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A STUDY OF ENTRY-LEVEL INFORMATION TECHNOLOGY WORKERS: EMPLOYEE EXPECTATIONS AND JOB PERCEPTIONS

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1   INTRODUCTION

As noted in the President's Information Technology Advisory Committee (PITAC) report (1999), the need for a "continuous supply of well-trained, high-quality professionals" in information technology (IT) is critical for companies to maintain global competitiveness. Yet, as discussed in the report and elsewhere, a tightness in the market for IT professionals has been chronic for at least two decades and, despite the current slowdown, is expected to accelerate in the present decade and beyond (Council on Competitiveness 1998; Eisenberg 2002).

Even in the current fluctuating job market for IT workers, attracting, motivating, and retaining workers continues to be a formidable challenge. Increasingly firms in the IT industry operate on "Internet Time," necessitating a core workforce that can provide innovative products and services, as well as respond to competitive threats (Barney 1995). Additionally, most non-IT industry companies are also feeling the pressure via the need to utilize IT in such forms as developing enterprise resource planning systems, setting up intranets, and forging a greater role in the e-business space. Interestingly, the continuing competition for the IT workers is causing companies to think more broadly about workplace issues (Useem 2000). This paper aims to enhance our understanding of individual and organizational context factors that influence important IT employee attitudes, such as job satisfaction, organizational commitment, and turnover intention. Specifically, we have the following three research objectives:

1.   Understand expectations of entry-level IT professionals concerning their work environments

2.   Understand how entry-level IT professionals perceive the workplace as meeting their expectations

3   Examine the relationship between expectations, importance, and job perceptions in the context of entry-level IT professionals

2   THEORETICAL PERSPECTIVES

We draw from research in IT and organizational behavior to develop a model of IT workers' job perceptions. Specifically, IT research has suggested a variety of factors that are important in employee job perceptions (Crepeau et al. 1992; Ferrat and Short 1988; Guimaraes and Igbaria 1992; Igbaria and Baroudi 1993; Igbaria and Siegel 1992; Schein 1985, 1996). Similarly, research in organizational behavior has proposed a variety of factors. However, there is a need for a holistic view of IT worker job perceptions. IT and organizational behavior research both broadly suggest that rewards, tangible (e.g., compensation and benefits) and intangible (e.g., balanced work and personal life, development opportunities, and managerial support), influence individuals'

job perceptions (Lawler and Finegold 2000; O'Neal 1998). Thus, viewing the IT workplace from this perspective is likely to provide important insights into success and retention issues.

While there is considerable evidence that compensation influences performance and affects retention patterns, it is certainly not the only influencing factor (Bartol and Durham 2000; Bartol and Locke 2000). First, tangible rewards represent only part of the potential reward package. Second, their overemphasis may actually encourage cross-organizational comparisons and job-hopping. Third, unless they are combined with other rewarding factors, compensation packages are relatively easy to copy, limiting their use as a source of competitive advantage in attracting and retaining IT talent. Thus, one emerging trend, related to social exchange theory (Blau 1964), is a growing recognition by companies that there is a greater need to view reward systems in broader terms and as encompassing other factors, such as skills development, supervisory relationships, job security, work/life balance, variety, autonomy, and creativity (Hackman and Oldham 1975 1980; Hom and Griffeth 1995; Lawler and Finegold 2000; O'Neal 1998; Tsui et al. 1997). For example, recent research (Moore 2000) supports the contention that work overload and work exhaustion are problems among IT workers and are factors in turnover. On the other hand, a survey conducted by WorldatWork and The Segal Company (1999) indicates that companies are increasingly implementing work/life programs. These and related efforts are aimed at increasing employee satisfaction, demonstrating reciprocity, and encouraging good performance and retention. However, evidence that these types of factors will facilitate the development of positive attitudes and retention in the IT workplace is sorely needed (Baroudi and Igbaria 1994/95; Igbaria and Baroudi 1995; Truman and Baroudi 1994). Specifically, we will study the following core factors: job security, work-family balance, pay, skill development, coworkers, travel, variety, autonomy, prestige, and creativity.

While these various factors are expected to influence job perceptions, "more" may not always be better. Specifically, while higher pay is always likely to be better, a lot of travel or too much variety may not necessarily be good, although some travel and variety may be desirable to employees. Therefore, in understanding how these various factors contribute to job perceptions, it is important to recognize that the relationship between expectations of various factors and job perceptions may be non-linear (Edwards and Parry 1993). In order to understand how these factors may play out, we draw from value congruence theory that suggests attitudes and behaviors are determined not by the person or the organizational setting separately, but rather by the fit between the fundamental characteristics of a person and the organization (Kalliath and Bluedorn 1999; Kraimer 1997; Kristof 1996; Meglino et al. 1989). Strong empirical support has been found for the positive effect of value congruence on individuals work attitudes (e.g., organizational commitment, job satisfaction) and turnover behavior (Kristof 1996). We propose that the effect of the expectations on job perceptions will be moderated by the importance—in other words, the extent to which IT professionals perceive their workplace as being congruent with their personal values will influence job perceptions.
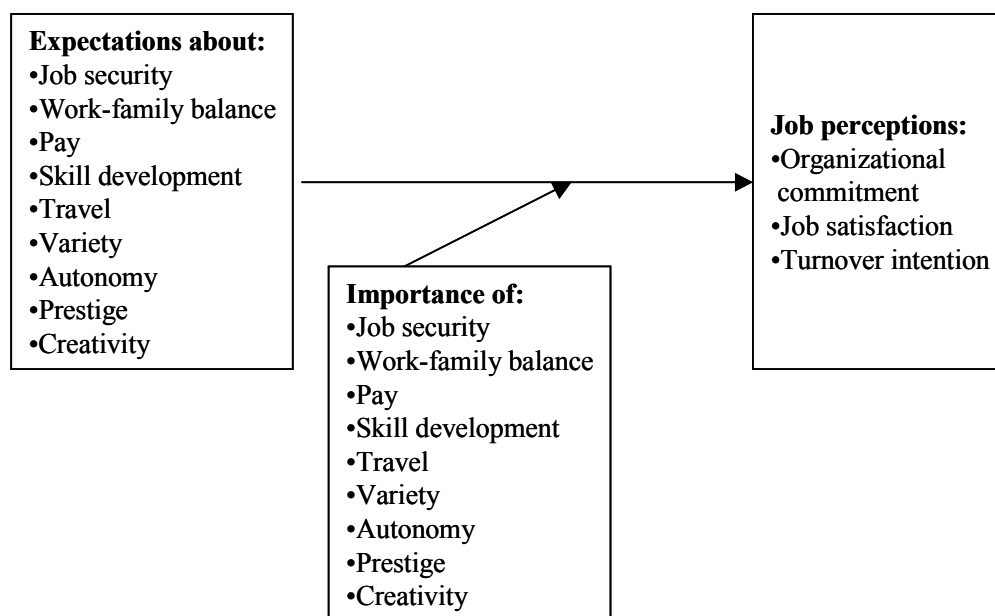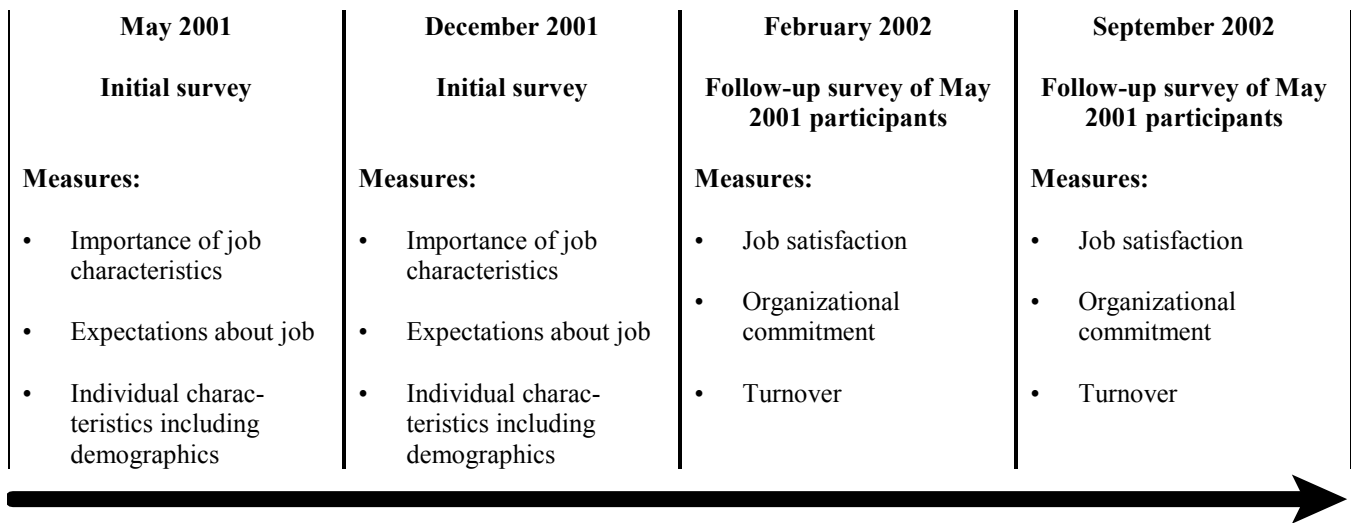

Figure 1. Research Model

May 2001	**December 2001**	**February 2002**	**September 2002**
Initial survey	**Initial survey**	**Follow-up survey of May 2001 participants**	**Follow-up survey of May 2001 participants**
Measures:	**Measures:**	**Measures:**	**Measures:**
• Importance of job characteristics	• Importance of job characteristics	• Job satisfaction	• Job satisfaction
• Expectations about job	• Expectations about job	• Organizational commitment	• Organizational commitment
• Individual charac-teristics including demographics	• Individual charac-teristics including demographics	• Turnover	• Turnover

Figure 2. Data Collection Timeline

3 METHOD

The research project, supported by a 3-year grant from the National Science Foundation, employs a study of entry-level workers. An initial survey measuring importance of various factors and expectations about the chosen job are measured close to graduation. A follow-up survey is conducted 10 months after the initial survey.

The sample of participants was chosen from the population of seniors in business schools in four universities across the country in order to gain a representative sample of individuals from a variety of regions and ethnic backgrounds. The data collection began in May 2001 and is ongoing. A total of ,1034 entry-level workers completed the initial survey in May 2001 and December 2001. The data from May 2001 (N = 453) have been entered and verified. Of the 453 entry-level workers to fill out the survey in May 2001 192 were IT workers. We report the preliminary results from the analysis of that data in this paper; as we note later, we will be presenting the results from an analysis of the data collected from the entire sample and both points of measurement at ICIS. The timeline in Figure 2 describes the data collection.

The items used to measure the various constructs in the initial survey were drawn from prior research or developed and pre-tested in related research (Edwards et al. 2000). The respondents were asked to rate the importance of the various characteristics in terms of the role it played in influencing their job choice decision. Also, respondents were asked to rate the how much they expected to see each of the characteristics in their chosen job. In addition to the constructs of the various theoretical perspectives, demographic characteristics were measured.

The follow-up survey of the respondents who completed the initial survey in May 2001 was conducted in February 2002 by a survey research firm. The authors developed the phone survey instrument in collaboration with the survey research firm, and the instrument was pretested by the survey research firm. The interviewers conducting the phone survey were experienced at this form of data collection. Up to 25 callbacks were made in order to reach a respondent. The phone survey data have been entered and verified.

4 RESULTS

Prior to examining support for the two key theoretical perspectives, we conducted tests to examine the reliability and validity of the scales. Cronbach alphas of all scales were found to be acceptable, .70 or greater. Also, principal components analysis with varimax rotation supported convergent and discriminant validity. Based on the data that were gathered in May 2001, we examined the descriptive statistics. Table 1 presents the descriptive statistics for the importance and expectations of various factors. Based on the information in Table 1, it appears that the importance of various factors range in how important they are, with skill development being the most important and travel being the least important. Similarly, the participants' expectations of how much

Table 1. Descriptive Statistics

	Importance of characteristics in job-choice decision		Expectations of how much will be present in the accepted job	
	M	**SD**	**M**	**SD**
Job security	5.88	1.18	5.29	1.32
Work-family balance	5.80	1.17	5.46	1.04
Pay	5.94	.97	5.62	1.41
Skill development	6.58	.54	6.18	1.26
Coworkers	5.78	.95	5.67	1.11
Travel	4.45	1.40	4.64	1.73
Variety	5.14	1.16	5.33	1.23
Autonomy	5.07	1.12	4.74	1.21
Prestige	5.19	1.14	5.82	1.32
Creativity	5.39	.94	5.32	1.11

of these characteristics will be present in their job also varied, with skill development being the factor they expected to see the most and travel being the one they were least likely to experience. Also, in general for any given characteristic (e.g., job security), the importance was higher than the expectation.

5 PROJECT STATUS AND RESULTS TO BE REPORTED AT ICIS 2002

While these preliminary results are interesting in pointing to some differences in the importance and expectations about various job characteristics, the primary strength of the current work comes from the overall model test that will be conducted with the follow-up data. The follow-up data that we have gathered will be used to examine support for the proposed model. The follow-up phone survey of the May 2001 respondents yielded a return of 220 responses (out of 453, for a response rate of 49 percent in the follow-up). Of these, 48 out of 192 were IT majors. Ultimately, the model test will allow an examination of how well the proposed model predicts IT employee attitudes in the workplace.

6 KEY CONTRIBUTIONS

The current research offers several contributions to science and practice, particularly in IT. This is among the very first investigations to examine expectations, attitudes, and turnover among entry-level IT professionals. We combine two key theoretical perspectives and examine their efficacy in predicting retention of IT workers. Furthermore, this study's findings provide critical information that could in turn influence selection and hiring decisions related to IT workers. Finally, by conducting a large-scale, longitudinal study, we hope to raise several directions for future research in IT personnel.

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