Perceived Net Benefit as a Measure of IS Success and Predictor of IS Use

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IS SUCCESS AND PREDICTOR OF IS USE

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Abstract

This paper advocates the use of a construct called Perceived Net Benefit (PNB) for both measuring Information Systems (IS) success and predicting IS use. PNB is defined as the sum of all future benefits less all future costs expected to flow from use of an information technology application. A technique for measuring PNB is outlined, and three research questions that compare PNB to the best measures in current use are articulated. The reason PNB is likely to be better than existing measures is that within the one common conceptual framework of calculating PNB, different factors can be given different weightings in different situations. Because respondents are asked to consider a wide range of different factors (including attitudes, social norms, and control over resources [Ajzen 1985, 1999]) and to specify the relative importance of those factors to their current IS use/IS success decision, it is argued that PNB is likely to be a more reliable predictor of IS use than perceived usefulness, and a sounder measure of IS success than user satisfaction.

In addition to arguing that PNB will often be the most appropriate measure of IS effectiveness (Ives, Olson and Baroudi 1983; Doll and Torkzadeh 1988; Galletta and Lederer 1989; Melone 1990; DeLone and McLean 1992) and predictor of IS use (Davis 1989, 1993; Adams, Nelson and Todd 1992; Segars and Grover 1993), this paper also attempts to integrate IS research on the diffusion of innovations (Rogers 1983; Moore and Benbasat 1991; Attewell 1992) and the notion of user involvement with an information system (Barki and Hartwick 1989, 1994; Kappelman and McLean 1991). The framework used to unite these four sub-fields is the simple causal model of IS use shown in the figure above. In the figure, the solid line between PNB and IS use indicates causality; all other things being equal, increasing levels of PNB will motivate greater use of the system. The model is also intended to show how perceptions of net benefits evolve over time. Initially, as suggested by Rogers (1983), perceptions of costs and benefits are based on external sources of information. However, once users have had some first-hand experience with the system, the two feedback paths lead to revised perceptions of costs and benefits that, in turn, lead to revised patterns of system use. It is in this role as a continuously-revised measure of IS effectiveness that PNB may be regarded as both an ex ante predictor of IS use and an ex post measure of IS success. Involvement also affects PNB in this model because it is determined, in part, by the perceived importance of the task performed by the information system. Importance of the task (a key component of Barki and Hartwick's [1994] involvement construct) affects perceptions of the value of the IS irrespective of the quality of the system.