The relationship between user participation and system success: a simultaneous contingency approach

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Abstract

The relationship between user participation and information system (IS) success has drawn attention from researchers for some time. It is assumed that strong participation of future users in the design of IS would lead to successful outcomes in terms of more IS usage, greater user acceptance, and increased user satisfaction. However, in spite of this, much of the empirical research so far has been unable to demonstrate its benefits. This paper examines the participation–success relationship in a broader context, where the effects of user participation and two other factors, user attitudes and user involvement, on system success occur simultaneously. Other contingency variables considered here are: system impact, system complexity, and development methodology. The theoretical framework and the associated hypotheses are empirically tested by a survey of 32 organizations. Empirical results corroborate the positive link between user participation and user satisfaction and provide evidence on the interplay between user attitudes and user involvement. © 2000 Elsevier Science B.V. All rights reserved.

1. Introduction

User participation has long been regarded as an important factor to improve the chances of the success in developing an information system (e.g., [6,31,36,68]). User participation refers to 'the various design related behaviors and activities that the target users or their representatives perform in the systems development process' [5]. Through participation, users of an information system (IS) can interact with system designers in the stages of planning, analysis, design, testing, and implementation and, hence, aid in many aspects of the system development process. A variety of development methodologies, such as code-velopment, participative design (PD) and joint application design (JAD), have been proposed to operationalize user participation [3,10].

There are a number of benefits which can be expected of such user participative behaviors. Ives and Olson [37] have pointed out that user participation in system development can enhance system quality through a more accurate and complete identification of user information requirements [60,63], knowledge and expertise about the organization the system is

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intended to support [49], avoidance of unacceptable or unimportant system features, and a better user understanding about the system. User participation is also believed to increase user acceptance of the system with a more realistic expectation about system capabilities [27], an opportunity for users and designers to resolve conflicts about design issues [41], users' feelings of ownership toward the system, a decrease in user resistance to possible changes incurred by the system, and greater commitment from users [51]. In consequence, user participation has been extensively sought and encouraged by practitioners in developing IS [32].

In the meantime, researchers also have made great efforts to find the empirical evidence of efficacy of user participation in improving system success. However, the reported results have been mixed and fragmented. In an earlier comprehensive review of 22 empirical studies conducted from 1959 to 1981, Ives and Olson were able to identify only eight (36%) that show a positive link between user participation and some measure of system success, including system quality [9,24], system usage [68], user behavior/attitudes [1,35], and information satisfaction [22,30,38]. The results from other studies are either inconclusive or contrary to expectations.

Cavaye [11] has reviewed 19 more recent studies published from 1982 to 1992, but also found only seven (37%) of them can substantiate a positive participation–success relationship [2,7,14,16,23,40,42]. Despite the fact that 10 more years of research have lapsed, the progress seems to be limited and slow. The findings are still mixed and fragmented.

Researchers have identified several possible causes of the ambiguity and contradiction. Poor research methods and the omission of important contextual factors are possible causes [53]. Also a simple direct causal relationship between user participation and system success may not be sufficient. DeBrabander and Edstrom [13] suggested that the context in which the system is being developed has to be considered. Hence, the contingency approach has been widely utilized to address this issue (e.g., [17,43,48,50,54,64,65,69]). This is helpful in identifying factors that may alter the consequences of a process. However, most of these models are *sequential*, with assumed direct causal relationships.

Furthermore, it is suggested that several confounding constructs have to be carefully defined to reduce the possibility of confusing results (e.g., [6,44]). Hwang and Thorn [34] meta-analyzed 25 studies and found 'both user involvement and user participation are beneficial, but the magnitude of these benefits much depend on how involvement and its effects are defined'.

The purpose of this paper is to explore the relationship between user participation and system success in a broader context where all major effects on system success are *simultaneously* and *jointly* determined. Due to the complexity of this scenario, we believe it is beneficial and appropriate to study the relationship by means of a simultaneity and contingency approach.

2. Theoretical model and hypotheses

The terms *user participation* and *user involvement* in virtually all MIS research were used interchangeably in the past. To align research with the relevant concepts in such disciplines as psychology, marketing, and organizational behavior and, hence, to take advantage of their experience, Barki and Hartwick [6] felt is was necessary to differentiate between these two constructs, with *user participation* referring to 'the behaviors and activities that the target users or their representatives perform in the systems development process,' and *user involvement* to 'a subjective psychological state of the individual,' depending on the importance and personal relevance that users attach to a particular system or to IS in general. Fig. 1 presents our theoretical model.

2.1. Participation–success relationship

User participation in the IS development process has been regarded as a special case of participative decision making (PDM), which refers to group decision making. Participation from users can be classified into type and extent. The type may be consultative, representative, or consensus. The extent increases in degree from consultative to consensus [57]. Because the degree of participation is a more general concept than the type, it is used in this study to measure user participation.