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# **A Preliminary Examination of Stressors in Information Systems Personnel**

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**Abstract**

The impact of stress on information systems (IS) personnel has been noted in several recent practitioner articles (McGee, 1996). However, no empirical studies have been conducted to identify stressors for information systems personnel. This research reports the results of three studies designed to examine and measure factors which cause stress in IS personnel. In the first study, data collected from 38 IS employees in an insurance company was analyzed for specific stress factors. In the second study, an openended questionnaire was filled out by another 30 employees of the same company. In the third study, a final questionnaire was administered to 187 IS professionals. Data collected from the survey resulted in the identification of 12 distinct stress factors. A secondorder factor analysis identified three factors related to users, time constraints, and the work environment.

## **Introduction**

Stress among IS professionals has been examined to a limited extent in the IS literature. McGee (1996) notes that virtualoffice technology, top management demands, and downsizing are some of the key factors leading to stress and burnout. She argues that stress and burnout are more severe for IS professionals than other employees because IS employees are expected to ensure that "technology and systems work 24 hours a day." Similarly, King (1995) notes that stress is a result of more companies deploying increasingly new and more complex technologies. For example, help desk workers are prone to burnout after 18 months. Similarly, Ludlum (1989) cites long and odd hours, unrealistic deadlines, and the proliferation of technology as the main reasons for job dissatisfaction and burnout among IS professionals.

Sonnentag, Brodbeck, Heinbokel, & Stolte (1994) surveyed 180 software professionals from 29 software development teams and found that work stressors were positively related to burnout. They also found that a lack of control at work, work complexity, and openness to criticism within teams were significantly and negatively related to a lack of identification.

There have, however, been no empirical studies in the IS literature to comprehensively determine the causes of stress in IS employees. We propose to empirically identify sources of stress in the workplace for IS employees and propose a set of reliable scales to measure aspects of work stress.

## **Research Study**

Since there are few previous studies that have examined stress factors, the need to develop a facetbased measure was critical. This implied that initial item generation for a broader study had to be undertaken. Hence this study involved three distinct steps of data collection and analysis.

In the first step, IS managers in an insurance company in the midwest were requested to allow the researchers access to IS employees to gain an understanding of stress factors. The company was selected because of prior contact of one of the researchers with the IS managers in that organization. The IS department in this organization had previously conducted an openended survey to understand and identify stress factors in the work place. The results of this survey were given to the researchers. Factors noted by 38 respondents as being responsible for stress were examined and 220 nonindependent items were isolated.

In the second phase of the study, an openended questionnaire was sent to 30 other IS employees of the company. The questionnaire asked respondents: "What specific situations/happenings, events, etc., in your present job have caused you to feel upset, tense, stressed, worried, anxious, or uptight?" Responses from these additional questionnaires were added to the 220 items from the first study and duplicate factors were deleted. This resulted in a total of 73 stress items.

In the third phase of the study, a questionnaire was created with the 73 items identified above and sent to 200 IS employees randomly selected from a "Directory of IS Employees" prepared by the local Chamber of Commerce in a midwestern city. Onehundred and eightyseven responses were received and were used in the analysis.

## Results

*Dimensionality of the stress scales.* The 73 stress items were *a priori* grouped into 8 scales lack of training (4 items), lack of time and deadlines (14 items), coworkers (7 items), supervisors (10 items), users (15 items), job insecurity (6 items), career decisions (3 items), and technical factors (8 items).

In order to assess the dimensionality of individual scales, each set of items was factor analyzed. Based on factor loadings and reliability analyses, 12 distinct factors were identified. These are: lack of training (3 items, alpha = 0.78), meeting deadlines (6 items, alpha = 0.85), lack of time for job (3 items, alpha = 0.84), work interfering with personal life (4 items, alpha = 0.74), communications problems with coworkers (7 items, alpha = 0.86), supervisors (6 items, alpha = 0.89), communications with users (3 items, alpha = 0.79), meeting user needs (4 items, alpha = 0.80), user demands (7 items, alpha = 0.90), job insecurity (6 items, alpha = 0.92), career choices (3 items, alpha = 0.85), and technical aspects (6 items, alpha = 0.97).

A secondorder factor analysis was computed to examine the relations among the proposed measures of stress. The results of the second factor analysis shows the presence of three factors. These are:

1. Users: comprising three scales communication with users, meeting user needs, and user demands;
2. Time constraints: comprising three scales meeting deadlines, lack of time for job, and work interfering with personal life; and
3. Work environment: comprising four scales lack of training, job insecurity, supervisors, and communication problems with coworkers.

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