

Quality Assessment of the University Educational Process: an Application of the ECSI Model

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Summary. In a university, students represent the final users as well as the principal actors of the formative services. A measure of their perceived quality is essential for planning changes that would increase the level of the quality of these services. This perceived quality is analysed in this paper with the ECSI (*European Customer Satisfaction Index*) methodology. The ECSI, which implements a structural equation model, is aimed to represent the satisfaction of the students with some latent variables gauged through a set of observable indicators. We extend the ECSI to the data obtained from graduates of the University of Florence employed one year after graduation.

Keywords: Customer satisfaction; ECSI; Structural equation models; University education.

1. Introduction

We can say that a service is of good quality if it satisfies the consumers' needs (Fornell, 1992; Fornell *et al.*, 1996). The development of appropriate activities aimed at improving the quality represents one of the main strategies of the organisations willing to increase their productivity and competitiveness (Montgomery, 1997). Hence, studies on customer satisfaction must be accomplished with the purpose of gathering the appropriate information on purchase experience in order to improve the quality of the service.

Customer satisfaction studies have become increasingly important due to the definition and use of new indices (*CSI – Customer Satisfaction Indices*) and barometers for the evaluation of large markets or that of the entire produc-

¹ The three authors of this paper contributed the initial idea, the structure and the design of the work, whereas M. Bini and B. Bertaccini elaborated and implemented the model.

tion of a country. These new tools derive from two kinds of analyses: *transaction-specific satisfaction* and *cumulative satisfaction* (Johnson *et al.*, 2000).

The initial interest, focused on single episodes of consumption, shifted towards the overall psychological satisfaction after the use of a service. The assessment is based, therefore, on the upgraded experience of multiple transactions between the consumer and productive organization.

The first model was the barometer proposed in Sweden in 1989 (SCSB – *Swedish Customer Satisfaction Barometer*), followed a few years later by the American index (ACSI – *American Customer Satisfaction Index*, 1994), then by the Norwegian barometer (NCSB – *Norwegian Customer Satisfaction Barometer*, 1996) and, finally, by the European Community index (ECSI – *European Customer Satisfaction Index*, see ECSI Technical Committee, 1998).

These models, based on validated theories concerning the consumers' behaviours, their satisfaction and the quality of the products purchased, consist of causal links among latent factors, each one representing the values of a specific set of measurable indicators. Their structure is under continuous review and is subject to modifications in relation to the context. The differences among the proposals are due both to the number of the latent factors and to the number of the causal nexuses involved in the analysis.

Our work is aimed to extend the use of CSI indices to the university education framework. We chose the ECSI model since its basic structure and the relative latent factors are consistent with it. In order to draw a picture of the quality of the educational programmes realised by universities, we analysed data on graduates employed one year after graduation.

For estimating the effects of ECSI we adopted the SEM - *Structural Equation Models* approach based on maximum likelihood estimation². SEM procedures were preferred to PLS ones because the former

- model specification is more flexible,
- allow the significance testing of the omitted parameters (such as error covariances), loading of the latent variables, inclusion of ordinal and categorical variables, implementation of a two-level data structure, and handling of missing data,
- can be implemented by means of specific software (Müthen & Müthen, 2003).

We present the ASCI/ECSI models in Section 2, describe the data set used in our analysis in Section 3, and discuss the results in Section 4. Section 5 is devoted to some final remarks.

² The technique initially suggested for estimating latent variables in CSI models (Fornell, 1992) was Partial Least Squares-PLS (Wold, 1975). We abandoned this technique because it assumes normality for the estimation of latent variables. Nevertheless, the PLS approach may optimally predict the dependent variable, both with small samples and skewed distributions.