



EIS Information: Use and Quality Determinants

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ABSTRACT

This article reports on the findings of research investigating the influence of information quality on EIS information use, as well as the possible impact of ease of use, user involvement, IS maturity, and system sophistication on EIS information quality. To test the research hypotheses, data was collected from 216 UK-based executives. A structural equation modeling (SEM) technique for data analysis and model measurement was applied. Information quality was found to influence EIS information use. Also, ease of use, user involvement, the IS integration dimension of IS maturity, and EIS sophistication were found to influence executives' perception of information quality. Further findings, limitations, implications for researchers, and practitioners are discussed.

Keywords: ease of use; EIS; EIS sophistication; information quality; information use; IS maturity; UK; user involvement

INTRODUCTION

Information use is important for organizational learning and competitive advantages, and an understanding of the factors that affect such usage is critical (Low & Mohr, 2001). Managers receive information in various forms (e.g., printed, graphics, verbal, visual, etc.) and from different internal and external sources (e.g., memos and letters, scheduled and unscheduled meetings, telephone, office visits, computer reports, periodicals, conventions, social/civic activities, etc.). Earlier research

findings indicated that executives relied more heavily on informal sources of information, compared to formal sources. Of the written media, memos and non-computer reports were considered more valuable than computer reports (McLeod, Jones, & Poitevent, 1984; Jones & McLeod, 1986). However, later research findings show an improvement in managers' ranking of computer-based information sources, compared to non-computer-based sources, and more emphasis on external sources, compared to internal resources (e.g., Benard & Satir, 1993; Lan & Scott, 1996).

Executive information systems (EISs) are systems that provide executives with information that is relevant to their work (Walstrom & Wilson, 1997, p. 77). EISs are assumed to provide improvements in the quantity and quality of information made available to executives. This includes providing more timely, concise, relevant, and accessible information. However, since an EIS is one of many information sources available to managers to support their work activities, the extent to which managers use this source is expected to vary. Among other factors, EIS use may be influenced by its users' perception of information quality (Seddon & Kiew, 1994; Leidner, 1996). In earlier investigations, EIS information quality was ranked as the most important characteristic of an executive information system (Bergeron, Raymond, & Lagorge, 1991), and the frequency of EIS use was best explained by the quality of information (Leidner, 1996).

Understanding the factors that possibly influence EIS information quality is crucial to EIS development and organizational information management. However, most of the prior EIS research focused on the reasons and methods of EIS development and implementation (e.g., Rockart & DeLong, 1988; Watson, Rainer, & Houdeshel, 1997; Bergeron et al., 1991; Rainer & Watson, 1995; Watson & Carte, 2000; Poor & Wagner, 2001). In addition, much of the limited prior research on EIS use focused on the mode, benefits, and impact of use on decision making (e.g., Elam & Leidner, 1995; Nord & Nord, 1995; Frolick, Parzinger, Rainer, & Ramarapu, 1997). In addition, the literature on information quality is generally prescriptive, and empirical evidence that links information quality to EIS information use is rather limited.

Little is known about the factors that influence systems-related perceptions

(Agarwal, Prasad, & Zanino, 1996; Igbaria, Guimaraes, & Davis, 1995; Venkatesh & Davis, 1994), including the perception of EIS information quality. This study investigates the relationship of EIS information use to EIS information quality and the possible impact of ease of use, user involvement, information systems (IS) maturity, and system sophistication on EIS information quality using UK-based data.

The article is organized accordingly. The first section presents the study background, followed by the research model and hypotheses, data analysis and results, discussion, research limitations, and the article ends with conclusions.

BACKGROUND

Failure stories of EIS in organizations have been documented in the literature (e.g., Glover, Watson, & Rainer, 1992; Rainer & Watson, 1995; Young & Watson, 1995; Nandhakumar & Jones, 1997; Liang & Miranda, 2001). Such failures can be linked to organizational, management, social, cultural, behavioral, psychological, and technological factors (McBride, 1997; Nandhakumar & Jones, 1997; Poon & Wagner, 2001). Executives are often disappointed by the quality of information received from EIS and get frustrated when trying to operate them (Pervan & Phua, 1997).

Information quality is believed to be one of the most important characteristics that determine the degree to which information is used (O'Reilly, 1982). The rather limited previous empirical research on information quality and information systems effectiveness suggests a positive relationship between perceived information quality and information use. In particular, information quality was found to be central to EIS success (e.g., Bergeron, Raymond,

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