The Relationship of Some Personal and Situational Factors to IS Effectiveness: Empirical Evidence from Egypt

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Most, if not all, of the empirical evidence on information systems effectiveness and its associated factors is confined to the use of data from developed countries, in particular from the USA. The findings of such research cannot necessarily be generalized to other environments where the social, economic, and cultural characteristics are different. Such evidence needs to be first validated using cross-cultural research before it can be used to manage global information systems effectively. This paper reports on the results of research aimed at testing the relationship of user’s age, tenure in the job, organizational level, education, training, duration of system use, and involvement in system development to information systems effectiveness, as measured by user satisfaction and systems usage. Data were collected from 120 managers in 22 Egyptian banks. Age, tenure in the job, and user involvement in systems development were found to be positively correlated with user satisfaction. However, age, organizational level and education were found to be negatively associated with system usage. While beneficial to the Egyptian IS managers, such evidence from developing countries should contribute to the building of a general theory of trans-national global information systems.

The ability of a corporation to compete effectively in a global economy depends on the effectiveness of the information systems (IS) function and its global orientation (e.g., Karimi & Kosynski, 1991). Information systems, however, may not be accepted and used by those individuals for whom the systems were designed and implemented (e.g., Swanson, 1988; Davis et al., 1989). Research findings suggest that IS problems are country-specific and are related to the country’s unique political, legal, economic, cultural, and technological environments (e.g., Deans et al., 1991; Ein-Dor, Segev & Orgad, 1993). Thus, effective management of such systems requires identifying the issues that might be unique to certain cultures (Deans & Ricks, 1991; Palvia & Saraswat, 1992).

While it is important to understand the factors affecting information systems effectiveness, most, if not all, of the currently available empirical evidence is confined to data from developed countries, particularly from the USA (e.g., Lucas, 1975a, 1975b; Montazemi, 1988). Such studies have contributed little to our understanding of the factors that are associated with IS success in underdeveloped countries. Thus, there is a need for IS research to broaden the focus beyond ethnocentric and regional studies in order to build a general theory of trans-national global information systems (Palvia, 1993). A comprehensive model of information systems effectiveness that directly addresses the issue of culture is long overdue, especially with the continuous growth of multinational organizations and the challenges of managing global information systems.

Further, research findings obtained from organizations operating in a Western environment cannot necessarily be generalized to other environments where the social, economic, and cultural characteristics can be fundamentally different. Hence, if the external validity, especially its international dimension (Aharoni & Burton, 1994), of such evidence is to be strengthened, it needs to be validated using cross-cultural research. The investigation of IS issues in a particular area of the world (e.g., Hassan, 1994) emphasizes the possible impact.
of cultural differences on such issues (Wetherbe, Vitalari, & Milner, 1994).

The purpose of this paper is to report on the results of an investigation of the relationship of some personal and situational factors to information systems effectiveness in Egyptian banks. The findings of this study should contribute to the efforts toward building a general theory of trans-national global information systems.

Background

Much of the research on information systems effectiveness has focused on identifying factors conducive to the success or failure of such systems. These factors include, among others, personal characteristics (e.g., Igbia, 1993, 1992; Mawhinney & Lederer, 1990; Ginzberg, 1981; Robey, 1979), task characteristics (Sanders and Courtney, 1985), user involvement (e.g., Amoako-Gyampah, 1993; Barki & Hartwick, 1989), user training (Nelson & Cheney, 1987), and management support (Leitheiser & Wetherbe, 1986).

Such factors may also be applicable as determinants of the success of systems that are implemented in developing countries. However, most, if not all, of the research findings are confined to systems that were implemented in developed countries. As mentioned earlier, one cannot assume such applicability without empirical evidence. Therefore, seven personal and situational variables were selected for investigation as possible determinants of systems effectiveness in Egypt as a developing country. The selection of the variables is based on the existence of literature supporting their relevance as likely determinants of systems effectiveness or success. User satisfaction and system usage, as the dependent variables and surrogate measures of system effectiveness, are discussed next, followed by a discussion of each of the independent variables and the rationale for research hypotheses.

User satisfaction and systems usage
(the dependent variables)

Information systems effectiveness is a multidimensional construct (Delone & McLean, 1992). The measurement of such a construct is one of the issues that, over the years, has generated much interest among information systems (IS) researchers and practitioners (Srinivasan, 1985). Approaches that have been suggested and used to measure information systems effectiveness can be grouped into three categories (Delone & McLean, 1992; Ives & Olson, 1984; Zmud, 1979): performance-related measures, system usage measures, and user satisfaction measures. All the measures have advantages and disadvantages. However, user satisfaction and system usage are two of the oldest and most often used effectiveness measures in IS research that have attempted to identify IS success factors (e.g., Delone & McLean, 1992; Melone, 1990; Lucas, 1975a, 1978; Zmud, 1979; Schewe, 1976; Ives, et al., 1983).

User satisfaction approach assumes that systems effectiveness can be determined as the extent to which the system has achieved its objectives from the user's point of view (Amoroso & Cheney, 1991; Delone & McLean, 1992; Ives & Olson, 1984). Therefore, user satisfaction reflects the user's attitude toward the system and its capacity to provide him/her with the needed information, which can be reflected in better decisions (Ives et al., 1983; Lucas, 1975a). A number of instruments has been developed and used to measure user satisfaction regarding systems with different characteristics, including batch/data processing systems (i.e., Bailey & Pearson, 1983; Ives et al., 1983), interactive systems (i.e., Swanson, 1974; Lucas, 1975a), decision support and modeling systems (e.g., Robey, 1979), and end-user computing (i.e., Doll & Torkzadeh, 1988).

Systems usage, on the other hand, has been recommended and widely used as a measure of systems effectiveness in IS research, particularly when the use of the system output is optional. Modes of use (e.g., batch, on-line) determine the type of system usage measures that should be used to measure effectiveness (i.e., Lucas, 1975a; Amoroso & Cheney (1991); Culnan, 1983). Some of the researchers (i.e., Lucas, 1978; Ginzberg, 1981; Robey, 1979; Swanson, 1974) measured usage by actually monitoring the use in terms of the number of log in times, length of log in time, number of system resources utilized, or number of records accessed and updated. Others used subjective measures by allowing users to estimate their own or their peers' usage of a particular system (i.e., Lucas, 1975a; 1978). Although less accurate, (Davis et al., 1989), subjective measures have been commonly used in IS research (e.g., Melone, 1990).

Although IS literature is replete with arguments for and against the use of these two approaches (e.g., Thong & Yap, 1996; Ginzberg, 1978; Melone, 1990; Sanders & Courtney, 1985; Srinivasan, 1985; Delone & McLean, 1992), there is no absolute perceptual measure of information systems effectiveness which exists across varying technological and organizational contexts. Consequently, multiple measures of information systems effectiveness are required. This study adopts user satisfaction and system usage as two measures of information systems effectiveness.

Personal and Situational Factors
(the independent variables)

Personal and situational characteristics may influence one's perception of information (Lucas, 1982), and the way one processes such information. Individuals with distinct characteristics and backgrounds are expected to have unique ways of interacting with information systems and, consequently, have different attitudes and behavior toward such systems.

For instance, compared to their coworkers, individuals possessing a higher capacity for communications and information exchange (or gate keepers) are expected to have higher education, longer tenure in the organization, and to occupy higher managerial positions (Culnan, 1983). Further, indi-