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A contingency model of perceived effectiveness in accounting information systems: Organizational coordination and control effects

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Abstract

A contingency model is advanced that examines sources of requirements for organizational coordination and control as they affect the extent of integration in an accounting information system. Requirements that are contingent on the degree of organizational formalization, information interdependence among functional areas, and dependence in interorganizational information sharing and electronic data interchange links, are examined. The congruence or fit of system integration with those requirements is a key concept that influences beliefs about system effectiveness. Results of the empirical study indicated that, as hypothesized, the fit between the accounting system design and the contingency factors resulted in a more successful system. Specifically, system fit was a significant factor that explained variations in perceived AIS effectiveness, as measured by decision makers' perceived satisfaction with the accuracy and monitoring effectiveness of output information. The effect of system fit on a second factor of perceived AIS effectiveness, as measured by decision-makers' satisfaction with the perceived quality of information content in system outputs, was only marginally significant. The study addresses an important area in accounting systems research that directly relates to the decision facilitation and control objectives of accounting information.

Keywords: Accounting information systems; Perceived information system effectiveness; Contingency theory; Interorganizational systems.

1. Introduction

A critical research issue in the fields of accounting and management decision-making concerns the fit of the accounting information system (AIS) with the organizational requirements for information communication and control. An AIS is defined here as a computer-based system that processes financial information and supports decision tasks in the context of coordination and control of organizational activities. Prior accounting research has examined different models of fit between an AIS and an organization's task technology, structure, and environment (Chenhall and Morris, 1986; Gordon and Miller, 1976; Gordon and Narayanan, 1984; Kim, 1988; Macintosh and Daft, 1987; Mia and Chenhall, 1994). Although these earlier models have provided useful directions for AIS research, they have not examined specific system design constructs in relation to system effectiveness. The present study adds to this body of literature by developing a specific system design construct, "AIS Integration," and by examining its functional relationship with perceived system effectiveness. AIS Integration, in turn, is hypothesized to be a function of a number of contingency constraints that create organizational coordination and control requirements. Sources of contingency con-

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straints on AIS design have been identified through a review of prior accounting studies. In addition, this study introduces constraints due to interorganizational interactions that have not been examined before in the accounting systems literature.

The approach in this study is consistent with the information-processing paradigm of organizational design (Daft and Lengel, 1986; Galbraith, 1973; Tushman and Nadler, 1978), which would suggest that AIS design represents a response to the requirements for organizational coordination and control (OCC). AIS integration refers to a particular design state where the system in its implemented form can provide output information that may be effectively used to address OCC problems and requirements. Contingent variables, such as (a) the degree of formalization in the structure of an organization (Hage and Aiken, 1969; Simons, 1987), (b) interdependencies in information requirements between functional areas within an organization (Govindarajan and Fisher, 1990; Thompson, 1967), and (c) dependencies due to interorganizational information sharing and electronic data interchange (EDI) links (Bakos, 1991; Srinivasan et al., 1994; Zaheer and Venkatraman, 1994), influence the extent to which organizations experience different levels of coordination and control problems. AIS integration can resolve difficulties in coordination and control that are created by these contingent variables.

The purpose of this study is to empirically examine the relationship between AIS integration and perceptions of system effectiveness. Specifically, it is hypothesized that to the extent that AIS design provides for system integration, as necessitated by the three contingent variables mentioned above, the system would be perceived as effective. This hypothesis is tested with data collected from firms in the United States using the survey research method. Results partially confirm the hypothesis that the degree of fit between AIS integration and the contingent variables predicts AIS effectiveness. There is stronger support for the hypothesis when AIS effectiveness is defined by decision-makers' satisfaction with the accuracy and monitoring effectiveness of output information than by the more traditional definition of satisfaction with quality of information content in system outputs.

The remainder of the article is organized as follows: In the next section, research that relates to individual components of the research model is reviewed. The theoretical framework is developed and the research hypothesis for the study is advanced. The research method for the study is presented next, followed by a presentation of the empirical findings. The article concludes with a discussion of the findings and with suggestions for future research.

2. Theoretical framework

The research model for the study is presented in Fig. 1. The model posits that perceptions of system effectiveness will depend on the fit between AIS Integration and the contingent factors of organizational formalization, information interdependence among functional areas within the organization, as well as interdependence with other organizations. These contingencies are likely to create requirements for integrated information that are necessary for the satisfaction of coordination and control needs within an organization. The contingency formulation that is assumed in this article is that the design of an AIS will be adapted to respond to contingencies in expectation that the system will meet the information requirements of its users and thus be perceived as effective. The model discussion is organized around its major components, starting with a general discussion of the use of a contingency framework for AIS design.

2.1. Contingency framework for AIS design and effectiveness

The research issues that are central to the organizational literature relate to the design of internally consistent organizational mechanisms that will ensure managerial and economic effectiveness (Galbraith, 1995; Zimmerman, 1995). Accounting information systems are considered important organizational mechanisms that are critical for effective decision management and control in organizations (Jensen, 1983; Zimmerman, 1995). Differences in requirements for organizational coordination and control across organizations, therefore, as indicated by such contingencies as organizational context and structure, are likely to result in differences in accounting systems (Jensen, 1983, 325). As Otley states, "Accounting systems are an important part of the fabric of organisational life and need to be evaluated in their wider managerial, organisational and environmental context" (1980, 422). The contingency theory of organizational design (Daft and Lengel, 1986; Galbraith, 1973; Tushman and Nadler, 1978) can therefore suggest relevant models for the effective design of AISs.

This study attempts to extend prior models and address criticisms of specific applications. First, it expands the scope in defining organizational context to also include effects due to interorganizational interactions. The examination of multiple contingencies that may have a joint influence on system design and performance can improve the explanatory ability of a research model (Gresov, 1989). Second, this study addresses, in part, criticisms of specific appli-