

# Chapter 88

## Decision–Making Support Systems in Quality Management of Higher Education Institutions: A Selective Review

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### ABSTRACT

*The provision of high-quality educational services is a mandatory objective for Higher Education Institutions (HEIs) nowadays. Consequently, HEIs implement Quality Management System (QMS) process frameworks. A core managerial activity conducted in these QMS is decision making, which impacts the overall quality of the provided HEI's educational services. This managerial context found in HEIs demands an adequate and reliable managerial decision-making support. In this article, we elaborate a new Process-Task-Decision scheme for HEIs based on a relevant international QMS process framework (ISO 9001 IWA 2:2007), and we survey selectively DMSS and HEI literature in the 1996-2016 period. We found that DMSS have been used in a variety of Process-Task-Decision situations in HEIs from early periods to the present, but their utilization is still scarce and partially deployed. Thus, open opportunities to apply them in HEIs and relevant knowledge gaps still exist to be further researched.*

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## **INTRODUCTION**

The modern world is a highly competitive arena (CEE, 2003; Ho et al., 2006). One main implication is a constant and incremental pressure to organizations for providing quality products and services as well as for operating with limited budgets (CEE, 2003; Ho et al., 2006). Higher Education Institutions (HEIs), both public and private ones, are not exceptions within this international managerial context. The general aim on high quality educational services provision is mandatory for HEIs, as it has been identified that higher quality of educational services from HEIs implies higher country competitiveness (CEE, 2003). Top countries in the Organization for Economic Co-operation and Development (OECD) such as USA, UK, Germany, Japan, France and Canada are recognized by having high-quality HEIs listed in the top 500 best universities in the world via several international rankings (Rauhvargers, 2011; Blanco-Ramirez & Berger, 2014). This fact places these countries as leading ones in the international services market for higher education.

Similarly, country-based economic studies (Levine & Renelt, 1992; Schleicher, 2005) reported the positive association between the quality of a nationwide educational system (higher education in particular) and the wealth indicators of a country. South Korea (Shin, 2012) and China's (Chen & Feng, 2000) economic successes attest this relationship. For instance, Shin (2012, pp. 60) reported that: "(South) Korea accomplished such impressive growth in higher education at the same time as the economy has grown. (South) Korean higher education and economic development mutually reinforce one another. Well trained human resources accelerated the economic productivity, and economic development generated resources to invest in higher education development."

To assess and stimulate high quality HEIs, national and international regulatory agencies have elaborated standards and guidelines on quality of education (Doherty, 1997; EAQAHE, 2005; Dumond & Johnson, 2013). Consequently, HEIs are encouraged to satisfy and fulfill such nationwide and international expected regulations. Given this situation, educational top managers from HEIs face the challenge of leading their organizations toward the achievement and compliance of such educational quality regulations. As Tsinidou et al. (2010, pp. 227) pointed out: "Universities have realized that their long-term survival depends on how good their services are and that quality sets one university apart from the rest."

In order for a service system (e.g., a HEI) to deliver the expected quality of services, its design must include an adequate Quality Management (and Control) System (QMS) (ISO, 2005). In particular, the ISO 9001 family of standards (initially 9000, 9001, 9004, and 9011, and further extended to about a dozen standards) were designed for assisting organizations, of any type, size and scope, to implement and operate a QMS effectively (ISO, 2005). In particular, an ISO 9000 guideline (IWA 2 Quality Management Systems — Guidelines for the application of ISO 9001:2000 in education) applied to education sector was proposed in 2003 (ISO, 2003), and updated in 2007 (ISO, 2007). While this guideline was not published anymore by the ISO, relevant literature supports its utilization (Peters, 1999; Cheng et al., 2004; Bae, 2007; Balague, 2007; Dumond & Johnson, 2013). As Dumond and Johnson reported (2013, p. 132):

*A wide variety of educational organizations in the US, Canada, Singapore, the UK, Switzerland, Australia, Romania, and Malaysia to name a few have implemented ISO 9001 in recent years ... and with growing awareness of ISO and its success stories, that trend is increasing. Additionally, an analysis of higher education institutions indicates that the implementation of quality systems, methods, and models that are in compliance with ISO 9001 is quite large.*

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