Chapter IV

A Validation Test of an Adaptation of the DeLone and McLean’s Model in the Spanish EIS Field

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ABSTRACT
This chapter offers a reflection about systems thinking, models and validation tests. In this way, starting from the recognized model of information systems success created by DeLone and McLean, the authors develop an adaptation in the executive information systems (EIS) area. Their research aim is to carry out a validation test of the adapted model applying the Partial Least Squares approach. The study is based on a survey involving 100 managers in 55 Spanish organizations. The results show this model has an adequate predictive power for most implied variables, demonstrating the existence of significant links among information systems success dimensions. The model helps to understand the influence of EIS on both individual and organizational impacts. Finally, as a consequence of the validation process, new ideas for the redesigning of the model are proposed.

INTRODUCTION

From a systemic approach, we develop a research model adapting the DeLone and McLean’s information systems success model to the executive information systems (EIS) field. We aim to test the validity of our adaptation,
studying the interdependencies among the variables and examining its predictive power. Applying the Partial Least Squares (PLS) technique, we test the model using data from a survey conducted on 100 Spanish users in 55 organizations.

**BACKGROUND**

**Systems and Models**

The systems thinking has always borne in mind the idea of complexity (Espejo, 1994). According to Flood and Carson (1988), the complexity concept is associated with people and things or systems (situations as perceived by people). In relation to the former, it comprises the following aspects concerning individuals: perceptions and notions, interests, and capabilities. With regard to systems, complexity includes the ideas of the number of parts and the number of relationships between the parts.

Because we cannot deal with the entire complexity of our environment, we use abstractions of the latter, i.e., we develop models. In this sense, “models are representations of real-life phenomena, situations or systems” (Faucheaux, Laurent, & Makridakis, 1976, p. 108). Therefore, models help us to understand, research, and act on systems or phenomena (Ortigueira, 1987) (Figure 1). Besides, a model can have three general types of purposes (Finkelstein & Carson, 1985): description, prediction, and explanation of the modeled system.

Models are defined by groups of variables and links between these variables (Figure 1). Each variable can be observed as a bridge between a theoretical concept (which provides the variable with meaning) and observable magnitudes. In empirical models, each variable can be expressed by one indicator or several.

On the other hand, model and system are inseparable entities. In fact, a model is a system. A model is a representative system of another specific system or phenomenon. In a complementary way, Flood and Carson (1988) state that since a system can be defined as an abstraction from the world, a system is a model.

*Figure 1: System and model [Source: adapted from Ortigueira (1987, 1995)]*
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