

PPPs in health and social services: a performance measurement perspective

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This paper addresses the question of public accountability in the context of public–private partnerships (PPPs) by unpacking the principles behind performance measurement systems for service-focused PPPs. The authors present a contingency-based approach to add to our understanding of PPPs and propose a performance measurement framework based on four dimensions and a set of key performance measures. The model described in the paper supplies a baseline on which public decision-makers can develop customized performance indicators.

Keywords: Healthcare; Italy; performance measurement; PPPs.

Public–private partnerships (PPPs) are increasingly being used by governments to complement the provision of public services and infrastructure. PPPs draw upon the capabilities of multiple, independent systems of beliefs and associated configurations to facilitate knowledge-building, new access to resources and interdependencies, thereby overcoming the disadvantages of conventional (unitary) public organizations (Greve and Hodge, 2005). Management systems in PPPs are extremely complex. As a consequence, and in order to understand what makes a PPP effective, scholars are shifting their attention away from the design of *ex ante* inter-organizational contractual arrangements to intra-organizational operational practices (Waring *et al.*, 2013).

Performance management systems are key in improving the effectiveness and public accountability of PPPs (Goldsmith and Eggers, 2004; Forrer *et al.*, 2010). However, there is surprisingly little empirical work about performance management systems in PPPs.

This paper addresses this gap by taking a contingency perspective on PPPs' performance measurement systems. Our research question was: how do performance measurement systems vary according to different configurations of PPPs? Our study was based on an action-research focusing on the entire population of PPPs (11) providing health and social services in a major Italian region. Our results are based on 51 semi-structured interviews with policy-makers, managers and professionals working in the PPPs, as well as extensive archival analysis.

This paper contributes to the debate on PPPs and performance management in two important ways:

- We advance a contingency-based approach (Donaldson, 2001; Van de Ven *et al.*, 2013) to the understanding of PPPs as organizational configurations. By examining the interplay of three contingencies—integration within the public service network, specialization/technology, and strategy—we complement previous contingency-based PPP studies (Waring *et al.*, 2013) and find evidence for a link between innovative capacity and public sector integration.
- Most importantly, we propose a performance measurement framework for service-based PPPs based on four dimensions—financial, investment, process and outcome—and a set of key performance measures (KPMs) that account for the role of the different contingencies.

Theoretical background

Public–private partnerships in the health sector: towards a performance management approach

A government's reasons for establishing PPPs include:

- To access alternative, private sources of funding (Fitzgerald, 2004).
- To achieve better value for money in the provision of public infrastructure (Hodge and Greve, 2007).
- To develop competitive markets with the role of the public sector changing from provider of services to monitoring delivery (Torchia

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et al., 2015).

Healthcare PPPs operate in a large number of countries, including the UK (Waring *et al.*, 2013); Italy (Cappellaro and Longo, 2011; Vecchi *et al.*, 2014); Spain (Acerete *et al.*, 2011), Australia (Blanken and Dewulf, 2010); and India (Baru and Nundy, 2008).

Despite the number of PPPs, the possibility of reaching a definitive judgment regarding their effectiveness and long-term sustainability has been questioned (Roehrich *et al.*, 2014; Torchia *et al.*, 2015). Scholars have called for more research on the effectiveness of PPPs (Barr, 2007), particularly for the development of performance management frameworks (McKee *et al.*, 2006; Kee and Newcomer, 2008; Forrer *et al.*, 2010).

PPPs have usually been studied from a contract-based perspective (Williamson, 1975). The importance of mutual trust between public sector and private sector contracting parties is a theme taken up by subsequent sociology-oriented (Kanter, 1994; Castells, 1996) and network-oriented papers (Kickert *et al.*, 1997; Klijn and Koppenjan, 2000). More recently, researchers have acknowledged the need to complement the focus on inter-organizational relationship and contractual governance with a deeper understanding of the organizational dynamics of PPPs. Among others, Roehrich *et al.* (2013, p. 117) have called for actively considering the capabilities associated with operational processes and the related incentive mechanisms of PPPs.

The recognition of the need to study PPPs in terms of their organization has prompted scholars to engage in a dialogue with organizational theories. Among others, contingency theories (Buns and Stalker, 1962; Thompson, 1967; Donaldson, 2001) and their evolution (Van de Ven *et al.*, 2013) have been thought appropriate for studying the inter-relationships between the external and internal environments of partnerships. According to contingency theory, organizational performance is enhanced by 'an external fit between the demands of an organization's environment and the design of its internal structure, as well as an internal fit among key design components of strategy, structure, systems and culture' (Van de Ven *et al.*, 2013). Specifically, contingency theory suggests that organizational effectiveness can be achieved by matching organizational characteristics to contingencies, defined as 'any variable that moderates the effect of an organizational characteristic on organizational performance'

(Donaldson, 2001, p. 7).

Waring and colleagues (2013) developed a contingent framework to study the organization of PPPs in the English healthcare system. Their results highlight the importance of selected contingencies, including dependence between partners, the strategic orientation of leaders, composition of the professional workforce and management approach. However, Waring *et al.* did not directly address the question of how best to design a performance management system. Our paper fills this gap.

PPP performance measurement: a contingency perspective

Contingency-based research has a long tradition of the study of performance management and measurement systems (Bruns and Waterhouse, 1975; Daft and MacIntosh, 1978; Ginzberg, 1980; Otley, 1980). The view is that the effectiveness of a performance measurement system depends on the interaction with the organizational setting, which can be defined by a set of contingency factors. Several such factors have been identified (Donaldson, 2001; Chenhall, 2007):

- External environment, with the related components of uncertainty and risk.
- Technology, which refers to 'how the organization's work operates and includes hardware, materials, people, software and knowledge' (Chenhall, 2007); technology can be further analysed in terms of complexity, task uncertainty, and interdependence.
- Organizational structure and size.
- Strategy.

The application of a contingency-based approach to the performance measurement systems of PPPs rests on three features of PPPs that make them unique organizations. First, PPPs can be defined as pluralistic organizations, i.e. organizations in which the long-term institutional objectives of public and private partners might naturally diverge. Hence, performance measurement systems need to take into account structural intra-organizational situations of 'multiple and potentially conflicting interests, logics and regimes of accountability' (Chenhall *et al.*, 2013, p. 268). Second, scholars have long acknowledged that PPPs constitute a heterogeneous population (Hodge and Greve, 2007). Systems should accordingly be designed in a flexible manner and account for both financial and non-financial measures (Kaplan and Norton, 1992), as well as for the

organizational contingencies that are more likely to influence each specific PPP configuration. Third, while being relatively autonomous organizational arrangements, PPPs inevitably raise questions about public accountability (Forrer *et al.*, 2010). Performance measurement systems represent one of the most appropriate tools through which public accountability can be enhanced.

Moving on from these arguments, our paper advances a contingent-based model of performance measurement system for service-focused PPPs, taking the point of view of a public stakeholder.

Methodology

Empirical context and research design

The Italian national health service is a public system financed by general taxation. It is based on 139 local health authorities (LHAs), each of which is responsible for the provision of health services to its local population. The LHAs are financed and controlled by the 21 Italian regions.

Over the past three decades, two primary classes of PPPs have emerged: private finance initiative projects (long-term infrastructure contracts—see Vecchi *et al.*, 2010); and service-based PPPs where the collaboration between public and private entities is based on the provision of core health and social services. This paper adopts the latter typology as its unit of analysis and focuses on the Lombardy region, which is the richest and most populated region of Italy.

Starting in the early 2000s, policy-makers in Lombardy made substantial use of service-based PPPs to reshape their healthcare network. In 2013, the regional government decided to improve the performance measurement systems of the 11 PPPs that were active in its territory. The authors collaborated with regional policy-makers to design and implement a pilot system. This paper is based on the results of the collaborative efforts and, as such, it can be defined as *action research*, a form of participative inquiry (Reason, 1994) where researchers ‘make a concerted effort to integrate three basic aspects of their work: participation, action, and research’ (Chevalier and Buckles, 2013). Overall, our case provides an extremely relevant setting for studying the design and implementation of PPP performance management systems in real time.

Data sources

Our data sources included archival data, field visits to active PPPs, 51 semi-structured

interviews, and four meetings with regional policy-makers. For each PPP, we collected data on the governance, the PPP’s goals, balance sheets, income statements (from 2011 and 2012), structural data (i.e. the number of beds and personnel), types of activity, and relative volumes. Interviews were aimed at validating data and elaborating appropriate KPMs. For each PPP, interviewees included the CEO/general director and, often, one or more assistants; the medical director, sometimes supported by a medical unit director; the partnership’s financial controller; the public hospital’s officer in charge of monitoring the PPP; and, in two cases, a representative from the LHA’s mental health department.

Model elaboration and data analysis

The analysis had two stages. In the first stage, following Reich’s (1992) ‘empirical-theoretic’ classification process, we defined selected organizational characteristics of interest based on the contingency literature (Merchant, 1998; Waring *et al.*, 2013) and then sorted PPP organizations into types based on the data analysis. The first contingency factor we identified was the *degree of integration of the PPP with the public sector system*. Following Waring *et al.* (2013, p. 315), we considered integration as a key contingent variable capturing the organizational structure and the environmental dimensions, as expressed by the public sector partner’s involvement in PPP ownership and the level of operational integration of the PPP services with the public sector network. Degree of integration in the public system was expressed using two proxy measures: the legal configuration of the PPP; and the physical localization of the partnership. The potential degrees of integration included a low level of integration: low-intensity interaction and information sharing, no physical sharing and no shared ownership; a medium level of integration: resources and activities aligned to meet common goals, shared ownership but no physical sharing; a high level of integration: high degrees of resource sharing in the co-production of service, including co-ownership of the PPP and physical sharing.

The second factor was the *degree of specialization*. Following Donaldson (2001) and Chenhall (2007), we took specialization as an indirect proxy of the technology contingency and, specifically, of the three subcomponents of complexity, task uncertainty, and interdependence. Three degrees of specialization emerged:

- Low—generalist hospitals with minimally complex case mix, high standardization of work and low levels of task uncertainty.
- Medium—post-acute care facilities with a medium level of task uncertainty.
- High—highly specialized, non-standard, differentiated products that were likely to be delivered in complex units.

The third factor was the *strategic goal*. According to Chenhall (2007), strategy is an element where ‘managers can influence the nature of the external environment, the technologies of the organization and the management control system’ (2007, p. 184). We identified three strategic goals (Porter, 1980; Miller and Friesen, 1982): cost-leadership: focus on the delivery of cost-effective inpatient care to the local community and the improvement of the safety standards of a healthcare facility; product repositioning: reconversion of a facility (often, a former generalist hospital) to strengthen specialist services, with a strong commitment on continuity of care; goal: entrepreneurial-innovative focus on the enhancement of research-based, multi-disciplinary care, and technological and clinical innovation. By the end of stage 1, we had plotted the population of PPPs being studied according to the PPP typologies identified by the relationship among the contingency variables.

In the second stage, we developed a multi-dimensional model for performance measurement of the different typologies of PPPs identified in the previous stage. Following the literature (Kaplan and Norton, 1992), we first identified four broad transversal dimensions—financials, investments, processes, and clinical outcomes—and a set of 11 KPMs for each dimension (Ferreira and Otley, 2009). This initial conceptual map was discussed with each PPP; they were asked to validate the dimensions and discuss the fit of each KPMs with the PPP’s contingent features identified in the first stage (integration, specialization/technology, strategic goals). A form was compiled for each PPP that noted the interviewees’ comments about each KPM. By the end of stage 2, we modified the original performance measurement map according to the KPMs deemed to be the most relevant by each PPP. The results of this analysis are shown in table 1. Finally, we used the PPP population as pilots to test the performance measurement framework.

Findings

A taxonomy of PPPs

By combining the three contingency factors of integration, specialization/technology and strategic goals, our analysis identified three clusters of PPPs.

Cluster 1—Low integration and low specialization: The first cluster of PPPs was composed of autonomous, private sector oriented, cost-efficient PPPs characterized by a low degree of integration and a low degree of specialization. Low integration was marked by both a lack of shared PPP ownership—PPP in this cluster were based on concession contracts between public and private partners—premises were not shared and the private partner autonomously managed the services. The public sector partner did not have an active role in the PPP’s governance nor any direct financial link. This collaboration type can be considered ‘quasi-externalization’ because the partnership is actually limited to the temporary use of buildings, machinery, and personnel. PPPs in this cluster were relatively autonomous generalist hospitals providing inpatient care. Therefore, the level of specialization of clinical activities is relatively low; hospitals deliver services that can be easily routinized; task uncertainty is low, and technologies are based on standardized and automated processes. The strategy can be defined as one of cost-leadership: focus on the delivery of cost-effective inpatient care to the local community and the improvement of the safety standards of a healthcare facility. Two PPPs were part of this cluster (PPP 1, PPP 2).

Cluster 2—Medium integration and medium specialization: The second cluster was composed of relatively integrated and specialized PPPs. Medium integration was the result of a higher level of resource exchange between private and public partners in terms of information and material practices. While the partners established a new governance arrangement, typically in the form of association, the public actor had no direct influence on day-to-day activities. Even so, public sector representatives received detailed annual reports on the economic and operational results that formed the basis for making decisions about the continuation of the partnership. Furthermore, while all of the partnerships were located outside public facilities and partners did not jointly share inputs (employees, technologies, or buildings), they established co-ordination mechanisms to manage the flows of patients to

and from other public services, for example, in terms of protocols with hospitals providing acute care and/or nursing homes. PPPs in this cluster were also characterized by a *medium level of specialization*: they were post-acute care facilities delivering rehabilitation, psychiatric, and diagnostics services with a medium level of task uncertainty. The strategic goal was product repositioning: the reconversion of a—frequently generalist hospital—facility to strengthen specialized services, including rehabilitation and outpatient services, with a strong commitment to continuity of care. Seven PPPs were part of the second cluster (PPPs 3–9).

Cluster 3—High integration and high specialization: The third cluster was composed of PPPs that were highly integrated within the public network. The organizational legal configuration reflected a shared ownership between private and public partners, with the latter being actively involved in the nomination of board members (through quotas) and supplying capital funding. The level of resource sharing was high also when it came to operations and management of the PPP, with the partnership being located within public facilities, and sharing human resources, technologies, procurement activities, and clinical protocols. PPPs in this cluster integrated their care processes with the public sector both horizontally (during the patient stay) and vertically (before and after hospitalization). This cluster was characterized

by a *high level of specialization* with leading medical centres at the national level, performing a limited number of specific, highly complex activities (rare neuromuscular diseases, paediatrics, neonatology and obstetrics). The strategic goal of this cluster can be defined as entrepreneurial-innovative: the enhancement of research-based, multi-disciplinary care, technological and clinical innovation. Two PPPs were part of the third cluster (PPPs 10 and 11).

Performance-measurement frameworks according to PPP cluster

Each cluster was associated with distinct performance measurement requirements because the contingency factors impacted the performance measurement dimensions, thereby determining the need for specific KPMs. We found that the contingency factor of integration impacted the economic and the investment dimensions; and the specialization/technology factor influenced the clinical process and performance.

Performance dimensions and KPMs of cluster 1: In low integrated collaborations characterized by greater private sector independence, the monitoring of the economic dimension was typically limited to end-of-year aggregate measures of profitability. Managers from the PPPs in cluster 1 did not welcome intrusive economic monitoring by the public partners, which they believed might compromise the autonomy of the partnership. The same

Table 1. Dimensions and key performance measures to be monitored by the public partners, as a function of PPP cluster.

| | <i>Cluster 1: Low integration and low specialization</i> | <i>Cluster 2: Medium integration and medium specialization</i> | <i>Cluster 3: High integration and high specialization</i> |
|---|--|--|--|
| <i>Financial dimension</i> | | | |
| 1. Profitability | x | x | x |
| 2. Cost control | | x | x |
| 3. Liquidity | | | x |
| 4. Solidity | | | x |
| <i>Investment dimension</i> | | | |
| 5. Amount of investment (private capital provision) | x | x | x |
| 6. Mix of sources of investment | | (x) | x |
| <i>Clinical process dimension</i> | | | |
| 7. Process efficiency | x | x | (x) |
| 8. Process integration | | x | x |
| 9. Process innovation | | (x) | x |
| <i>Clinical outcome dimension</i> | | | |
| 10. Clinical standard compliance | x | x | x |
| 11. Clinical (effectiveness) | | x | x |

x: Key performance measure deemed by the interviewees as being relevant to the specific PPP.

(x): Key performance measure deemed by the interviewees as being partially relevant to the specific PPP.

argument applied to the *investment dimension*, with the private sector being accountable for the provision of capital, and enjoying higher degrees of freedom as to the actual destination of investments. While integration determined the level of disclosure of economic and investment measures, the level of specialization was an essential element for evaluating *clinical processes and outcomes*. Where there was a low degree of specialization, the public sector monitored the efficiency of relatively standardized processes and the appropriateness of the services delivered. Managers pointed out that these aggregated measures were adequate because the overarching goals of the PPP were safety and efficiency.

In terms of the *economic dimension*, the two partnerships had very different financial situations. PPP 1 had lost about 400,000 euro, with a return on equity of -79%. Negative financial performance must be monitored, since it can impact the provision of healthcare. The size of investments in this cluster was considerable (570,000 euro on average). Both PPPs met the national standards for maximum waiting times (30 days) for outpatient and non-urgent inpatient assistance. Concerning clinical standards compliance, both PPPs adopted the national guidelines and met the standards on infection control and inappropriate readmissions.

Performance dimensions and KPMs of cluster 2: As the degree of integration increased, the public sector carefully monitored the *economic soundness* of the PPPs by requiring information about the internal cost structure and demanding access to micro-data to follow the PPP's financial performance through balance sheets and cost-accounting indicators. *Investment* planning needs to be shared for these PPPs, and implementation should be included in the performance measurement system. Mutual clarification of long-term goals and intermediate steps is crucial for success. In terms of clinical processes, if the level of expected integration with the public services increases, both process efficiency and the actual development of integration protocols and/or co-ordination modes between the PPP and other public providers must be assessed. Finally, the increased level of specialization requires the organization to move beyond a basic perspective of standard compliance and develop measures of clinical effectiveness (for example indicators for assessing improvements in patient health).

Three out of seven PPPs reported a positive economic performance (PPPs 3–5). Losses (PPP

7 and PPP 9) were due to a sub-optimal, rigid cost structures—evident from the ratio salaries/total costs, which were far above the cluster average of 0.59. The levels of investment in this cluster was satisfactory (430,000 euro on average). Almost all of the PPPs demonstrated good process efficiency and process integration (i.e. they had established discharge protocols that were co-ordinated with the public sector hospital). All PPPs satisfied the infection control and inappropriate readmissions standards and had adopted rehabilitation scales to measure clinical effectiveness.

Performance dimensions and KPMs of cluster 3: At the highest level of integration, with partners sharing the vast majority of resources, public sector representatives were very concerned with monitoring *economic indicators*. The *investment dimension* was enriched with a specific measure aimed at capturing the level of 'attractiveness' of the PPP and the partners' reputation in terms of a mix of funding sources and the ability to fundraise. At the highest level of specialization, innovation was a key monitoring target in the *clinical process dimension* and was typically operationalized in terms of the ability to open the 'black box' of the care process (for example new medical and pharmaceutical protocols). Finally, similarly to the previous cluster, measures of clinical effectiveness were used to monitor *clinical outcomes* beyond standard compliance.

The two partnerships belonging to this cluster (PPP 10 and PPP 11) demonstrated partial financial equilibrium. The ratio salaries/total costs of these PPPs was low compared with the other clusters, which suggests a higher expenditure on technology and pharmaceuticals, which is consistent with the innovation goals of these PPPs. Liquidity was balanced, and the solidity measure was evidence of high levels of debt. Both PPPs were able to fundraise. The average investment in each PPP was approximately 300,000 euro. However, PPP 10 was unable to meet its investment objectives. Process integration was improved by discharge protocols that were co-ordinated with the public hospital and process innovation was fostered by the implementation of clinical pathways. In terms of the clinical outcome dimension, all of the PPPs satisfied clinical standards on readmissions and infections and had adopted rehabilitation scales to measure clinical effectiveness.

Discussion and conclusion

Despite the increasing use of hybrid organizational arrangements like PPPs, very little is known about the determinants of efficiency gains ‘on the ground’ (Waring *et al.*, 2013). We have addressed this deficit by modeling the basic features of performance measurement systems of PPPs as a key dimension to improve their effectiveness and public accountability (Goldsmith and Eggers, 2004; Forrer *et al.*, 2010).

Our paper contributes to the debate on PPPs and performance management in two ways. First, we have identified three contingency factors—integration within public service network, specialization, and strategy—that explain different partnership configurations. Our results revealed a close link between the strategic orientation of the different PPP clusters and their innovation paradigms (Hartley, 2005; Chesbrough and Crowther, 2006). Specifically, *cost-leadership* (cluster 1) and *product repositioning* (cluster 2) strategies resembled the traditional new public management approach to innovation, defined as market- and customer-centred, based on continuous improvements and adaptation in managerial processes (Hartley, 2005). Value creation and appropriation (Chesbrough and Appleyard, 2007) take place mainly inhouse (cluster 1), or at the level of the productive chain (cluster 2), with an innovation paradigm akin to the ‘optimize execution’ identified by Chesbrough and Crowther (2006). However, the *entrepreneurial-innovative* strategy (cluster 3) followed a ‘networked governance’ approach to innovation, in which public and private sector partners are co-producers of highly complex research activities through transformational and/or incremental improvements (Hartley, 2005). While processes of value creation take place primarily inhouse, value appropriation dynamics can be realized at the level of the field (Chesbrough and Appleyard, 2007). As such, PPPs in cluster 3 had the highest innovative potential, with an innovation paradigm of ‘create growth options’ (Chesbrough and Crowther, 2006).

Second, and most importantly, our analysis went beyond a static analysis of different PPP typologies to advance a dynamic framework of how contingency factors relate to performance management requirements (Forrer *et al.*, 2010). Public–private organizations that produce highly-specialized products and therefore involve processes that are minimally standardizable (Chenhall, 2007) were more likely to set up performance measures able to

reward innovation and account for complexity, both in terms of processes and outcomes. Therefore the innovative capacity of organizations is monitored and included in the incentive system, triggering a positive feedback loop.

In addition, by looking at the interplay between specialization and integration, our analysis allowed us to further explore the issue of public accountability of PPPs (Forrer *et al.*, 2010). Public–private partnerships with greater private sector independence were less likely to be closely monitored from a financial and investment viewpoint: the risk was transferred to the private sector and the public sector retained its regulatory and monitoring functions. Public–private partnerships characterized by high levels of resource sharing used control systems that monitored the costs and the sustainability of the partnership.

While valuable, the results of our analysis must be interpreted in light of selected boundary conditions. First, we considered PPPs as ‘tight organizational arrangements’ (Hodge and Greve, 2007, p. 546), as opposed to the traditionally investigated infrastructural contractual arrangements, including build–own–operate–transfer, build–operate–transfer and sale–and–lease–back (Savas, 2000). Second, exact monitoring needs, of course, depend on the nature of the healthcare system. Third, while we put forward a set of KPMs for different typologies of PPP, evaluation of their actual performance requires an essential subsequent step, i.e. target-setting (Ferreira and Otley, 2009).

We think that our findings could be applied to other public, tax-funded health systems, such as those in the UK, Canada, and Australia. In this paper, we have described a pilot exercise; future research could focus on the question of the appropriate targets and conduct large-scale evaluations of PPPs.

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IMPACT

While public–private partnerships (PPPs) have become increasingly prevalent in Western economies, the question of how to monitor and assess their performance is under-explored. This paper introduces a performance measurement framework for service-based PPPs based on four dimensions—financial, investment, process and outcome—and a set of key performance measures. Decision-makers and managers of tax-funded health systems are shown why they develop customized performance measurement systems that take account of the degree of integration of the PPP into the public service network; the level of specialization of services; and their PPPs' strategic goals.