

Chapter 1

Benchmarking of the Maintenance Service in Health Care Organizations

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ABSTRACT

The support services of health care organizations, such as maintenance, have not traditionally been considered important from the perspective of care quality. Nevertheless, the degree of excellence in maintenance significantly influences availability, maintenance costs and safety of facilities, medical equipment, patients and care staff. Thus, it would be of great importance for health care organizations to apply benchmarking to their maintenance processes, as do other processing companies, in order to determine the quality of maintenance provided, and compare it to other, similar, organizations. This would also allow all the continuous improvement processes to be controlled, and actions for radical improvement to be carried out by comparing performance with that of companies in other sectors. This chapter describes a multicriteria model integrating a fuzzy Analytic Hierarchy Process with utility theory to obtain a valuation for the Maintenance Service of a Health Care Organization over time.

INTRODUCTION

The support services of health care organizations, such as maintenance, have not traditionally been considered important from the perspective of care quality. Nevertheless, the degree of excellence in maintenance significantly influences availability, maintenance costs and safety of facilities, medical equipment, patients and care staff (Carnero & Gómez, 2016). Therefore, it would be very important to devise continuous improvement procedures for the level of maintenance applied in Health Care Organizations. A very useful tool for developing these continuous improvement processes is benchmarking (Wireman, 2004).

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Benchmarking may be defined as the process of continuously comparing and measuring the activity of an organization with respect to others, to obtain information about the practices, processes and methodologies, which will help the organization to improve its performance (APQC, 2013).

Thus, it would be of great importance for health care organizations to apply benchmarking to their maintenance processes, as other companies do, in order to determine the quality of maintenance provided, and compare it to other similar organizations. This would also allow all the continuous improvement processes to be controlled, and actions for radical improvement to be carried out by comparing performance with that of companies in other sectors. This chapter describes a multi-criteria model integrating a Fuzzy Analytic Hierarchy Process (FAHP) with utility theory to obtain a valuation for the maintenance service of a health care organization over time.

The paper is structured as follows. First, there is a review of the literature on benchmarking in maintenance. Then the model for maintenance benchmarking is described, including the structure of the model, the weighting process and the valuation of alternatives. Next, the results obtained from applying the model to a health care organization in the years 2000, 2005 and 2010 are given, followed by future research directions, conclusions and references.

BACKGROUND

There are four types of benchmarking (Kelessidis, 2000):

1. **Competitive Benchmarking:** Benchmarking is carried out against competing companies and the data analysis is intended to determine the reasons behind the superior performance of the competition. This has the advantage that there is a series of exogenous variables, which affect the organization and its competitors equally if they all belong to the same economic sector. Nonetheless, it is unlikely that competing businesses will cooperate unless, for example, they compete in different markets.
2. **Internal Benchmarking:** This is applied between units of departments belonging to multinational companies with branches, manufacturing operations or sales offices spread over different countries or geographical areas.
3. **Process Benchmarking:** This compares processes with some degree of similarity but in companies from different sectors.
4. **Generic Benchmarking:** This analyses technological aspects, comparing companies from the same or from different sectors.

The benchmarking application process has the following stages (Dunn, 1999):

- Establish the scope.
- Develop the project plan.
- Select the key performance variables to benchmark.
- Identify potential participant companies.
- Measure performance of reference company.
- Measure performance of benchmarking participants.
- Communicate your results.

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