Systems Analysts’ Attitudes Toward Information Systems Development

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Researchers and practitioners observe that systems analysts play a key role in systems development success (Lyytinen and Hirschheim, 1987; Markus, 1983; Zmud, 1979). Besides other factors (e.g., organizational management, technology, complexity, political influences), systems analysts’ attitudes toward system development are consistently and significantly related to the quality of the final products (Bostrom and Heinen, 1977a, 1977b; Lyytinen, 1988; Zmud, 1979). A diagnosis of the attitudes of systems analysts may provide insights leading to future system success.

Certain researchers argue that systems analysts subscribe to too technical and economic design ideals (Kaiser and Srinivasan, 1982; Kumar and Welke, 1984). Alleged causes of system failures include the analysts’ ignorance of social, political, behavioral, managerial, and psychological factors. Suggestions for improvements to system development include formal training or education of systems analysts in managerial skills, behavioral ideas, and communications techniques (Benbasat, Dexter, and Mantha, 1980; Green, 1989). Others suggest improvements that include use of a socio-technical approach to system design (Bostrom and Heinen, 1977a, 1977b; Davis, et al., 1992; Markus, 1983). These approaches, however, are expensive and largely unproven. What is more important, the implicit assumption of these proposed solutions, that systems analysts have an undifferentiated technical attitude, may be incorrect. To clarify analysts’ attitudes, Dos Santos and Hawk (1988) describe a survey study of 30 systems analysts. The study found that some systems analysts had a technical orientation, however, the majority had a user or socio-political orientation.

The intent of this study is to confirm or refute the identification of major attitudes toward system development held by systems analysts as identified by Dos Santos and Hawk (1988). This study will correct problems in the earlier study associated with the small homogeneous sample. Moreover, this study will describe analysts’ attitudes, and examine relationships of several demographic traits to analysts’ attitudes.

The sequence of issues follows a logical progression to help in addressing the following questions: 1) do systems analysts possess diverse attitudes toward system develop-
ment; 2) which primary attitudes do systems analysts hold; and 3) are analysts’ attitudes related to their demographic characteristics? Results of this study will have implications for information system (IS) practitioners and researchers by: 1) providing guidance for planning education and training programs for system analysts, 2) presenting information for effective development team formation, and 3) suggesting areas that IS researchers may wish to reevaluate and refine, such as current strategies for system development.

Methods

This study used the instrument developed by Dos Santos and Hawk (1988). Exploratory principal components analysis was used to decide if the three categories of orientation (user orientation, socio-political orientation, and technical orientation) hold for a larger, more heterogeneous sample.

Questionnaire

The survey instrument was a set of 33 statements on various aspects of system development (Dos Santos and Hawk, 1988); abbreviated statements are presented in Table 1. The set included statements on user/analysts communication, individual differences among users, technical capabilities of the development staff, and systems that alter the balance of power in an organization. Instructions requested respondents to rate how strongly they believed the listed statements were critical to successful system development. A Likert scale was used with strongly disagree at the low anchor of one and strongly agree on the high anchor at five.

Procedure and Sample

The questionnaire was pretested on a class of MBA students. Ambiguities in the instructions were corrected after the pretest. Questionnaires were then provided to six Chief Information Officers (CIO) from six organizations in the Kansas City metropolitan area. The number of employees in these organizations ranged from 2,500 to more than 25,000 employees with an approximate average of about 1,000 IS personnel. The CIOs in turn asked at least 40 of their staff members to complete the survey. Respondents were system analysts, IS project leaders, and IS department managers with experience in system development and were assured that their responses would be kept confidential. Apparently the direct request from the CIOs resulted in a full response. Two hundred forty four questionnaires were returned with 239 used in the data analysis due to question omissions.

Table 2 shows the respondents’ working experience in information systems design and development. More than half of the respondents (51%) had more than nine years of work experience, and about half the respondents (46.4%) had system experience in more than five application areas. Only 5.9 percent had less than two years of work experience and 3.8 percent had system experience in only one application area. The data showed that the respondents were experienced in the field of system development. Complexity of applications varied, suggesting that the analysts collectively had been involved in large and small projects.

The respondents were well educated, with 63 percent (149) having completed college and 22.3 percent (53) having completed a graduate degree program (Table 3). Within the 119 college educated respondents, 31 had a college diploma in Computer Science and 33 had a college diploma in Information Systems. Seventy-one percent (170) were male and 29 percent (69) were female. The sample was young, but still represented a wide age spectrum. The first, second and third quartiles of age were respectively 31, 34 and 41 years old. About half the respondents had management responsibilities.

Results

To classify respondents with similar attitudes, component analysis was done. First, principal components analysis was used to extract the dominant attitude components. Three components with eigenvalues greater than chance expectation were retained for further analysis (Lautenschlager, 1989). Components were then rotated by the varimax procedure (Table 4). The five highest loadings in each component served to identify associated questions.

Reliability of measurement for each component was computed as follows. First, the scores of the respondents on
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