The Relationship Between User Satisfaction and Systems Usage: Empirical Evidence from Egypt

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Evidence on information systems effectiveness measures in environments that differ from those of the U.S. are critical to managing global information systems. The purpose of this investigation was to explore the relationship of user satisfaction to system usage, as measures of information systems effectiveness, in a sample of Egyptian banks. A relatively high user satisfaction was found to be accompanied only by a relatively average usage level. While the positive relationship between user satisfaction and system usage may suggest the use of the two surrogate measures alternatively to measure systems effectiveness, researchers have to be cautious and should adopt measures that fit the human, technological, and organizational characteristics of the systems being measured. This is particularly critical when researchers in developing countries have to adopt measures, that have been originally developed and tested in Western countries to measure systems effectiveness in diverse environments.

Systems that can not be measured can not be managed. Over time, various methods to assess the efficacy of information systems have been devised and then used. These methods range from batch transaction processing systems to executive support systems (Zmud, 1979; Ives & Olson, 1984; Delone & McLean, 1992), and they can be divided into three classes: (1) user satisfaction measures, (2) system usage measures, and (3) performance-related measures. Much of the IS research has investigated user satisfaction and/or system usage as the dependent variables in information systems effectiveness studies (Delone & McLean, 1992).

Nevertheless, IS researchers cite reasons for and against using user satisfaction and system usage as alternative measures of systems effectiveness (e.g., Ein-Dor & Segev, 1978; Ginzberg, 1978; Sanders & Courtney, 1985; Srinivasan, 1985; Melone, 1990). Segars and Grover (1993), for example, assert that no one measure of the effectiveness of information systems can be applied to every technological and organizational context. Moreover, most of the findings on the effectiveness of information systems are based on research done on users in developed countries, particularly the U.S. Such results cannot necessarily be applied to other users because of profound differences in the social, economical, and cultural features of their culture (Aharoni & Burton, 1994; Rosenzweig, 1994). In effect, to strengthen the validity of the systems effectiveness measures that now exist and that are U.S. based, cross-cultural research is imperative.

The objective of this paper is to report on the results of research testing the relationship between user satisfaction and system usage as two measures of systems effectiveness in an Egyptian setting. This research was conducted as part of a larger study on the relationship of personal, situational, and...
task environment variables to information systems effectiveness in a group of Egyptian banks.

The paper contains, respectively, a background on the relationship between user satisfaction and system usage, the research methodology, an analysis and discussion of results, and conclusions.

**The Relationship of User Satisfaction to System Usage**

Among information systems effectiveness measures, user satisfaction and system usage are the most frequently used in IS research (Schewe, 1976; Ein-Dor & Segev, 1978; Lucas, 1978; Zmud, 1979; Ives et al., 1980; Delone & McLean, 1992). Those who favor user satisfaction as a basis for measuring effectiveness theorize that an information system is successful insofar as it results in meeting the user’s objectives in using it (e.g., Ives & Olson, 1984; Amoroso & Cheney, 1991; Delone & McLean, 1992; Doll et al., 1994). Therefore, the satisfaction of the user includes the user’s opinion of the system and its capacity to enhance his/her power to make decisions (Ives et al., 1993).

To measure user satisfaction with information systems, several instruments have been refined, validated, and adopted. These assessment methods differ because of the differences in the characteristics of the information systems that they assess, including end-user computing systems (e.g., Doll et al., 1998), decision support and modeling systems (Schultz & Slevin, 1975; Robey, 1979), interactive systems (e.g., Swanson, 1974), and batch/data processing systems (e.g., Bailey & Pearson, 1983; Ives et al., 1983).

Besides system satisfaction, system usage has also been proposed and used in IS research to measure systems effectiveness. System usage, however, has been used as a measure of effectiveness when the system is optional. The type of usage measure is determined by the purpose and mode of system (Culnan, 1983; Amoroso & Cheney, 1991). One effective method, for example, is simply monitoring and counting certain features of use, the number of log-in times, the length of log-in time, the number of system resources used, or the number of records opened and modified, etc. (Swanson, 1974; Lucas, 1978; Robey, 1979; Ginzberg, 1981). Another method is to ask users to estimate their own or their peers’ use of a particular system (Lucas, 1978; Raymond, 1985). Subjective methods, although less accurate, have been used more frequently by IS researchers (Penniman & Dominick, 1989; Melone, 1990).

When the information system is the only information source available to users, system usage becomes a less reliable measure of effectiveness, and additional or alternative measures (e.g., user satisfaction) have to be adopted. However, when using user satisfaction and system usage to measure the dependent variable of system effectiveness, “...it is important to understand not only the relationship between these psychological constructs, but also the link between attitudes [user satisfaction] and behavior [system use]” (Etezadi-Amoli & Farhoomand, 1991, p. 1). It is through this understanding of such a linkage, that the users’ attitudes/behavior equation can be better interpreted.

The theory of reasoned action (Ajzen & Fishbien, 1975, 1977) seems to be a well-accepted theory, linking attitude (user satisfaction) and behavior (system usage). According to the theory, attitude can be viewed as the amount of affect that one feels for or against some object or behavior. In the context of information systems applications, one can measure the satisfaction of a user with a system (attitude toward a system) and/or a person’s satisfaction with using a system (attitude toward behavior).

Some of the studies investigated the possible relationship between user satisfaction and system usage as two alternative measures of system effectiveness. Others had the exploration of the relationship between the two measures as the main objective of the investigation. Several researchers (e.g., Swanson, 1974; Lucas, 1978; Robey, 1979; O’Reilly, 1982; Raymond, 1985; Ein-Dor & Segev, 1986) found a positive relationship between a user’s positive attitude toward the system and the system usage. Additionally, using an experimental setting, Vasarhelyi (1977) found that actual use of a system could improve users’ satisfaction.

Baroudi et al. (1986), however, were interested in the causal relationship between user satisfaction and system usage, and they found a positive causal relationship between the two constructs where user satisfaction influences system usage. This finding is consistent with the theory of reasoned action (Ajzen & Fishbein, 1975, 1977) and its interpretation of the relationship between attitude and behavior: attitude influences behavior.

Additionally, Davis, et al. (1989) attempted to interpret the relationship between attitudes and usage by using the technology acceptance model, which is a modification of the theory of reasoned action. They hypothesized that the intention of use is the only variable that affects actual use of a system. This intention is a function of the user’s attitude toward the use and the perceived usefulness of the system. The research results support their hypothesis.

Contrary to the findings of the above studies, Schewe (1976) found no correlation between the actual use of the information system and the user’s attitude toward that system. Also, Cheney & Dickson (1982) found no relationship between the user’s information satisfaction and system use. Their interpretation of the results concludes that system use doesn’t necessarily reflect user satisfaction when the system is the only available source of information. Also, Srinivasan (1985) found no relationship between user satisfaction and system usage as two alternate measures of system effectiveness.

One explanation for the lack of relationship between user satisfaction and system usage is that the two measures could be measuring two different constructs of effectiveness. Perhaps this explains why some researchers suggest using