular. The key aspects that the cities focussed on were the "central" and "local" project KPIs and their ability to fulfil them during the pandemic. The interviews were conducted over Zoom and were recorded and subsequently transcribed. Moreover, internal notes were kept and shared by the researchers involved in the fieldwork, where the informal communication was recorded. This included concerns,

attitudes and observed practices as well as personal notes. Meetings and interview data were compared and complemented with the data from the project's documentation: Grant Agreement, emails, meeting agendas and other official project documentation. Data have been analysed during the fieldwork and organised into various themes including the perceived severity of the impact of COVID-19, diverse rationales and programmes at central and local level, and prioritisation of project's vs pilot's programmes and KPIs. In the following section, attention will be given especially to the impact of the two categories of KPIs in assessing and managing the central and local programmes in the ongoing COVID-19 pandemic.

4. The cities and COVID-19

Each city participating in the project chose a specific problem to address within the realm of circular economy. For example, cities focus their projects on plastic, textiles, local municipal markets or energy efficiency. The aim is to have a city-centred approach to circular economy that will develop beyond the life of the project itself and can be replicated by other interested cities internationally.

The performance evaluation at the end of the project period will be based on two sets of indicators: the first one being the so-called "central KPIs", which were agreed upon during the development of the participants' contract with the European Commission ("Project Grant Agreement", 2019). The second type of indicators, i.e. "local KPIs", have been defined by the cities themselves in a process facilitated by two project member organisations.

Central KPIs are similar across all pilot cities; out of the set of nine KPIs, only two are city-specific. These KPIs focus on the number of stakeholders reached by the project, their interest in replicating the processes and solutions designed in the project, the overall increase in the citizens' awareness and the improvement in the cities' overall welfare. The circular economy programme of government draws on central KPIs as accounting technologies to ensure that the solutions devised in the project are propagated to other international cities that consider them relevant and are willing to invest in them (Miller and O'Leary, 1994).

Furthermore, the cities created local KPIs on a voluntary basis to keep track of the elements that they considered central to the positive outcome of their programmes. The local KPIs have been defined by the cities in the first year of the project as technologies of government to achieve the circular economy objectives they consider desirable (Miller and Rose, 1990). These indicators are an outcome of a six-stage process, starting with a long-list of best-practice KPIs found across the industry practitioners, international organisations and well-known sustainability frameworks. The long-list was then narrowed to a short set of KPIs through co-creation meetings between respective pilot cities and their primary stakeholders and a facilitator from the project (Parisi *et al.*, 2020).

Characteristics and examples of the two types of indicators, "central" and "local", are presented in Table 1.

The COVID-19 pandemic and the consequent containment measures, including full lockdown in some countries, did not leave the project unaffected. Not only did most of the work move online under social distancing guidelines, but also some key activities in pilot cities had to be cancelled or indefinitely postponed, placing on hold the implementation of the envisioned action plans. As we read in one of the project deliverables: "in [one of the cities], the municipal markets are closed, and in [another] all events have been cancelled for months ahead. Across all pilot cities, all outreach and communication activities that were designed to take place physically are cancelled" (Parisi *et al.*, 2020).

In response to the disruption caused by COVID-19, several documents and meetings, including a "risk management register", management-level meetings and bilateral meetings between the pilot cities and project coordination team, have been used to make sense of the

Central KPIs	Local KPIs
Characteristics	*Characteristics*
(1) Defined before project start in accordance with the requirements by the European Commission	(1) Defined by the pilot cities during the project through a co-creation process
(2) Stated in the project contract (Grant Agreement)	(2) Communicated to the European Commission through one of the project's deliverables
(3) Similar for all pilot cities with minor differences to reflect the material focus of the pilot cities	(3) Different for each city depending on their context and goals
Examples	*Examples*
P1: Number of material-specific city resources identified	E1: Circular material use rate
P2: Number of specific material streams identified	E2: Recycling rate of material at project sites
P3: Number of governance/business models developed	E3: CO_2 emission change
P4: % material regenerated	E4: Reduction in energy use
P5: Overall stakeholder satisfaction with models	S1: Number of citizens engaged in project activities
P6: Number of new applications for material developed	S2: increase in awareness about circularity of materials amongst citizens
P7: Willingness to pay for regenerated products and materials	
P8: Number of local makers and businesses reached through showcases	
P9: Number of citizens reached through educational programmes	

Table 1.
Project KPIs

situation and to explore the feasibility of the existing programme as defined by the project Grant Agreement and by the cities' own regimes (Rose and Miller, 1992).

Initially, the situation was assessed by partners at the work package level (i.e. excluding pilot cities) at the "risk management meeting" and "work package meeting" on 19 March, and later on 25 March by work packages and pilot cities at a "steering committee meeting" including all the project partners. In all meetings, participants discussed both the central programme and the interest of the project continuing its operations, as well as the difficulties experienced by the pilot cities. The initial responses were mixed depending on the participant's role in the project.

On the one hand, the work packages and the internal risk management team were focussed on finding solutions that could be implemented for the project to continue operations and sought "measures [the project] could possibly take to minimise the risk of negative impacts" (Risk management meeting minutes, March 19 2020). Their approach was to "think about the competences [. . .] in the consortium [and] think creatively how [to] re-adjust activities to run online" (Steering Committee meeting minutes, March 25 2020).

On the other hand, pilot cities were more concerned about the feasibility of implementing their planned activities and the impact that COVID-19 would have on their operations. One member of a pilot city consortium argued that "it's a matter of completely shifting the scope, not a matter of postponement [. . .] we need to re-think the pilot plans" (Municipality representative in a pilot city consortium, March 2020). In another pilot city, the FabLab representative also raised concerns about their ability to move forward with the planned activities: "We are very impacted by the situation. We are completely closed, [. . .] some activities cannot be done online" (FabLab representative in a pilot city consortium, March 2020).

Overall, the initial response from the pilot cities to the uncertainty of the COVID-19 situation was pessimistic and driven by the feasibility of their KPIs. Shortly after the pandemic outbreak, it became clear that some tools would be necessary to make sense of and manage the situation. Hence, in late April 2020 the "risk management register" was

implemented amongst pilot cities. The work package leader responsible for pilot coordination saw it as a good way to manage the situation:

> What I can say is that for now the template is working really well. We see a lot more. . . [pilot cities] can define a lot more details about their problems, and it really starts to emerge how similar they are in certain parts, and how different they are in others. So overall, it's quite interesting, and of course there are some red threads we can find common for everybody. For some cities, I think there is a lot more at risk than in others. [. . .] I think we've managed at least a little bit to take a detour and. . . everybody has been very creative [laughs]. (Designer and FabLab representative, coordinator of pilot cities, April 2020).

Two months later, in June 2020, bilateral meetings took place between the project coordination team and the pilot city teams. The aim of these meetings was to build on the positive experience of using the "risk management register" and further create perspective from which the situation could be assessed and managed through the accounting technologies available (Miller and Rose, 2008; Miller and Power, 2013). In so doing, both the central and local KPIs became a means to understand the feasibility of concurrent programmes at central and local level (Miller, 1990). While the programme enforced by KPIs within the contract with the European Commission was considered more achievable, the local programme created by the cities themselves was considered more challenging.

During these bilateral meetings, pilot cities reflected on their ability to meet both sets of KPIs, expressing cautious optimism for the future of the project. For example, one of the pilot city team members described the central KPIs as "flexible" and envisioned a change in activities that would allow not only the meeting of the agreed upon target, but also exceeding the expectations due to their focus on replicability.

> [. . .] The indicators were pretty, pretty flexible. So, for example, we have indicators in terms of the public attitude. And yes, we were thinking about having a workshop with that number of people. But that number of people [. . .] can be online and offline, sometimes online. It's an opportunity to gather even more people if we think about that indicator. (Project manager in regional IT association, member of pilot city consortium, June 2020).

Further reflections on pilot cities' ability to meet the central KPIs were made, indicating potential changes to planned activities that would allow meeting the predetermined targets:

> Actually, it depends on the ways the situation is going to evolve in the next months. But I think it's fair to say we are on track for meeting the KPIs. Maybe, I do not know, if the situation will demand it, we will change live meetings with the public. We are going to change them and turn them into webinars. But I think that's about it. The rest of it is feasible. (Municipality representative, leader of a pilot city consortium, June 2020).

When it comes to the local programmes and relative accounting technologies, the cities found themselves with spaces for agency that were not envisaged in the immediate aftermath of the crisis. In fact, it seemed that local KPIs significantly affected the practices of government and the ability to respond to the local programmes (Ahrens *et al.*, 2020). A team member from the same pilot city consortium added a reflection on how the activities reflected in the KPIs were affected, and the city's reaction was as follows:

> One of the things we are monitoring [is] energy consumption. . . and we are including schools, and because in terms of the school activity, there was a disruption, we will pay much attention of how we interpret that data. [COVID-19] was a risk identified [. . .]. And if it goes for two more years, we will need to. . . it does not mean that we do not meet the indicators, just that we will need to adapt the interpretation of this based on the situation and the context of consumption, reduced consumption because of reduced activity. (Project manager of regional IT association, member of pilot city consortium, June 2020).

A project manager of another pilot city team echoed the ability to proceed with the project and meeting the local KPIs as follows:

> The indicator of a 25% increase in recycled [material] is still doable. COVID-19 was of course a setback, but we believe we'll get there at the end. (Independent consultant to the municipality, leader of a pilot city consortium, July 2020)

The central and local KPIs with their ability to create forms of visibility made COVID-19 calculable and governable. In fact, both the central and local KPIs, while responding to different regimes, identified distinctive possibilities for intervention and concealed other aspect of the pandemic (Mennicken and Miller, 2012). Hence, the accounting technologies played a *territorialising* and *adjudicating* role (Miller and Power, 2013) by making the COVID-19 subject to quantification and evaluation. In fact, KPIs as calculative practices devised in order to articulate and make both central and local programmes operable (Miller, 2001) and to assess their results (Miller and Power, 2013), created fields of visibilities that influenced the evaluation of the impact of the current pandemic. This role of the calculative practices in the project is also linked to the territorialising role of accounting; in that, the use of KPIs contributed to make COVID-19 subject to calculation (Miller and Power, 2013).

Initially, the cities' concern was the standstill of their activities, and the consequent inability to trial solutions in line with the city programmes. These were expressed by all pilot city teams; however, based on the both the central and local KPIs, the cities proposed a different practice and programme (Newberry, 2020), designed to address the expectations laid out by the performance indicators in innovative ways.

It was noticeable how pilot cities did not seem to distinguish between the central and the local KPIs, as the dynamic dialogue around the most relevant governmentality practices stemmed from both accounts (Foucault, 2007). After the initial pessimistic projections expressed during the Steering Committee meeting (25 March, 2020), the pilot cities moved ahead from the COVID-19 pandemic by revisiting KPIs and reformulating their programmes accordingly. Both sets of KPIs – "central" KPIs and "local" KPIs – were mentioned in cities' reflections about the way forward.

For example, a pilot city team now considered COVID-19 an opportunity to reconsider their plans and redesign scenarios to focus on the role of material flows during the pandemic:

> We were wondering [. . .] if something new would happen after the summer, we would probably have to reframe some content of the pilot. Not just because we cannot meet people live and so on, but maybe because if COVID-19 would come back, it would be very interesting and crucial also to reframe some of our activities and the conceptualisation of our pilots according to these. (Project manager in a municipality, member of pilot city consortium, June 2020).

5. Discussion and conclusions

This paper suggests that Foucault's notion of "governmentality" (Foucault, 2007) can be conveniently used to explore the role of accounting technologies in the COVID-19 pandemic. In line with this view on governmentality, it explores the ways programmes defined at the central level can be contested at the local level (Ahrens *et al.*, 2020). This paper contributes to the accounting research on governmentality by offering examples of the roles of accounting in the competing regimes emerging because of the COVID-19 pandemic. It illustrates how the perception of the gravity of the pandemic was influenced by the concurrence of central and local KPIs devised to implement the central and local programmes. Moreover, this paper contributes to the existing literature by exploring the respective roles of central and local regimes and the relative calculative practices. In fact, in our case, the cities never questioned the KPIs in the aftermath of the COVID-19 crisis but used them to shape their programmes in order to normalise the current situation.

The accounting literature presents examples of ways accounting technologies become associated with specific rationales (Hopwood, 1987; Power, 1997). It also provides accounts of the contradictory nature of rationales and programmes and the relative role of accounting (Miller and O'Leary, 1994). Notably, however, little attention has been paid to the complex process underlying such rationales and programmes, especially in the case of global, potentially long-lasting crises such as the COVID-19 pandemic. Findings of this paper illustrated how the central and local KPIs created to translate the European and the cities' programmes played a similar role in the assessment of the ongoing COVID-19 crisis. In fact, both sets of KPIs rendered some characteristics of COVID-19 visible and subject to assessment and evaluation; in other words, they played an *adjudicating* role (Mennicken and Miller, 2012; Miller and Power, 2013). The paper illustrates the underlying processes leading to the assessment of the impact of the pandemic through different stages involving the KPIs in order to adjust the relative programmes.

Finally, this paper contributes to the discussion concerning the *territorialising* quality of accounting (Miller and Power, 2013). In fact, this paper illustrates how KPIs contributed to the definition of COVID-19 as an accounting subject, thus making it calculable and manageable by the cities in the project.

Future research should investigate how different KPIs are devised and implemented both at the central and local levels. The interplay between the actors involved in the definition of accounting technologies may contribute to our understanding of their use as governmentality technologies.

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