The impact of organizational factors on management information system success: An investigation in the Iran's agricultural extension providers

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Summary   Information system success has been widely discussed in the past two decades. As systems and technologies are being improved and developed, discussions on their effectiveness and evaluation on their success have been continuously debated by researchers, scholars and practitioners throughout the years. Besides the major concern of IS effectiveness, factors influencing IS effectiveness are also important. One of these factors is the organizational factor. Using perceptual measures, this study aims to investigate the influence of organizational factors on MIS success. Survey questionnaires were gathered from 132 Extension Managers from Iran's Agricultural Extension Providers. Seven items were identified to influence MIS success. They are IS department structure, top management support, management style, managerial IT knowledge, goal alignment, resources allocation and IS infrastructure. The study also identified five MIS success dimensions; systems quality, information quality, perceived Ease of use, organizational impact and individual impact. The study found that the MIS success variables are significantly and highly correlated. The study also found all the organizational factors are significantly correlated to the five IS success factors investigated; the system quality, information quality, perceived ease of use, organizational impact and individual impact. Multiple regression analyses also found goal alignment as the highest predictor of IS success, followed by IS department structure, IS infrastructure and management style.
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Introduction

As we progress in the new millennium and information age, numerous organizations around the world are undergoing massive transformation in an effort to keep up with changing business environments. Increased domestic and global competition, economic downturns, rapidly changing market trends, and volatile financial markets have all increased the pressure on organizations to come up with effective responses to survive and succeed. Further, easing of international trade barriers, economic liberalization, globalization and deregulation have thrown several

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challenges to organizations in developing countries like Iran. To effectively respond to rapid changes in the external environment, several organizations have turned to information technology (IT) to improve their productivity and competitiveness.

However, beginning in the nineties, the public sector's conservative approach to using management information system began to change. The traditional information systems were being replaced by modern systems with improved and sophisticated software and hardware applications. Furthermore, the advent of communication technologies such as the Internet, intranet and extranet in the public sector environment had resulted in better collaboration among the intra and inter providers. Apparently, the above developments have forced the government to re-evaluate and re-assess their systems effectiveness.

DeLone and McLean (1992) conducted a study which resulted in a proposed model of IS success. This study was considered very significant in contributing towards a universal model, which many employed when looking at IS performance. Several attempts have also been made to validate their proposed model (Hussein, Selamat, Mamat, & Abdul, 2005; Seddon & Kiew, 1994). The model is comprised of five dimensions, namely, perceived ease of use, system quality, information quality, individual impact and organizational impact. The authors also pointed that there was a huge gap in the IS studies in which many researchers seems to overlook. These studies had given small focus on the antecedent factors of the IS success. One of the important antecedent factors of IS success is the organizational factor. Therefore the objective of this study is to investigate the impact of organizational factors on MIS success in the agricultural extension providers.

Research framework and hypothesis

IS success dimensions

DeLone and McLean (1992) extensively reviewed previous studies on information system success and introduced a comprehensive taxonomy which posits six major dimensions: system quality, information quality, use, user satisfaction, individual impact, and organizational impact. They suggested a model of causal interdependence between these six IS success dimensions.

A substantial aspect of the DeLone and McLean's (1992) study is that use is considered as an IS success variable. They theorized use as being an explicit antecedent of individual impact, and thus they included it in their model. However, several studies (Seddon, 1997; Straub, Limayem, & Karahanna-Evaisto, 1995; Szjna, 1993) argue that use as an IS success variable is problematic. Szjna (1993) argued that use cannot precisely indicate IS success, especially in a mandatory system use environment. Melone (1990) showed that some degree of discrepancy may exist between actual and perceptual IS use because many systems are not voluntarily used. Seddon (1997) argued that the DeLone and McLean (1992) model is flawed because of its attempt to combine both process and causal explanations of IS success. His claim indicates that use should precede individual impacts, but it does not cause them. He proposed that perceived usefulness might be more adequate than use and

conceptually sharpened the DeLone and McLean (1992) model.

Smithson and Hirschheim (1998) proposed a conceptual IS evaluation framework which consists of three zones-efficiency, effectiveness, and understanding- and applied the framework to the IS outsourcing evaluation.

Myers, Kappelman, and Prybutok (1997) extended the DeLone and McLean (1992) model by adding other IS success and contingency variables such as workgroup impact and organizational size. Pitt, Watson, and Kavan (1995) suggested the incorporation of the service quality dimension into the DeLone and McLean model. DeLone and McLean (2003) revised their original IS success model, updating it with ten years of literature. This updated model suggests employing intention to use instead of use in view of the difficulties of interpreting the multidimensional aspects of use. Rai, Lang, and Welker (2002) empirically investigated the validity of DeLone and McLean (1992) and Seddon's IS success models.

Organizational factors on the IS success

It was predicted that the organizational factor contributes to the IS success of an organization. Lu and Wang (1997) used management style as a measure of organizational context. Saunders and Jones (1992) identified organizational variables as mission, size, goals, top management support, IS executive hierarchical placement, maturity of IS function, size of IS function, management philosophy/style, evaluator perspective, culture, and IS budget size. Ang, Davies, and Finlay (2001) identified organizational factors that influence IT usage as: organizational structure, organizational size, managerial IT knowledge, top management support, financial resources, goal alignment and budgeting method.

From a comprehensive list of organizational factors from related studies (Ang et al., 2001; Broadbent, Weil, & Clair, 1999; Grover, 1993; King & Sabherwal, 1992; Lee & Kim, 2007; Miller & Doyle, 1987; Premkumar & Ramamurthy, 1995 and Tallon, Kraemer, & Gurbaxani, 2000), this study identified seven organizational factors to influence IS success. The factors are IS Department structure, top management support, goal alignment, managerial IT knowledge, management style, resources allocation and IS infrastructure.

Information system (IS) department structure

IS unit structure represents the way in which responsibilities for IS activities are assigned within an organization, and the norms used for carrying out these responsibilities. IS unit structure reflects the manner in which the IS organization has been designed to carry out different IS management tasks and processes (Hicks, Culley, & McMahon, 2006; Olson & Chervany, 1980). Several authors (Brown & Sambamurthy, 1999; Brown & Magill, 1994) have examined the structural arrangements for enhancing IS performance in organizations. The issue of having a centralized or decentralized IS department structure has been an issue of considerable debate (Hicks et al., 2006; Marais, 1995; Von Simson, 1990). On the other hand, there were studies which indicated that