## THE EVOLUTION OF PERFORMANCE MEASUREMENT SYSTEMS IN PUBLIC **HEALTH ORGANIZATIONS:** A PRELIMINARY ANALYSIS

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## Abstract

In a world increasingly dominated by the logic of automation and the data-driven approach, modern management systems used in companies, both private and public, require progressively the adoption of digital technologies capable of influencing the performance of the activities carried out, affecting them, but, above all, favoring their measurement and assessment.

As far as the public sector is concerned, the organizations that operate there always have more need to develop effective management and control systems (Trucco & Marchi, 2017) in relation to both internal and external pressures. Internal pressures are predominantly associated with the ever-increasing complexity of the processes carried out by public organizations, which require constant attention to the level of efficiency in the use of resources and effectiveness in achieving the set objectives (Simonen et al., 2012), but also one their adequacy in terms of their ability to respond to the real needs of citizens with an adequate range of services (Balducci et al., 1997). External pressures, on the other hand, are exerted by various phenomena, such as the difficulties generated by the competitive context within the sector public and, more generally, in the economic and social environment (Molteni, 2004) and continuous solicitations generated by the legislator, who periodically submits, updates and redefines the regulatory framework within which these organizations operate. The set of internal and external pressures to which organizations are subject public, as has been happening for some time for private companies operating in dynamic areas, creates a situation of environmental complexity such as to make now the adoption of performance measurement systems inevitable and unpostponable effective for management and control (Purbey et al., 2007; Elg et al., 2013). In the category of public companies, healthcare companies have characteristics, in terms of performance measurement and evaluation, quite peculiar; they are in fact calls to ensure effective and efficient management of the entire performance complex they provide, with reference not only to those relating to the treatment process but also to resources used for administrative management (Kontio et al., 2013).

Within this context, the aim of this work is to carry out a theoretical analysis of the processes of change over the years recent have characterized performance measurement systems in the public sector, with particular reference to health organizations.

Technological innovations in systems performance measurements refer, in particular, to new information technologies developed in health information systems (data warehouse, business intelligence, cloud, enterprise resource planning (ERP) and other advanced technologies) capable of handling large amounts of economic and health data effectively and efficiently in the structure of a healthcare organization while providing tangible results in terms of information useful for decision making (Mathew & Pillai, 2015; Krause, 2015). The strengths of these technologies lie in their ability to:

- provide an integrated overview of performance, enabling healthcare organizations to create a wide-ranging information system that favors knowledge sharing (Adler-Milstein et al., 2019; Lehoux et al., 2018):
- $\, \cdot \,$  provide reliable and real-time performance measurements (Alfian et al., 2018).

According to Adler-Milstein et al. (2019), the implementation of performance management systems in healthcare organizations (in terms of knowledge management systems) should give due consideration to the critical role of three domains: policies/processes, technology and people. Obviously, the implementation of an innovative performance management system in healthcare organizations requires the re-engineering of information flows and processes (Agarwal & Garg, 2012; Garefalakis et al., 2016; Chiarini et al., 2018), bearing in mind the compatibility of these innovative systems with operational processes and pre-existing technology (Kontio et al., 2013; Foshay & Kuziemsky,

2014). Moreover, an issue that is recurrent in the implementation of technological innovations in the healthcare sector is motivating and training the staff and the physicians in the adoption of the new systems (Garg & Agarwal, 2014; Abukhader, 2015; Almajali & Tarhini, 2016). This problem is particularly acute in healthcare organisations given the variety of staff present, which "includes a large spectrum of professionals that can be characterised by possessing expertise, power, and autonomy" and who, therefore, could resist change (Agarwal & Garg, 2012, p. 159).

## REFERENCES

- Abukhader, S. M. (2015). ERP implementation in the private hospitals of Saudi Arabia. *International Journal of Healthcare Management*, 8(2), 77–88. https://doi.org/10.1179/2047971914Y.0000000092
- Adler-Milstein, J., Nong, P., & Friedman, C. P. (2019). Preparing healthcare delivery organizations for managing computable knowledge. *Learning Health Systems*, 3(2), Article e10070. https://doi.org/10.1002/lrh2.10070
- 3. Agarwal, D., & Garg, P. (2012). ERP implementation in hospitals: A case study. *International Journal of Electronic Healthcare*, 7(2), 157–180. https://doi.org/10.1504/IJEH.2012.049876
- 4. Alfian, G., Syafrudin, M., Ijaz, M. F., Syaekhoni, M. A., Fitriyani, N. L., & Rhee, J. (2018). A personalized healthcare monitoring system for diabetic patients by utilizing BLE-based sensors and real-time data processing. Sensors, 18(7), Article 2183. https://doi.org/10.3390/s18072183
- Almajali, D. A., & Tarhini, A. (2016). Antecedents of ERP systems implementation success: A study on Jordanian healthcare sector. *Journal of Enterprise Information Management*, 29(4), 549–565. https://doi.org/10.1108/JEIM-03-2015-0024
- 6. Balducci, M. (Ed.). (1997). Managerialità e sussidiarietà: Due sfide per il governo locale. Franco Angeli.
- 7. Chiarini, A., Vagnoni, E., & Chiarini, L. (2018). ERP implementation in public healthcare, achievable benefits and encountered criticalities An investigation from Italy. *International Journal of Services and Operations Management*, 29(1), 1–17. https://doi.org/10.1504/IJSOM.2018.088460
- 8. Elg, M., Palmberg Broryd, K., & Kollberg, B. (2013). Performance measurement to drive improvements in healthcare practice. *International Journal of Operations & Production Management*, 33(11–12), 1623–1651. https://doi.org/10.1108/IJOPM-07-2010-0208
- 9. Foshay, N., & Kuziemsky, C. (2014). Towards an implementation framework for business intelligence in healthcare. *International Journal of Information Management*, 34(1), 20–27. https://doi.org/10.1016/j.ijinfomgt.2013.09.003
- Garefalakis, A., Mantalis, G., Vourgourakis, E., Spinthiropoulos, K., & Lemonakis, C. (2016). Healthcare firms and the ERP systems. *Journal of Engineering Science & Technology Review*, 9(1), 139–144. https://doi.org/10.25103/jestr.091.021
- Garg, P., & Agarwal, D. (2014). Critical success factors for ERP implementation in a Fortis hospital: An empirical investigation. *Journal of Enterprise Information Management*, 27(4), 402–423. https://doi.org/10.1108/JEIM-06-2012-0027

- Kontio, E., Lundgren-Laine, H., Kontio, J., Korvenranta, H., & Salanterä, S. (2013). Information utilization in tactical decision making of middle management health managers. CIN: Computers, Informatics, Nursing, 31(1), 9–16. https://doi.org/10.1097/NXN.0b013e318261f192
- 13. Krause, D. D. (2015). Data lakes and data visualization: An innovative approach to address the challenges of access to health care in Mississippi. *Online Journal of Public Health Informatics*, 7(3), 1–10. https://doi.org/10.5210/ojphi.v7i3.6047
- Lehoux, P., Roncarolo, F., Silva, H. P., Boivin, A., Denis, J. L., & Hébert, R. (2019). What health system challenges should responsible innovation in health address? Insights from an international scoping review. *International Journal of Health Policy and Management*, 8(2), 63–75. https://doi.org/10.15171/ijhpm.2018.110
- Mathew, P. S., & Pillai, A. S. (2015, March 19–20). Big data solutions in healthcare: Problems and perspectives. In *Proceedings of the International* Conference on Innovations in Information, Embedded and Communication Systems (ICHECS). IEEE. https://doi.org/10.1109/ICHECS.2015.7193211
- Molteni, M. (2004). Responsabilità sociale e performance d'impresa. Per una sintesi socio-competitiva. Vita e pensiero.
- 17. Purbey, S., Mukherjee, K., & Bhar, C. (2007). Performance measurement system for healthcare processes. *International Journal of Productivity and Performance Management*, 56(3), 241–251. https://doi.org/10.1108/17410400710731446
- Simonen, O., Viitanen, E., & Blom, M. (2012). Factors relating to effectiveness data use in healthcare management. *International Journal of Productivity and Performance Management*, 61(7), 752–764. https://doi.org/10.1108/17410401211263845
- Trucco, S., & Marchi, L. (2017). La comunicazione al mercato delle performance economico-finanziarie: Il ruolo del controllo di gestione. Management Control, 3, 55–78. https://doi.org/10.3280/MACO2017-003005