

2006

The information technology professional's psychological contract viewed through their employment arrangement and the relationship to organizational behaviors

Sandra Kay Newton
University of South Florida

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The Information Technology Professional's Psychological Contract Viewed Through
Their Employment Arrangement and the Relationship to Organizational Behaviors

by

Sandra Kay Newton

A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
Department of Information Systems and Decision Sciences
College of Business Administration
University of South Florida

Major Professor: James Ellis Blanton, Ph.D.
Rosann W. Collins, Ph.D.
Joni L. Jones, Ph.D.
Richard Will, Ph.D.

Date of Approval:
January 10, 2006

Keywords: IT personnel management, social information processing theory,
organizational citizenship behaviors, innovative work

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ACKNOWLEDGEMENTS

I could not have succeeded on this marvelous, yet painful (at times) adventure had it not been for some very special people in my life. To my family and friends, I am very fortunate to have you in my life. You saw me through this journey, and were at the finish line cheering for me. You have my heartfelt thanks and appreciation for your love, friendship, and support.

A special acknowledgement and thanks to my committee chair and main professor. Ellis, you were there the first semester providing me with opportunities to succeed. I learned early that research is not easy, but in the end worth the pain. A special thank you to my other committee team members, Rosann, Joni, and Rick for your wisdom, guidance, and sharing of insights.

I cannot forget my fellow “outliers.” This journey has given us some interesting stories to remember: Steve, Tom, Cindy, Madeline, George, Gary, Mike H., Tim, Keith, and Mike D. Good luck and best wishes to you all.

To the Information Systems/Decision Sciences faculty and staff, especially Judy, Annette, Chris, and Corinna, you are great! And to my USF student and alumni colleagues who responded to my survey - thank you.

In summary...

Life is all about choices, and I am grateful that I made this one.

TABLE OF CONTENTS

LIST OF TABLES	v
LIST OF FIGURES	vi
ABSTRACT.....	vii
CHAPTER ONE INTRODUCTION.....	1
Motivation for Research	2
Theoretical Support.....	3
Organizational Behaviors.....	4
Psychological Contracts.....	5
Research Questions.....	6
Statement of Contributions	7
CHAPTER TWO LITERATURE REVIEW.....	9
Employment Arrangements	11
Permanent Employment Arrangement.....	12
Alternative Employment Arrangements	13
Prior Research on Employment Arrangements.....	17
Employment Arrangements Characteristics	19
Characteristics from Contingent Work View	19
Characteristics from Externalization View	21
Characteristics from Other Literature	23
Précis of Employment Arrangements	24
Psychological Contract	25
Approaches to the Psychological Contract	27
Scarcity of Psychological Contract Research in the IT Context.....	35
Organizational Behaviors.....	41
Organizational Citizenship Behaviors	41
Innovative Work Behaviors	45

Antecedents to Organizational Behaviors.....	47
Summary.....	48
CHAPTER THREE RESEARCH DEVELOPMENT.....	49
Hypotheses.....	49
Research Model.....	54
CHAPTER FOUR RESEARCH METHODOLOGY.....	56
Sample.....	56
Measurement Instrument.....	63
Employment Arrangements and Characteristics.....	63
Psychological Contract.....	64
Organizational Citizenship Behavior.....	66
Innovative Work Behavior.....	67
Job Satisfaction.....	68
Control Variables.....	68
Pilot Study.....	70
Pilot Data Analysis.....	72
Main Study.....	78
CHAPTER FIVE RESULTS.....	79
Scale Analysis.....	79
Reliability.....	80
Validity.....	80
Data Reduction Through Factor Analysis.....	80
Psychological Contract.....	81
Fulfillment of the Psychological Contract.....	85
Organizational Citizenship Behavior.....	88
Innovative Work Behavior.....	90
Employment Arrangement Characteristics.....	91
Job Satisfaction.....	93
Descriptive Statistics.....	94
First Research Component – Tests of the Hypotheses.....	96
Hypothesis 1.....	96
Hypothesis 2.....	99
Hypothesis 3.....	100

Hypothesis 4.....	101
Alternative Hypotheses to H4.....	103
Hypothesis 4a - Helping.....	104
Hypothesis 4b - Loyalty.....	104
Hypothesis 4c - Obedience.....	105
Hypothesis 4d – Functional Participation.....	106
Hypothesis 4e – Advocacy Participation.....	107
Hypothesis 5.....	108
Second Research Component – Exploring the Employment Arrangement Characteristics.....	111
CHAPTER SIX DISCUSSION.....	114
Overview of Analysis and Significant Findings.....	114
Psychological Contract.....	116
Organizational Citizenship Behavior.....	120
Innovative Work Behavior.....	123
Employment Arrangement Characteristics.....	125
Implications.....	125
Theoretical Implications.....	126
Practical Implications.....	128
CHAPTER SEVEN CONCLUSIONS.....	131
Contributions.....	131
Limitations of the Study.....	132
Recommendations for Future Research.....	135
Concluding Comments.....	137
LIST OF REFERENCES.....	139
APPENDICES.....	150
Appendix 1. Pilot Study Questionnaire.....	151
Appendix 2. Letter – Invitation to Participate.....	159
Appendix 3. Postcard – Follow-up Invitation to Participate.....	160
Appendix 4. Final Version of the Measurement Instrument.....	161

Appendix 5. Descriptive Statistics of Main Study Variables	170
Appendix 6. Inter-Correlation Matrix of Main Study Variables	171
ABOUT THE AUTHOR	End Page

LIST OF TABLES

Table 1.	Psychological contract empirical studies	37
Table 2.	Response rates	57
Table 3.	Demographics of respondents versus non-respondents	58
Table 4.	Demographics of IT professional respondents	59
Table 5.	Respondent career/job categories	61
Table 6.	Employment arrangements	62
Table 7.	Instrument measures, source, and source reliabilities	69
Table 8.	Instrument measures developed for the study	70
Table 9.	Reliability of pilot study scales	71
Table 10.	Pilot three factor solution of EA characteristics	73
Table 11.	Pilot significant regression results of Hypothesis 2	75
Table 12.	Pilot significant regression results of Hypotheses 4a-e	76
Table 13.	Psychological contract rotated structure matrix	84
Table 14.	Fulfillment of psychological contract rotated structure matrix	87
Table 15.	OCB rotated structure matrix	89
Table 16.	EA characteristics rotated structure matrix	93
Table 17.	Reliability of main study constructs	94
Table 18.	Univariate tests for MANOVA of Hypothesis 1	98
Table 19.	Post hoc analyses for EAC groups of Hypothesis 1	98
Table 20.	Regression summary of Hypothesis 4a	104
Table 21.	Regression summary of Hypothesis 4b	104
Table 22.	Regression coefficients of Hypothesis 4b	105
Table 23.	Regression summary of Hypothesis 4c	105
Table 24.	Regression coefficients of Hypothesis 4c	106
Table 25.	Regression summary of Hypothesis 4d	106
Table 26.	Regression coefficients of Hypothesis 4d	107
Table 27.	Regression summary of Hypothesis 4e	107
Table 28.	Regression coefficients of Hypothesis 4e	108
Table 29.	Regression summary of Hypothesis 5	108
Table 30.	Regression coefficients of Hypothesis 5	109
Table 31.	Summary of hypotheses and results	110
Table 32.	Univariate tests for MANOVA – EA characteristics	112
Table 33.	Post hoc analyses for EAC groups and EA characteristics	112

LIST OF FIGURES

Figure 1.	Initial concept research model	4
Figure 2.	An extract of social information processing approach to job characteristics, attitudes, and behaviors	11
Figure 3.	A taxonomy of employment arrangements	14
Figure 4.	Conceptual model with hypotheses	55
Figure 5.	Scree plot of psychological contract measurement items	82
Figure 6.	Scree plot of fulfillment of psychological contract measurement items	86
Figure 7.	Scree plot of EA characteristics measurement items	92
Figure 8.	Profile of OOBL variable means by EAC groups	99
Figure 9.	Profile of EA characteristics variable means by EAC groups	113

THE INFORMATION TECHNOLOGY PROFESSIONAL'S PSYCHOLOGICAL CONTRACT VIEWED THROUGH THEIR EMPLOYMENT ARRANGEMENT AND THE RELATIONSHIP TO ORGANIZATIONAL BEHAVIORS

Sandra Kay Newton

ABSTRACT

Information technology (IT) professionals are continually placed in diverse employment arrangements as organizations continually look for ways to cut costs, enhance performance and maximize organizational goals. Organizations are using strategies beyond hiring permanent employees to achieve objectives in alternative sourcing. Even though the cost differential is positive when employing non-permanent individuals instead of permanent employees, little is known about the effects on the IT professional.

This field study was designed to test the effects of employment arrangements on the IT professional's psychological contract and the effects of the level of fulfillment of their psychological contract on their organizational citizenship and innovative work behaviors using psychological contracts and social information processing theories. IT professionals were sampled from four different employment arrangements.

The empirical findings show that there are differences in the IT professional's psychological contract as explained by their employment arrangement, as well as by their perceptions of the characteristics of their particular employment arrangement. Permanent full-time IT professionals consistently had higher perceptions of their employer's obligations to them, than did IT professionals from the other employment arrangement categories. The level of fulfillment of the IT professional's psychological contract explained differences in their organizational citizenship behaviors (OCB) as a collective, with significant differences in the advocacy participation and obedience citizenship behaviors. This study also found significant relationships with the level of fulfillment of the IT professional's psychological contract and their innovative work behavior, as well

as their organizational citizenship behaviors individually, specifically loyalty, advocacy participation, obedience, and functional participation. The primary predictors of the dimensions of OCB were the levels of fulfillment of the psychological contract as it relates to the scope, focus, and tangibility dimensions.

The exploratory analysis into the characteristics of the employment arrangement provides a clearer understanding as to what encompasses the actual employment arrangement for IT professionals of differing categories. Independent contractors indicated significantly more job control than permanent full-time and contract company workers. Permanent full-time and permanent part-time have greater job stability than do independent contractors and contract company workers. Permanent full-time have greater benefits provided than the other three categories of IT professionals.

CHAPTER ONE INTRODUCTION

Today, organizations are using a number of alternative employment arrangements to respond to the economic fluctuations of the labor market, gain cost advantages over in-house services (Levina & Ross, 2003), or gain improvements in the productivity and core competencies of their workers (Ang & Slaughter, 2001). To this end, organizations may alter their organizational structure to include a contingent of alternative employment arrangements, which changes the organizational dynamics, not only for managers, but also for the workers (Agarwal & Ferratt, 1999).

Alternative employment arrangements (AEA) are beyond the permanent employee arrangement and Sherer (1996) asserts that individuals in these arrangements are considered to be external to the organization. Focus on externalization of the work force is not new (Pfeffer & Baron, 1988); however, this phenomenon is especially relevant as the use of information technology (IT) professionals in alternative employment arrangements continues to be the trend. IT professionals now find themselves in a variety of alternative employment arrangements (e.g., consulting, contracting, outsourced, or temporary).

While the preponderance of research has informed practitioners and academics on the permanent employee, much less is known about individuals in alternative employment arrangements. The literature reveals some interest in the moderating effect of the employment arrangement, but then most studies obtain perceptions from only two groups, permanent employees and one non-permanent employee category. In fact, a challenge in generalizing findings of prior research is that some studies group individuals in different non-permanent employment arrangements into the same category to make their comparisons. When considering the collective studies, the results are often unexpected or conflicting; thus, generalizing across studies about any alternative employment arrangement category is difficult. Consequently, there are recommendations for future research to address how the various types of employment arrangements affect various attitudes and behaviors (Beard & Edwards, 1995; Van Dyne & Ang, 1998).

Motivation for Research

Justification for using AEA is plausible, especially when viewed through a macro-level lens, which considers the strategic and managerial goals of a business enterprise. For example, the gains obtained from information system (IS) outsourcing support the continued use of alternative means of employment. IS outsourcing has been reasoned to gain organizational efficiencies through realigning the IS budget, obtaining new IT talent, or eliminating IS functions that have become obsolete (Lacity & Hirschheim, 1993).

When viewed through the micro-level, which considers the individual, research has disclosed that differences exist between individuals from two general employment categories, permanent and alternative. Research has investigated dyadic relationships between employees in a permanent arrangement and workers from alternative employment arrangements in an assortment of professions and industries (e.g., aerospace engineers (Pearce, 1993), professional bank and hospital workers (Van Dyne & Ang, 1998), restaurant workers (Stamper & Van Dyne, 2001), and British local government workers (Coyle-Shapiro & Kessler, 2002)).

Investigation into the effects of the external labor market (e.g., individuals in alternative employment arrangements) on IT professionals has been limited. Ang and Slaughter (2001) found that contractors exhibited fewer citizenship behaviors, and were perceived as poorer performers, less trustworthy, and less loyal than permanent employees. These findings were significant given the homogeneous characteristics of the permanent and contractor software developers' employment arrangements (e.g., comparable IS technical skills and abilities, equal opportunities for professional development and company events, and, except for fringe benefits, no obvious differences in management).

Employment uncertainty is introduced in the IT field by competition (ITAA, 2004) and the diversity of employment arrangements. IT professionals must contend with ambiguous employment duration and future, as well as inconsistent employment opportunities. Organizations are expected to continue to use alternative employment arrangements to subsidize their permanent IT staff, as well as to assemble the IT skill sets that keep them competitive. To gain additional insight on how these industry

characteristics impact the IT profession, this research addresses the effect the employment arrangements have on the employees' attitudes and behaviors.

For the purposes of this study, the reasons organizations are partially fulfilling their human capital requirements by using external resources are irrelevant. Rather, we concentrate on its impact once employed. What is known is that the use of external resources brings its own risks to the organization (Lacity & Hirschheim, 1993), as well as to the employee (Beard & Edwards, 1995). Managers see the IT professional as human capital, a resource used to maximize organizational effectiveness. As managers continue to look for ways to cut costs, enhance performance, and maximize organizational goals, they will administer the human capital resource through a variety of employment arrangements. Management, however, can no longer consider the attitudes and behaviors of only permanent employees. They must now consider individuals in differing employment arrangements, and learn to adjust to the unique aspects of these arrangements. The literature provides evidence that the employee-employer relationships differ among those in various employment arrangements. This study addresses the primary research question: What is the impact of alternative employment arrangements on IT professionals' organizational behaviors?

Theoretical Support

In trying to understand the individual's perceptions of the employer-employee relationship with respect to obligations to their employer and their employer's reciprocal obligations, researchers have considered Rousseau's (1989) psychological contract framework. Accordingly, researchers have drawn on the psychological contract concept to help explain differences in employee attitudes and behaviors in the work place (Coyle-Shapiro, 2002; Janssen, 2000; Sels, Janssens, & Van Den Brande, 2004).

Hackman and Oldham's (1980) job characteristics model offers a framework to analyze an individual's work environment through their core job characteristics and the effects on their psychological states. Another framework that considers the attributes of the job in an effort to understand the individual's sense-making within the work environment is Salancik and Pfeffer's (1978) social information processing theory. The social information processing framework theorizes that the job or task characteristics will

affect the individuals' behaviors through their attitudes. As such and with respect to this study, the individual's attitudes and behaviors are expected to be a function of their social environment within the context of their employment arrangement. Rousseau's (1989) and Salancik and Pfeffer's (1978) frameworks have been used together to understand perceived employment obligations while considering the social phenomena of the work environment (Morrison, 1994; Robinson, Kraatz, & Rousseau, 1994).

Following Rousseau's (1989) psychological contract and Salancik and Pfeffer's (1978) social information processing frameworks, Figure 1 is offered as an initial conceptualization of the research model by which a more detailed research model depicting the constructs of interest is developed.

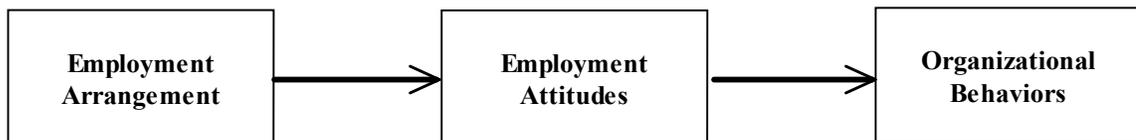


Figure 1. Initial concept research model

Organizational Behaviors

While organizational effectiveness results from the productivity and performance of individuals within the organization, researchers contend it is the individual's extra-role behaviors that are critical to organizational effectiveness (Kanter, 1988; Katz & Kahn, 1978; Organ, 1988). Two such extra-role behaviors are organizational citizenship and innovative work. Both of these behaviors are defined as extra-role and more discretionary than mandated, yet help the organization or others within the organization in some way (Kanter, 1988; C. A. Smith, Organ, & Near, 1983). Organizational changes can affect the employees' work environment (Amabile & Conti, 1999), and perceived work environment can affect the creativity of projects (Amabile, Conti, Coon, Lazenby, & Herron, 1996). Consequently, empirical interests continue into the motives and cognitions around creative and innovative work behavior (Amabile & Conti, 1999; Amabile et al., 1996; Janssen, 2000; West & Farr, 1990b), as well as organizational

citizenship behaviors (OCB) (Ang & Slaughter, 2001; Coyle-Shapiro, 2002; Van Dyne & Ang, 1998).

Practitioners struggle with implications of how the use of alternative employment arrangements might affect creativity and innovation within information systems and product development. The Gartner Group indicated that IT outsourcing and management areas continue to be scrutinized to ensure organizations receive the maximum return from organizational IT investments. They emphasized that even when organizations focus on cost, they still need value and innovation (Pring, 2003). For example, a Hewlett Packard (HP) executive stated in *VarBusiness* that outsourcing their services to other organizations enabled them to improve their business processes while embracing technology innovation. The HP executive also stipulated that when HP does not have the capabilities to support some aspect of the contracted services, they partner with a company that can provide the needed service (Doyle, 2003).

Perceptions of the work environment from individuals in varying employment arrangements affect their attitudes and behaviors; however, the findings between the dyadic relationships are mixed. Contractor engineers and technicians engage in more extra-role behaviors than permanent employees (Pearce, 1993), and contingent or non-permanent bank and hospital professionals exhibit more organizational citizenship behaviors than permanent employees (Van Dyne & Ang, 1998). However, Coyle-Shapiro and Kessler (2002) found contingent workers exhibit less organizational citizenship behaviors than permanent employees exhibit.

Psychological Contracts

Psychological contracts of individuals are theorized to unite them with their organizations and regulate their behaviors, thus fulfilling management goals (Robinson et al., 1994). While Robinson et al. (1994) state that “perceived obligations compose the fabric of the psychological contract” (pg. 138), these obligations will vary depending upon the individual’s employment arrangement (McLean Parks, Kidder, & Gallagher, 1998). Accordingly, the psychological contract has been equated to an attitude that affects organizational behaviors (Van Dyne & Ang, 1998). When the psychological contract is breached or violated, the result is lower job satisfaction (Robinson &

Rousseau, 1994), organizational commitment (Coyle-Shapiro & Kessler, 2002), and organizational citizenship behaviors (Coyle-Shapiro, 2002; Robinson, 1996; Robinson & Morrison, 1995). Most psychological contract research focuses on the permanent employee, but McLean Parks et al. (1998) extended the research by providing a concept that considers those individuals in alternative employment arrangements.

Research Questions

Obvious positive returns from using alternative employment arrangements are evident (e.g., savings in manpower budgets, reducing operational costs, improving IT core competencies and innovative technologies, and improving flexibility in staffing and skill-set requirements). An additional incentive for using external workers is that they can fulfill certain jobs that permanent employees may be incapable of fulfilling (Andrews & Niederman, 1998; Pfeffer & Baron, 1988). Understanding how the IT professional's employment arrangement impacts their attitudes and behaviors is paramount for organizations using alternative employment arrangements.

To date, theoretical and empirical research has not directly addressed the consequences of the diverse alternative employment arrangements on the IT professional. Such research is relevant to both scholars and practitioners due to the potential implications of using alternative employment arrangements to improve organizational effectiveness. This research focuses on the individual's work environment, specifically the employment arrangement, and the effects on their perceptions regarding employer obligations and fulfillment of those obligations and organizational behaviors (organizational citizenship and innovative work). This study has two major research components with the first being empirical and theory testing and the second being exploratory and theory building.

1. The first research component evaluates the effects the IT professional's particular employment arrangement has on their psychological contract; and the effects the level of fulfillment of the psychological contract has on their organizational citizenship behaviors and innovative work behavior. The first research component addresses the following research questions:

- How does the employment arrangement impact the IT professional's psychological contract?
 - How does the level of fulfillment of the IT professional's psychological contract affect their organizational behaviors organizational citizenship and innovative work? Does the IT professional's employment arrangement affect this relationship?
2. The second research component identifies the characteristics surrounding the IT professional's employment arrangement. This aspect of the research study explores the question: What are the similarities and differences in the defining characteristics of the IT professional's employment arrangement?

Statement of Contributions

This research integrates the existing social information processing and psychological contract theories to: 1) develop a more comprehensive model, including employment arrangements, psychological contracts, and organizational behaviors; and 2) to empirically evaluate hypothesized relationships. This research clarifies what IT professionals in varied employment arrangements perceive as their employer's obligations and how the arrangement affects their behaviors. Armed with this information, organizational managers can then make decisions concerning the optimal use of particular employment arrangements depending on their business strategy and environment.

By studying organizational behaviors in relation to multiple employment arrangements and the dimensions of the psychological contract, this research extends the boundaries of prior research. Previous studies have considered the effects of alternative employment arrangements while investigating OCB, but not while investigating innovative work behaviors. Despite the prevalence of using alternative employment arrangements in the IT labor-market, the effect on the IT professional has not been fully investigated. This research expands on existing research by reviewing the diverse employment arrangements available to the IT professional today, identifying the defining characteristics within an IT professional's employment arrangement, and evaluating the effects of the employment arrangement on the IT professional's attitudes and behaviors.

This research addresses the void in IT human resource research as it investigates the diversity of the employment arrangement characteristics of IT professionals. Prior research has shown that information systems (IS) personnel are different than non-IS personnel, in that they have lower social needs (Cougar, Zawacki, & Oppermann, 1979). Thus, this research extends the organizational behavior research as it investigates the psychological contracts and organizational behaviors of IT professionals. This research offers a micro-level view to understanding the IT professional in the context of their employment arrangement.

To accomplish this aim, the remainder of this research study is presented as follows: Chapter Two discusses the relevant theories and literature surrounding the research model. Chapter Three presents the development of the hypotheses and research model. Chapter Four presents the research methodology, instrument development, main study sample, and pilot study. Chapter Five offers the scale reliability and validity analysis, main study data analysis and results. Chapter Six discusses the findings and both theoretical and practical implications. Chapter Seven communicates the conclusions, contributions, limitations, and recommendations for future research opportunities.

CHAPTER TWO LITERATURE REVIEW

Organizations are continually looking for innovative ways, such as alternative employment arrangements, to meet human resource goals. The use of alternative employment arrangements brings expected differences in the IT professionals' perceptions of their work environment. IT professionals will make their own realities about their work environment and thus "believing is seeing" (Weick, 2001, pg. 195). This chapter underscores prior relevant literature and underlying theories on employment arrangements and psychological contracts with regard to organizational behaviors, such as citizenship behavior and innovative work behavior. The relevant literature, empirical studies, and theories conveyed here provide the foundation for concepts brought forth in subsequent sections and enable the development of stated research questions and testable hypotheses.

Concepts regarding psychological contracts and organizational citizenship behaviors have origins in traditional organizational research on exchange relationships, such as social exchange theory (Blau, 1964) and norm of reciprocity (Gouldner, 1960). Blau (1964) relates the concept of social exchange as "the emergent properties in interpersonal relations and social interaction" (pg. 4). Here one has an expectation to receive some semblance of gratitude when a service has been completed, resulting in a shared exchange between parties. A key aspect of social exchange is the undefined responsibility and expectation to reciprocate, which requires some level of trust to be established with the participants. Gouldner (1960) suggests the reciprocity norm refers to that "which imposes obligations only contingently, that is, in response to the benefits conferred by others" (pg. 171). These obligations of reciprocation are implied by the perceived value of the benefit received and may vary with "the *status* (Gouldner's italics) of the participants within a society" (pg. 171). This suggests that the employment arrangement may affect the employee's perceptions of obligations versus benefits, oft referred to as the psychological contract. Ang and Slaughter (2000) state that understanding the IT professional in context requires multiple theoretical points of view;

consequently, other theories should be considered to advance understanding of the IT professional in the various employment arrangements.

The job design concept has continually proven to be a valuable contributor to understanding employees' intrinsic motivation and creative performance at work (Hackman & Oldham, 1980; Oldham & Cummings, 1996; West & Farr, 1990b). Hackman and Oldham's (1980) initial work with their job characteristics model has also provided insights about differences in IS personnel. IS personnel have higher autonomy needs (Cheney, 1984), as well as higher growth needs and lower social needs than non-IS personnel (Cougar et al., 1979).

Following Hackman and Oldham's (1980) job characteristics model, Salancik and Pfeffer's (1978) social information processing perspective implies jobs are, in part, socially constructed, and an individual's immediate social environment has an impact on beliefs as they adapt and adjust their attitudes and behaviors according to the situation. An individual's psychological contract is formed through social cues from others, and evolves through interpretations. An individual's employment arrangement will elicit social cues from others, whether employer, fellow worker, or individuals outside the work environment. Salancik and Pfeffer (1978) propose that individuals may develop attitudes as a function of the information available to them in their immediate social surroundings. Thus, the immediacy of their particular employment relationship may influence the relative saliency of information that provides cues to form consequent attitudes and opinions. Therefore, when an individual receives social information, it may engender powerful consequences about perceptions of the job, the organization, and, more importantly, the individual's attitudes and behaviors. Morrison (1994) found support for this perspective when investigating the characteristics of in-role and extra-role behaviors of medical center clerical employees. She found that employees in structurally comparable positions within their organization defined their job roles similarly. As employees try to make sense of the social context in which they work, this sense-making ultimately affects their perceptions, attitudes, and subsequent actions.

Griffin (1982) states that the social information processing framework "predicts that individual perceptions of their jobs are a function of social information" (pg. 176).

Therefore, an individual's employment arrangement can produce certain perception processes that affect their attitudes, specifically their psychological contract; and their attitudes will again bring about certain choice processes that affect their organizational behaviors, specifically their organizational citizenship and innovative work behaviors.

Figure 2 is an extract of Salancik and Pfeffer's (1978, pg. 227) model depicting their social information processing approach to job or task environmental characteristics, attitudes-needs, and behaviors. Their framework was adapted, with psychological contracts theory, to develop this study's research model. Salancik and Pfeffer's (1978) model supports the notion that the job or task environmental characteristics, which are defined in this study as the employment arrangement, will provide certain social cues. These social cues will affect the IT professional's attitudes-needs, which are defined in this study as the psychological contract and the level of fulfillment of the psychological contract. This will in turn affect their subsequent behaviors, which are defined in this study as organizational citizenship and innovative work.

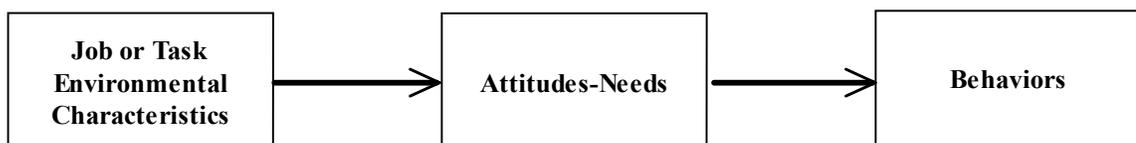


Figure 2. An extract of social information processing approach to job characteristics, attitudes, and behaviors

Employment Arrangements

When looking for ways to control human resource costs and react to labor market conditions, organizations often decide to use a variety of employment arrangements (Polivka & Nardone, 1989; Sherer, 1996). Organizations generally maintain a "core" of permanent employees and increase or decrease their external worker numbers to adjust to economic fluctuations. The traditional permanent employment arrangement is associated with the internal labor market, which is characterized with long-term employment, internal promotion ladders, and higher transaction costs (Pfeffer & Baron, 1988; Williamson, 1981). Pfeffer and Baron (1988) contend that organizations use workers that are external to the organization as a buffer to their permanent work force. There are general sourcing labels used to identify employment circumstances that are outside the more traditional permanent employment arrangement (e.g., externalization (Pfeffer &

Baron, 1988), alternative employment arrangements (AEA) (Bureau of Labor Statistics, 2001; Polivka & Nardone, 1989), and alternative employment structures (Ang & Slaughter, 1995)).

In addition to these general sourcing labels, a examination of the literature reveals a number of labels depicting workers who are not part of the permanent work force (e.g., external worker (Davis-Blake & Uzzi, 1993; Pfeffer & Baron, 1988), contingent worker (Beard & Edwards, 1995; Polivka & Nardone, 1989; Van Dyne & Ang, 1998), temporary worker, contractor, independent contractor, consultant, and outsourcing (Andrews & Niederman, 1998; Ang & Slaughter, 1995)). The diversity and variability of labels used in industry and research often complicate the understanding of similarities and differences among employment arrangements, and consequently, the ability to generalize research findings.

To gain a general understanding of the possible employment arrangement categories and definitions, it is necessary to illustrate the diversity found in industry and the literature. Leading this section, permanent and AEA categories are examined. Next, previous research is reviewed to gain a clearer picture of how employment categories have been used. After that, characteristics surrounding the employment arrangement categories are presented. This section concludes with a synopsis of this study's focus within the employment arrangement domain.

Permanent Employment Arrangement

The *permanent* employment arrangement is often used to define full- or part-time employees in an organization. Permanent employment is the customary or traditional form of employment, and the literature refers to these employees as core employees (Pfeffer & Baron, 1988), regular employees (Van Dyne & Ang, 1998), internal workers (George, 2003), or the internal labor market (Sherer, 1996). Permanent employees are provided a salary and benefits and have a reasonable understanding and expectation of unlimited employment duration (Andrews & Niederman, 1998). Kalleberg (2000) is more stringent in her definition of the "standard work arrangement" and contends that the characteristics are that the work is full-time, "would continue indefinitely," and is

“performed at the employer’s place of business under the employer’s direction” (pg. 341).

Alternative Employment Arrangements

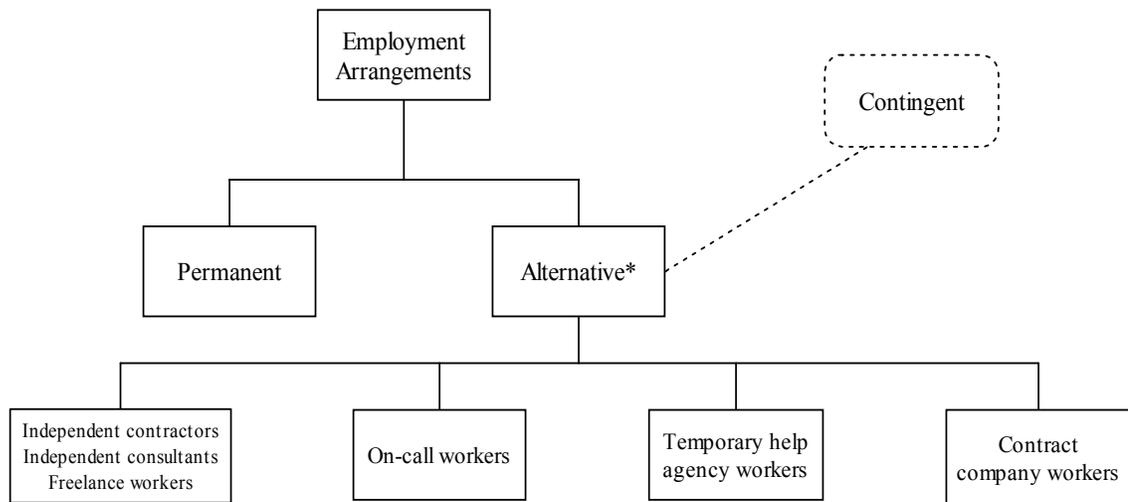
The predominance of AEA research originates in the economic, management, and organizational behavior literature, yet IT researchers also recognize the importance of AEA for IT workers (Ang & Slaughter, 1995, 2002; Slaughter & Ang, 1995). To more fully detail the changing landscape of the labor market, the Bureau of Labor Statistics (BLS) (2001) identifies and defines four major categories of AEA to classify employed individuals who do not fall into the permanent employment arrangement: independent contractors, on-call workers, temporary help agency workers, and contract company workers.

1. *Independent contractors* encompass “independent contractors, independent consultants, or freelance workers, whether they were self-employed or wage and salary workers” (pg. 2).
2. *On-call workers* are “called to work only when needed, although they can be scheduled to work for several days or weeks in a row” (pg. 2).
3. *Temporary help agency workers* are “paid by a temporary help agency, whether or not their job actually was temporary” (pg. 2)
4. *Contract company workers* are “employed by a company that provides them or their services to others under contract and who are usually assigned to only one customer and usually work at the customer’s worksite” (pg. 2).

In addition to the four AEA categories, the Bureau of Labor Statistics (2001) includes a work characteristic that further defines and clarifies workers in alternative employment arrangements – contingent work. *Contingent workers* are defined as those “who do not expect their jobs to last or who report that their jobs are temporary” (pg. 1) and “who do not have an implicit or explicit contract for on-going employment” (pg. 2). Within the BLS’ definition of contingent work, an individual could be working in an AEA and be a contingent worker, or not. For instance, if an individual holds a position as a contractor, but does not expect the job to last over a year, then according to BLS, this contractor is also a contingent worker. However, if the contractor expects the job to last

longer than a year, the AEA is not considered to be contingent. Polivka and Nardone (1989) elaborate on the BLS contingent work definition by indicating that a contingent worker has little job security and “does not have an explicit or implicit contract for long-term employment or one in which the minimum hours worked can vary in a nonsystematic manner” (pg. 11).

Figure 3 illustrates a taxonomy of the employment arrangement categories described in this section, which includes the BLS alternative employment arrangements.



*Categories defined by Bureau of Labor Statistics (2001).

Figure 3. A taxonomy of employment arrangements

The BLS alternative employment arrangement categories comprise workers outside the internal labor market and encompass a number of labels used by industry and research. The literature provides an expanded understanding into the use and fuller definitions of four specific labels within the BLS categories (e.g., consultant, contractor, independent contractor, and temporary worker).

The *consultant* can be independently employed or an employee of a consulting organization or vendor representative specializing in a particular set of IT projects, and typically engages in providing support for a major IT project (Andrews & Niederman, 1998). An example of a consultant might be an IT professional working for a consulting organization (e.g., Accenture) or vendor representative (e.g., PeopleSoft or Oracle). According to BLS definitions, consultants could be found in two distinct categories

depending upon the employment attachment, either as independent contractors or as contract company workers.

Contractors can originate from a variety of employment situations: they can be self-employed or employed by some other type of organization. Organizations often use contractors as a way to temporarily subsidize skill sets needed for a short term or for a special project. *Independent contractors* are self-employed and contract directly with organization(s) requiring their services on a temporary basis (Ang and Slaughter 2001). Independent contractors set their own hours, are paid hourly or by the job, receive no benefits from the organization receiving the service, and may perform their work off-site (Pearce, 1993; Van Dyne & Ang, 1998). Contractors, other than independent contractors, can contract through an employment agency with a client organization(s) requiring their services on a temporary basis (Ang and Slaughter 2001), or can be employed by another type of organization (e.g., professional service company). Contractors, other than independent contractors, can also provide services and expertise on a temporary basis and/or for a specific project on behalf of the contracting company to a client organization (Andrews & Niederman, 1998). Bureau of Labor Statistics designates contractors as contract company workers, and classifies them in a distinct category separate from independent contractors.

Temporary workers is a label often used to refer to individuals who are in an AEA, whether consultants, contractors, direct-hire temporary workers, or temporary help agency workers (McLean Parks et al., 1998). The temporary worker does not have a permanent employment arrangement, but is for the time being employed by an organization that provides the employee with a salary, perhaps benefits, and some expectation as to limits of the employment duration. The temporary help agency worker category within the BLS definitions does not include “temporary workers who are hired and managed by the employing firm rather than an outside agency” (Davis-Blake & Uzzi, 1993, pg. 198), but only includes those individuals who are working for a temporary help agency. Within the BLS categories, the temporary worker who is hired and managed by the employing firm falls within the independent contractor category and is associated with freelance and wage and salary workers.

Although the definitions within the four BLS categories provide for over 12.5 million workers in AEA (Bureau of Labor Statistics, 2001), industry and research use other labels that do not fall neatly within the BLS AEA (e.g., contingent worker, external worker, and outsourcing).

The labels, *contingent worker* and *external worker*, have both been used in research to collectively identify individuals who are not permanent to the organization and may actually fit in different AEA categories. Individuals who are temporary or on standby may not receive any benefits, don't expect promotions, and are not guaranteed a stable work schedule have been referred to as *contingent workers* (e.g., McLean Parks et al., 1998; Van Dyne & Ang, 1998). Workers contracted to do certain work in an organization that does not have ultimate control over them have been referred to as *external workers* (Pfeffer & Baron, 1988). In Davis-Blake and Uzzi's (1993) study, independent contractors and temporary workers were collectively referred to as external workers. George's (2003) external workers also represented a mixture of temporary workers and contract workers. Sherer (1996) believes that external workers have some kind of relationship with the work organization beyond the employment relationship.

Outsourcing is seen as a staffing alternative in IT literature (Andrews & Niederman, 1998; Lacity & Willcocks, 1998; Slaughter & Ang, 1996). It is defined as turning over the management and operation of an organization's IT assets and activities to a third party (Kern & Willcocks, 2001). Outsourcing can encompass the use of any combination of AEA, such as consultants, contractors, and temporary workers. Organizations adjust to environmental changes, respond to the fluctuation in availability of quality IT professionals, and increase flexibility in staffing of IT positions by outsourcing (Slaughter & Ang, 1996). An outsource organization typically takes on the function(s) of a specific mission for a client organization (Andrews & Niederman, 1998). For instance, Procter & Gamble outsourced their managed-IT services to Hewlett Packard in a \$3 billion, 10-year deal (Doyle, 2003). This particular arrangement found IT employees of Procter & Gamble becoming employees of Hewlett Packard, and in turn, working under an outsourcing contract for Procter & Gamble. Outsourcing was originally intended for non-core functions, yet it continues to proliferate to core and strategic IT

functions. For instance, Research and Development is now being outsourced offshore (Thibodeau & Lemon, 2004).

The literature shows that labels are assigned to individuals (e.g., permanent, temporary, or contractor) and labels are also assigned to categorize or group workers (e.g., consultants, external workers, or contingent workers). In addition, individuals identify themselves through a particular label, such as consultant or contractor. From the alternative employment structures described in Ang and Slaughter (1995), Andrews and Niederman (1998) define what they believe to be the most significant AEA in IT research: outsourcing, contract or temporary workers, consultants, and any combination of permanent, contract, temporary staff, outsourcing of some functionality, and consultants. The difficulty with labels and categories starts with the user as the user is typically the only one sure of the intended meaning of the word. Each employment arrangement has certain characteristics that define it, and some employment arrangements share some of the same characteristics. It is therefore important to move beyond categories and labels to provide an alternative course to the basic understanding of employment arrangements by defining their characteristics as found in the literature.

Prior Research on Employment Arrangements

Researchers have used the employment arrangement category as the antecedent, as well as the moderator, to compare differences in various employee attitudes and behavioral outcomes (e.g., in-role and extra-role behaviors (Ang & Slaughter, 2001), OCB (Coyle-Shapiro & Kessler, 2002; Stamper & Van Dyne, 2001; Van Dyne & Ang, 1998), and organizational commitment (Pearce, 1993)). While studies typically sample the permanent, more traditional employee (e.g., George, 2003; Robinson et al., 1994), there are studies that sample the permanent employment arrangement and one alternative category. Studies have explored permanent employees and contractors (Ang & Slaughter, 2001; Pearce, 1993), permanent and fixed-term contract employees (Feather & Rauter, 2004), permanent and temporary employees (V. Smith, 1994), and permanent employees and contingent workers (e.g., Beard & Edwards, 1995; Matusik & Hill, 1998; McLean Parks et al., 1998; Van Dyne & Ang, 1998).

Researchers considering the individual's employment type found significant effects on their attitudes and resultant behaviors, but the results have been mixed. Pearce (1993) demonstrated that contractors were assigned easier tasks than permanent employees, even when the contractors and permanent employees had similar jobs. Contractors reported that they engaged in more OCB than the permanent employees, yet there were no differences between the contractors and permanent employees in their commitment to the organization. V. Smith (1994) wrote that permanent employees did not believe temporary workers were as supportive, as committed to doing the job right the first time, and as involved in the work as their fellow permanent coworkers. Feather and Rauter (2004) discovered contract teachers reported more job insecurity and more OCB than permanent teachers, and that their job status was not linked to job satisfaction.

Research has also considered the effects of using AEA on full-time employees. In George (2003), the permanent employees' trust in and commitment to the organization were negatively affected the more the organization used external workers and the longer the external workers were on the job. Kraimer, Wayne, Liden, and Sparrowe (2005) found that the full-time employees' perceived job security was lower when they felt that the temporary workers with whom they worked posed a threat to their job. Focusing on the demographic characteristics of individuals in different AEA, Cohany (1996) found that individuals in alternative arrangements have significant differences. For instance, independent contractors are typically white males of middle age or older, have more education than average, and are married; whereas, temporary help agency workers are typically females of 20-44 years of age, have less education on average, and are members of a minority group.

Although most of the IT human resources research has assumed permanent employment of IT professionals, a few researchers have investigated AEA relationships. Andrews and Niederman (1998) provide a conceptual framework of possible AEA suggesting further investigation into the implications of employment arrangement characteristics. Ang and Slaughter (2001) focus on two types of software developers in one organization, permanent employees and contractors, who were obtained through employment agencies. Findings indicate that contractors showed lower in-role and extra-

role behaviors than permanent employees, but contractors' perceptions of organizational support were higher than permanent employees' perceptions. Ferratt et al. (2001) posit that the IT professional's level of satisfaction is related to the level of fit between their preferred work arrangement and their current work arrangement.

The mixed findings involving AEA results from combining multiple AEA into one label; therefore, understanding the effects of specific employment arrangements is blurred. McLean Parks et al. (1998) recognized that the categories of contingent workers are too numerous and difficult to separate out into clear definitions, so they mapped the domain of contingent employment arrangements onto dimensions of the psychological contract. Identifying essential characteristics surrounding the employment arrangement categories further delineates similarities and differences between varying employment arrangements.

Employment Arrangements Characteristics

To begin an understanding into the domain of employment arrangements, Polivka and Nardone (1989) and Pfeffer and Baron (1988) define characteristics that clarify the extent that the worker may be contingent and the extent that the worker is attached to the organization. These characteristics were considered in building an initial framework of employment arrangement characteristics. Other literature offered additional characteristics that better recognize the diversity involved between permanent and alternative employment arrangements, as well as among alternative employment arrangements.

Characteristics from Contingent Work View

The label, contingent worker, has been used to refer to a collection of workers who are part-time or temporary, are in a more flexible arrangement, and do not include full-time wage and salary workers (Polivka & Nardone, 1989). Consequently, Polivka and Nardone (1989) identify three characteristics they deem critical and necessary in evaluating the extent that work is contingent: "job security, variability in hours of work, and access to benefits" (pg. 10).

Job security. Job security is a feeling of safety or protection from unemployment, and often comes with an implicit or explicit contract for ongoing employment. Job security relates to some level of uncertainty as to the continuation of employment or understanding that the job is temporary. The absence of job security has been used to define contingent work by the Bureau of Labor Statistics (2001), and has been linked to lower job satisfaction (Oldham, Kulik, Ambrose, Stepina, & Brand, 1986), trust, and organizational commitment (Ashford, Lee, & Bobko, 1989). Pearce (1998) believes job security should be defined as an independently determined probability that an individual will have their same job in the foreseeable future. Yet, the perception of job security can be conceived through a subjective experience of security (or insecurity) resulting from happenings or characteristics in the individual's work environment (Beard & Edwards, 1995; Roskies & Louis-Guerin, 1990).

Variability in hours of work. Variability in the number and scheduling of work hours offers distinctions between employment arrangements. *Unpredictability in work hours*, an extension to variability in hours of work, refers to the lack of routine scheduling, no guarantee as to the number of hours worked, and the stability of those hours from week to week (Polivka & Nardone, 1989). Cohany (1996) maintains that traditional work schedules are no longer the norm when looking at employment arrangements, and for AEA, "work schedules are becoming less standardized" (pg. 31). *Flexibility in work schedule* is a bi-product of variability and unpredictability in work hours. Research has shown that individuals employed for shorter length projects or assignments often prefer the flexibility of the nonstandard work schedule (Bendapudi, Mangum, Tansky, & Fisher, 2003; Cohany, 1996).

Access to benefits. Access to benefits is an important characteristic within any employment relationship (e.g., McLean Parks et al., 1998; Polivka & Nardone, 1989; Van Dyne & Ang, 1998). There is a general understanding that permanent employment offers benefits (e.g., health insurance, possible promotions, professional development, vacation and sick days) that non-permanent (or contingent) employment does not. And compensation packages around salary will vary depending upon the employment arrangement. Even though Polivka and Nardone (1989) believe that the availability of

benefits should not be used to define contingent work, they believe it to be a key characteristic in any employment relationship. For instance, self-employed workers, often defined within the realm of contingent work, are responsible for their own “benefits.”

Characteristics from Externalization View

Investigating the increase in externalization of the workforce, Pfeffer and Baron (1988) find that the extent to which the worker is attached to the organization affects three characteristics of the employment arrangement: physical proximity between the worker and the organization, the duration of employment, and the extent of internal control over personnel-related activities. Ang & Slaughter (2002) adapted Pfeffer and Baron’s (1988) dimensions and developed a taxonomy of IS sourcing strategies to highlight the potential gains behind alternative employment strategies (e.g., ability to respond to changing technologies and skill shortages in information systems personnel). Ang and Slaughter (2002) refer to externalization as the extent that the worker is detached from the organization. They label the three dimensions of externalization as “temporal detachment,” “administrative detachment,” and “locational detachment.” These three dimensions are appropriate to further define characteristics of employment arrangements.

Temporal detachment. Bureau of Labor Statistics (2001) states that the expectation as to whether the job will last will not be a personal judgment, but an objective understanding of the employment relationship. This understanding leads to an indication of temporal detachment, referring to the length or duration of employment (Pfeffer & Baron, 1988). The individual may have a fixed-term employment contract that specifies a completion date or ends upon completion of a project, which is typically considered temporary employment. An implicit employment contract that does not specify a length of time is often considered permanent employment. Limiting durations of employment is typically an economic decision by organizations and used to maintain a fraction of part-time employees.

Administrative detachment. Administrative detachment refers to the degree of internal control of personnel-related activities, such as the hiring, firing, performance evaluations, training, and development (Ang & Slaughter, 1995; Pfeffer & Baron, 1988).

Within the realm of administrative detachment is the supervision of the work of the employee. There is the issue of the legal employer as well as the client organization who supervises the work of the individual (Kalleberg, 2000). For instance, individuals employed by a temporary help agency will not be supervised by the agency, but by the company for which they are working. Individuals employed by a contract company, such as Accenture or PeopleSoft, are supervised by the contract company; even when working for a client company. Related to control over and supervision of the employee is the ownership of planning and managing the job tasks. Here, independent contractors may independently plan and execute the tasks required to complete the contracted job (Belous, 1989).

Locational detachment. Locational detachment refers to the extent that the worker is geographically displaced from the organization (Ang & Slaughter, 2002), and provides an added dimension to the control and supervision characteristics due to the extensive use of information technology today. The physical proximity between the worker and the organization could vary with any employment arrangement. Traditional permanent employees typically perform their jobs on the company grounds; however even this relationship is changing. Ang and Slaughter (2002) indicate telecommuters, who are permanent employees, may work at a location, other than company grounds, such as their home. Workers who telecommute may have more flexible work hours, reduced commuting costs, and a more balanced work/family life. However, they may experience feelings of isolation from the work environment, peers, and supervisors, and may experience job stress. The physical control and personal supervision is not necessarily co-located, in that an individual could perform their job virtually and be physically located anywhere in the world. A distributed work arrangement, which could be characteristic of any individual's employment arrangement, encompasses work setting variables such as telecommuting, no permanent work area on company premises, work site located more closely to the employee's home, and work performed at home at least part of the time (Belanger & Collins, 1998).

Characteristics from Other Literature

While Polivka and Nardone's three key characteristics of contingent work and Pfeffer and Baron's three dimensions of externalization provide an excellent starting point for identifying and isolating characteristics surrounding employment arrangements, the literature offers other characteristics (e.g., tenure, voluntary work status, preferred work status, and job positions) that also help in understanding the domain of employment arrangements.

Tenure. Tenure, the length of the current employment relationship between the worker and the employing or client firm, is proposed to be an indicator of job stability (DiNatale, 2001). This characteristic is distinct from length or duration of employment, in that duration of employment refers to the extent of the contract in terms of end date; whereas tenure refers to the time already spent employed or working with a particular organization. The longer an individual spends in a particular employment arrangement or job assignment, the more stable one believes the relationship (Rousseau, 1989). A job may be temporary, yet the individual's employment tenure with the firm may be longer than others in a permanent job position, and this characteristic may influence perceptions of the relationship.

Voluntary work status. Voluntary work status refers to the extent that the individual has entered into the particular work arrangement voluntarily. Within each employment relationship, it is typically assumed that the arrangement is entered into voluntarily, yet some researchers are concerned that there are contingent workers who would prefer the more traditional permanent employment (Cohany, 1996; Polivka & Nardone, 1989). While Van Dyne and Ang (1998) inferred the contingent work status to be voluntary in their study comparing contingent and regular employees in the bank and hospital industry, other researchers focusing on alternative employment arrangements surveyed the respondents as to their *preferred work status*. Stamper and Van Dyne (2001) found that workers who were part-time voluntarily engaged in more helping citizenship behaviors than those workers who were part-time involuntarily, while the workers who were full-time voluntarily engaged in higher levels of the "voice" dimension of OCB. In an earlier study, Morrow, McElroy, and Elliott (1994) found little support for work status

preferences on work-related attitudes of full- and part-time nurses, yet found support when shift and schedule preferences were considered. They contend the differences in the effects may be due to whether the work decisions concerning status, shift, or schedule were under the control of the individual worker or the organization.

Job positions. Slaughter and Ang (1996) indicate that certain IT job positions are more likely to be found in AEA, like outsourcing. Jobs related to systems development, such as “programmer, systems analyst, systems engineer, and consultant” are more likely to be outsourced than jobs related to systems support, such as “database administrator, network administration, and systems programmer” (pg. 49).

An employment arrangement category is defined by specific characteristics, yet multiple employment arrangement categories will be defined by some of the same characteristics with differing variability. Clearly defining categories is difficult as boundaries of the characteristics can blur into more than one category. Consequently, it is the characteristics of the individual’s employment arrangement that may become important key discriminators of the employment arrangement.

Précis of Employment Arrangements

Bureau of Labor Statistics (2001) provides discrete, exhaustive categorical classifications for individuals in AEA; however, BLS cautions that the numbers of non-permanent categories of workers are increasing. As the number of categories increase, the number and variability of characteristics surrounding the categories will also increase. While research typically focuses on no more than two major categories – permanent and one AEA – the increase of categories brings an even narrower focus to research results with groups of workers potentially being left out. This consequence supports the appeal to not only expand the research of AEA beyond the traditional categories, but also identify the numerous characteristics surrounding the employment arrangements. This research provides a clearer picture into the investigation of IT professionals’ attitudes and behaviors by identifying the specific characteristics of the individuals’ employment arrangements, instead of solely labeling IT professionals to a particular employment arrangement category. This study follows McLean Parks et al’s (1998) perspective recognizing the inconsistency of the employment arrangement categories and definitions,

and goes beyond the categories to identify the characteristics of the employment arrangements.

Researchers have also recognized the need to improve the definitions of various AEA and understanding of individuals in AEA. Beard and Edwards (1995) realize the varied use of the label, contingent worker, and recommend studies start with a reliable definition and then sample the population of interest appropriately. Beard and Edwards (1995) and Van Dyne and Ang (1998) recommend that future research address how the various types of contingent work affect various attitudes and behaviors. Slaughter and Ang (1995) find U.S. companies increasing their use of external IT workers, and recommend future research into how to manage and motivate them. This study responds to their recommendations in two ways. First, this study clarifies the employment arrangement labels used within the IT industry, compares the labels with BLS classifications, and identifies the characteristics that define the employment arrangements as perceived by the IT professional. Second, this study empirically investigates the relationship between the employment arrangement and the IT professional's attitudes and behaviors.

Psychological Contract

The importance of an employee's psychological contract within the organization is highlighted by the continued attention given it by way of theoretical and empirical research, yet the definition of the psychological contract has varied as the concept has evolved and matured (Argyris, 1960; Herriot & Pemberton, 1997; Rousseau, 1995; Schein, 1980). In Argyris (1960), psychological work contracts were conceptualized as unwritten expectations that transpire between employees and managers. Schien (1980) notes that the contract changes and expands as time passes and the needs of the organization and employee change. The idea of the psychological contract implies that there are unwritten expectations between every employee and manager or others within an organization. Schein (1980, pg. 24) states that "the psychological contract is a powerful determiner of behavior in organizations."

Today's research often follows the definition in Rousseau (1989) in that the psychological contract is "an individual's beliefs regarding the terms and conditions of a

reciprocal exchange agreement between that focal person and another party” (pg. 123). The psychological contract is an integral part of the employment relationship that influences behaviors through perceived mutual obligations of the involved parties (Robinson et al., 1994; Rousseau, 1995). While the psychological contract is normally perceived as unwritten, it has “the power of self-fulfilling prophecies: they can create the future” (Rousseau, 1995, pg. 9). It is the individual’s perceptions that form the psychological contract, which in turn becomes a reciprocal obligation. The individual believes certain obligations are owed to the employer (e.g., loyalty or hard work) and in return certain inducements will be provided by the employer (e.g., job security and good pay) (Rousseau, 1990). The individual’s psychological contract is the essence of the perceived relationship formed between the employee and employer, yet the terms are subjective, and the parties to this relationship do not necessarily agree to its terms (Rousseau, 1989). In Herriot and Pemberton (1997), the number of psychological contracts is expected to be constrained only by the number of employees in an organization, and any number of employees may share similar perceptions of various aspects of the contract.

Social information processing theory (Salancik & Pfeffer, 1978) implies that the social cues employees receive from not only their own behaviors, but also their employer’s behaviors will modify their beliefs of perceived obligations owed to and from their employer. Herriot and Pemberton (1997) parallels this view by proposing that development of the psychological contract is a social process, because beliefs of the contract originate from each party through direct or indirect communication.

Researchers have applied Rousseau’s (1989; 1995) psychological contract concept to frame their investigation into understanding a variety of work relationships, such as between an IT professional’s preferred employment duration as determined by their career anchor, life stage, and competencies; and between permanent, fixed term, and temporary government staffer worker arrangements and their commitment and organizational citizenship behavior (Agarwal, De, & Ferratt, 2001; Coyle-Shapiro & Kessler, 2002). The psychological contract has been treated as a mediator between organizational procedures and attitudinal and behavioral outcomes of expatriate managers

(Guzzo, Noonan, & Elron, 1994). The psychological contract has also been treated as an antecedent to the helping dimension of OCB of contingent and regular professional workers of service organizations (Van Dyne & Ang, 1998). Van Dyne and Ang (1998) found when contingent employees did not hold positive beliefs of their psychological contracts, they withheld their helping behaviors, but not when they held positive beliefs. However, regular employees exhibited helping behaviors even when they held lower perceptions of their psychological contracts. If a particular employment relationship is defined by a specific psychological contract that can change and evolve over time, then an individual, who is connected to multiple organizations (e.g., employed by one agency and contracted to work for another organization) conceivably has multiple psychological contracts with each contract having differing characteristics (McLean Parks et al., 1998), and each susceptible to its own levels of fulfillment and obligation.

Approaches to the Psychological Contract

The psychological contract has been empirically measured from three distinct approaches: content, evaluation, and dimensional (Rousseau & Tijoriwala, 1998). The *content approach* examines the specific aspects or tangible terms of the perceived exchange relationship, such as employer's obligations of high pay and career development, and is used routinely in psychological contract research (Robinson, 1996; Rousseau, 1990; Van Dyne & Ang, 1998). In Van Dyne and Ang (1998), the content approach was used to investigate contingent and regular employees' perceptions of their psychological contracts. Van Dyne and Ang adapted the employer obligation items used in Robinson et al. (1994), and, as hypothesized, found that contingent employees expect less from their employers than regular employees expect.

Rousseau (1990) contends that the psychological contract can be an array of emotional and practical expectations of benefits between employee and employer. Accordingly, the theory of psychological contracts posits that when an individual is in an employment relationship, specific aspects within the contract can be either transactional or relational (Robinson et al., 1994; Rousseau, 1990; Rousseau & McLean Parks, 1993). The content approach enables clarification into specific types of obligations between the employer and employee, but generalizability across populations can become an issue

when defining the elements of the psychological contract. Rousseau's (1990) study of graduating MBA students with recently accepted job offers defined employer obligations for training and development and employee obligations for working overtime as transactional elements of the psychological contract. Robinson et al.'s (1994) study of business school alumni interpreted the same employer and employee obligations as relational elements of the psychological contract. Beard and Edwards (1995) propose that relationships between contingent employees and their employers may be more transactional than relational simply because of the weakened employment relationship and their inability to develop relationships with trust and interpersonal attachment that emerges in long-term relationships.

The *evaluation approach* considers the degree of fulfillment, change, breach, or violation perceived within the context of the contract and has received a good deal of research interest (Guzzo et al., 1994; Robinson et al., 1994; Robinson & Morrison, 1995; Robinson & Rousseau, 1994; Turnley, Bolino, Lester, & Bloodgood, 2003). Research on permanent employees suggests that employees' perceptions of their psychological contracts change over time. When the employer fails to live up to their commitments, employees believe they owe less to their employers (Robinson et al., 1994). While trying to understand the employee-employer relationship with regard to changes in the psychological contract, researchers have investigated the consequences of a breached or violated contract (e.g., Robinson, 1996; Robinson et al., 1994; Robinson & Rousseau, 1994; Rousseau, 1990).

Rousseau (1989) defines the violation of a psychological contract as "a failure of organizations or other parties to respond to an employee's contribution in ways the individual believes they are obligated to" (pg. 128). This definition has been referred to when explaining contract breach and contract violation (e.g., Robinson, 1996; Robinson & Rousseau, 1994). An employee develops perceptions of obligations owed them according to their contributions to the organization. When the organization fails to respond accordingly, an individual may construe the contradiction as a violation or a breach. This incongruence in the psychological contract is a subjective experience; whenever one's psychological contract is violated, the result produced may be one of

disappointment, anger, or mistrust. This incongruence can also be thought of as the extent that the contract has been fulfilled. Robinson and Rousseau (1994) state this reaction refers to the individual's perceptions of promises not received (e.g., the individual performs some service, function, or task expecting to receive something in exchange, which does not materialize). With any perceived violation, the individual may change their beliefs about what they subsequently owe their employer, and accordingly, change their beliefs about what their employer owes them (Robinson et al., 1994; Rousseau, 1989). However, Rousseau and Tijoriwala (1998) stipulate that what is important is how the individual reacts to the perceived violation or breach, and that assessment of change in the psychological contract continues to be a relevant area of research interest.

Studies investigating perceptions of violations to the psychological contract have considered the consequences to a number of attitudes and behaviors. Studies investigating contract violations have found violations related to lower trust and job satisfaction (Robinson & Rousseau, 1994) and in-role and extra-role behaviors (Robinson & Morrison, 1995). Studies investigating contract breaches have found breaches related to lower organizational citizenship behavior (Coyle-Shapiro, 2002), performance, civic virtue behavior, intentions to stay (Robinson, 1996), and organizational commitment (Coyle-Shapiro & Kessler, 2002). What is consistent throughout these studies is that if an individual perceives that their psychological contract is violated, it is 'what' the individual does about the violation that is important. The individual's interpretation of the "overall quality of the employment relationship" is an important indicator of issues involving fulfillment of the psychological contract (Rousseau, 2000, pg. 269). In Turnley et al. (2003), the extent of psychological contract fulfillment on the dimensions of pay and a supportive employment relationship was positively related to in-role performance, OCB directed at the organization, and OCB directed at individuals within the organization.

The *dimensional approach*, the term used for this study, has received conceptual interest (McLean Parks et al., 1998; Rousseau & Tijoriwala, 1998) and recent empirical interest (Sels et al., 2004). Distinguishing the psychological contract through particular traits or adjectives that characterize summary properties of the contract has been labeled a

dimensional approach by some researchers (e.g., McLean Parks et al., 1998) and a feature approach by other researchers (e.g., Rousseau & Tijoriwala, 1998; Sels et al., 2004). Both approaches identify a variety of similar properties that characterize a contract. McLean Parks et al. (1998) state that the dimensional approach might be more appropriate than the content approach when defining the characteristics of the psychological contract of individuals in varying employment arrangements. The researchers maintain that the precise content of psychological contract may be difficult to specify over the wide range of alternative employment arrangements and some content may be inappropriate to employees of different employment types. For example, a company contractor may not expect their employer or contracting organization to provide career development opportunities, yet permanent employees would expect career development opportunities from their employer.

The concept of the dimensional approach to the psychological contract was initially conceived as having five fundamental dimensions of stability, scope, tangibility, focus, and time frame (Rousseau, 1990; Rousseau & McLean Parks, 1993). Further conceptualization and research led to the addition of three more dimensions to the psychological contract framework: particularism (McLean Parks & Smith, 1998), multiple agency, and volition (McLean Parks et al., 1998). Sels et al.'s (2004) study employed the dimensional approach assessing the impact of the employee's psychological contract on affective commitment and personal control. The researchers investigated the psychological contract dimensions of stability, scope, tangibility, and time frame, but varied the other McLean Parks et al. (1998) dimensions and included, instead, exchange symmetry and contract level. Their reasoning for incorporating the dimensions of exchange symmetry and contract level was based upon industrial relations literature and the importance of collective bargaining and union representation in the employment relationship of their intended sample population. Sels et al. (2004) found a positive relationship between the psychological contract dimensions of time frame, exchange symmetry, and contract level and affective commitment. They also found a positive relationship between the psychological contract dimensions of tangibility, scope, and stability and personal control.

The eight psychological contract dimension definitions as outlined in McLean Parks et al. (1998) are provided to offer consistency and understanding of the dimensions that are addressed in the study: stability, scope, tangibility, time frame, particularism, focus, volition, and multiple agency. These definitions are parsimonious with prior research and are considered to work well with conceptualizations for alternative employment arrangements.

Stability of the psychological contract refers to the extent the contract is constant or static opposed to dynamic and evolving. The perceptions of obligations and entitlements framed within the psychological contract evolve in response to changing needs. McLean Parks et al. (1998) state that stability is the degree to which the psychological contract is limited in its ability to evolve and adjust without an implied renegotiation of the contract conditions. McLean Parks et al. (1998) assert that the psychological contracts of non-permanent types of employees will not be as flexible and malleable as those of permanent employees, and the stability of psychological contracts between individuals in alternative employment arrangements may also differ. Shortened tenure or length on the job makes the establishment of trusting relationships, which enable a more flexible and malleable psychological contract, more difficult than long tenure or unlimited employment length.

Scope refers to the extent of the boundary between an individual's employment relationship and other portions of one's life (e.g., the amount an individual's work responsibilities spill over into their personal life (McLean Parks et al., 1998)). The scope of a contract can vary from very narrow to very broad. For instance, some independent contractors' scope may be broad as they may work hours beyond the typical work week in order to complete the job on-time, yet temporary workers' scope may be narrow as they are unlikely to take work home or offer helpful suggestions that go beyond the basic job description (McLean Parks et al., 1998). Morrison (1994) found that the more broadly employees describe their job responsibilities, the more likely they perform aspects of organizational citizenship behavior.

Tangibility refers to the explicitness of the psychological contract with respect to the employee's degree of understanding to the defining boundaries, terms, and

expectations of the relationship. Important characteristics of tangibility are that the specific terms of the contract are visible and not ambiguous to third parties (McLean Parks et al., 1998). Employees who perform piecework consider their contracts as having high levels of tangibility; however, research scientists' consider their contracts as being less tangible, and the more specific and observable the terms of a contract, the less likely the employee will go beyond the minimum requirements of the job (McLean Parks et al., 1998). Davis-Blake and Uzzi (1993) found that temporary workers are routinely hired with the clear understanding of the length of their employment and are placed in positions that are less complex and easily monitored. In Ang and Slaughter (2001, pg. 337), a contractor justified his work behavior by saying "...it is not my job to question work assigned to me."

Time frame of the psychological contract has evolved from a single dimension to one defined in two elements that illustrate the diversity of labor work force. In a study that conceptualizes human resource practices that would affect the employee's psychological contract, Rousseau and Wade-Benzoni (1994) define the time frame dimension with end points representing a close-ended, specific contract at one end and an open-ended, indefinite contract at the other end. McLean Parks et al. (1998) indicate that employees may no longer perceive their employment relationship to be just short- or long-term, representing *duration*. Employees must now also consider whether the duration of the relationship is defined with any assurance as to when it will terminate, representing *precision*. McLean Parks et al. (1998) propose there will be differences in duration and precision beliefs within, as well as between, permanent and contingent workers. These differences refer to whether the employment relationship will continue, the job is a one-time occurrence, the job is a reoccurring one, as well as the length of time that the employment relationship will last.

Particularism of the psychological contract refers to "the degree to which the employee perceives the resources exchanged within the contract as unique and non-substitutable," and "the key...is the notion of dependence through non-substitutability" (McLean Parks et al., 1998, pg. 714). For instance, an organization may be dependent upon an individual whose skills or knowledge is sufficiently unique that obtaining a

replacement or training another would not be an easy task. Pfeffer and Baron (1988) established the importance of employees acquiring firm-specific knowledge, which increases their value to the firm and creates a basis that could lead to a long-term relationship. A study investigating externalized workers, Davis-Blake and Uzzi (1993) stated the study did not confirm whether independent contractors are actually hired because of their unique skills, but did find that temporary workers are not likely to have the jobs requiring firm-specific or complex technical skills.

Focus of the psychological contract has been debated within the field as to whether it is two distinct dimensions representing an economic continuum and a socio-emotional continuum or one continuum encompassing the extreme points of “the relative emphasis on socio-emotional versus economic concerns” (McLean Parks et al., 1998, pg. 711). For this study, focus refers to relative emphasis on economic versus socio-emotional concerns. Focus addresses how important economic or socio-emotional concerns compare in the psychological contract. A psychological contract, geared toward truthfulness, sharing, respect, development opportunities, etc., is typical of socio-emotional concern; whereas, focus geared toward material and monetary rewards is typical of an economic concern (McLean Parks et al., 1998). Rousseau (1989) stated that the longer employment relationships continue, there will be recurring exchanges of contributions, which in turn will strengthen the employee’s perceptions of the relationship, yet Rousseau (1995) theorized contingent workers do not expect or entertain socio-emotional rewards because their particular employment arrangements are not based on those elements. McLean Parks et al. (1998) proposed that an independent contractor’s focus would be high in economic but low in socio-emotional because their work relationship is typically independent of others and their contractual agreement is for specific talents for a specific project.

Volition of the psychological contract is “the degree to which employees believe they had a choice in the selection of the nature of the employment relationship, including, but not limited to, the degree to which they had input or control into the terms of the contract or formation of the ‘deal’” (McLean Parks et al., 1998, pg. 720). Volition also refers to alternatives one may or may not have with respect to job offers. For instance, an

individual with many job offers is not as dependent on any one job as another with less job offers. Also, an individual who has some specialized expertise may not be as dependent on any one job as another individual with no specialized talents. When individuals have less marketability, this does not allow for improved negotiations of desired salary and benefits (McLean Parks et al., 1998; Pfeffer & Salancik, 1978). An IT professional may engage in some degree of negotiation if the IT professional's skill set is sufficiently unique and in demand. Consequently, the IT professional will have a higher level of volition than an individual whose skill set is not unique and in demand, and, thus, has little room for negotiation. An independent contractor might have a high level of volition in their choice of contracted jobs, but even this instance might be affected by market conditions and availability of jobs. McLean Parks et al. (1998) advised that the dimension of volition be used as a moderator between the employee's psychological contract and their attitudes and behaviors.

Multiple agency of the psychological contract accommodates multiple employment arrangements, thus the potential for multiple psychological contracts. According to McLean Parks et al. (1998), a multiple agency relationship exists when “an act by an employee simultaneously fulfils obligations to two or more entities, with full knowledge and sanction from both” (pg. 718). For instance, a contractor employed by a professional service agency may also be working for a corporation on a special two-year project. This individual will likely have at least two psychological contracts, one with the professional service agency and one with the organization with which the IT professional is working, and the dimensions of the two psychological contracts will in all probability differ. McLean Parks et al. (1998) proposed that the multiple agency dimension doesn't fit neatly with the other psychological contract dimensions, because multiple employment arrangements increase the complexity of the individual's psychological contract. Consequently, this study will focus on the IT professional's psychological contract as it relates to their employment arrangement, which is connected to their work environment where they work on projects.

Scarcity of Psychological Contract Research in the IT Context

In an effort to improve the generalizability of psychological contract research, sample populations have come from a variety of industries (e.g., professional workers from the banking and hospital industries (Van Dyne & Ang, 1998), and professional employees from aerospace, electronics, accounting firms (Porter, Pearce, Tripoli, & Lewis, 1998)). Yet, there has been little empirical research sampling IT professionals and, until recently, no direct research of their psychological contract. Martinez (2004) examined the relationship between full-time IT employees' organizational commitment and OCB and perceptions of their employers' psychological contract violations. Results revealed violations of the psychological contract content dimensions of growth, development, and organizational rewards had a negative relationship with altruism-based OCB and generalized compliance-based OCB. King and Bu (2005) conducted a cross-cultural study and examined the psychological contracts of new IT recruits who were graduating students in the IT discipline in the United States and China. Using the content approach, they found similar perceptions of employers' obligations to provide high pay and long-term job security and employees' obligations to be loyal and volunteer to do non-required tasks.

Agarwal et al. (2001) considered the relationship between the IT professional's career anchor, life stage, and competencies and their preferred employment duration using the psychological contract as a theoretical underpinning. Ang and Slaughter (2001) used the psychological contract concept in the investigation of contract and permanent software developers and found that supervisors perceived contractors to have lower loyalty, obedience, trustworthiness, and performance than permanent employees. Even with low ratings, the contractors believed that the organization provided them higher levels of support.

Rousseau (2000) contends that individuals with a "higher labor market power," (pg. 263) will have increased maneuvering ability with their employment opportunities, resulting in differences in their psychological contracts. Accordingly, psychological contract theory posits, "workers with greater market power will have psychological

contracts that reflect more idiosyncratic individual demands” (pg. 265). IT professionals, in a variety of employment arrangements, represent these types of individuals.

Key non-IT longitudinal studies by Robinson and Rousseau (1994) and Robinson (1996) sampled graduate students when they entered the work force and then again two years later to gain perceptions to changes in the psychological contract. The study by Rousseau (1990) investigated the perceptions of transactional and relational obligations and contracts. In Robinson and Rousseau (1994) and Robinson (1996), the respondents’ specific employment arrangements were not investigated, and in Rousseau (1990), only respondents who had accepted full-time employment participated in the study. Sels et al. (2004) contributed to psychological contracts research by empirically testing the nature of the employee’s psychological contract using the dimensional approach investigating both employee and employer obligations. Sels et al. (2004) sampled Belgian employees from two categories – permanent employees and employees with a “temporary (fixed-term) contract” (pg. 474) and from a variety of organizations.

This research examines a more comprehensive set of employment arrangements beyond two categories. This research further expands the body of knowledge concerning IT professionals in different employment arrangements and the psychological contract using the dimensional approach. Table 1 is a summary of psychological contract research evidenced in this section.

Table 1. Psychological contract empirical studies*

Study Author(s)	Employment Type / Sample	Type of PC**	PC Construct	Other Constructs Studied	Key Findings
Rousseau (1990)	Perm / recently hired MBA grads	C	Employer & employee obligations	Careerism, specific company, expected tenure	Employer & employee obligations found to be transactional or relational. Relational obligations to employer (loyal & minimum 2 yr stay) pos. related to expected tenure.
Guzzo, Noonan, & Elron (1994)	Perm / Expatriate managers	C & E	Employer obligations, extent provided & extent should be provided	Perceived org. support, org. commitment, intentions, turnover	Perceived org. support related to org. commitment. Indications of fulfillment of PC related with org. commitment & intention.
Morrison (1994)	Perm / clerical workers	T	None	OCB (in-role & extra role), satisfaction, affective & normative commitment	Employees differed in defining in-role and extra-role behaviors; differences related to commitment and social cues (employee & supv interaction). Sat, affective & norm commitment pos. related to perceived job breadth. Tenure neg. related to perceived job breadth.
Robinson, Kraatz, & Rousseau (1994)	Perm / business school alumni	C & E	Employer & employee obligations	Employer violation	(Longitudinal) Employer & employee obligations found to be relational or transactional. Employees' obligations decreased over time, but employer obligations increased. Violation affected obligations differently - all employee relational obligations, none of employer transactional obligations.

Name of Study	Employment Type / Sample	Type of PC**	PC Construct	Other Constructs Studied	Key Findings
Robinson & Rousseau (1994)	Perm / graduating management students	E	Employer obligation violation	PC violation, Careerism, trust, job satisfaction, intentions, turnover	(T1 @ grad, T2 @ 2yrs) Violations = lower trust, job satisfaction, intentions, & higher turnover.
Robinson & Morrison (1995)	Perm / MBA alumni	C & E	Employer obligations & employer violation of obligations	Trust in employer, OCB – civic virtue	(T1 @ time of hire, T2 @ 18 mos, T3 @ 30 mos) Violations factored into 2: relational & transactional. Violations = lower civic virtue. Trust mediates relational violation & civic virtue
Robinson (1996)	Perm / recently hired graduating MBAs	C & E	Employer obligations @ T1, employer fulfillment of obligations @ T2, breach = T2-T1 item	Trust @ T1 & T3, PC breach @ T2, unmet expectations @ T3, OCB – civic virtue @ T3, Intentions to remain @ T1 & T3, TO @ T2 & T3	(T1 @ time of hire, T2 @ 18 mos, T3 @ 30 mos) Breach = lower performance, civic virtue behavior, & intentions to remain (T3). Initial trust neg. related to PC breach. PC breach led to loss in trust, thus lower employee contributions.
Van Dyne & Ang (1998)	Regular & contingent / Banking & hospital workers	C	Perceptions of PC - employer obligations	Affective commitment, OCB - helping	Using work status as moderator: Contingent: With neg. PC, withheld helping, but not with pos. PC. Regular: exhibit helping behavior regardless of PC. Contingent expect less PC than Reg.

Name of Study	Employment Type / Sample	Type of PC**	PC Construct	Other Constructs Studied	Key Findings
Porter, Pearce, Tripoli, & Lewis (1998)	Perm / Aerospace, electronics, & accounting employees	C & E	Employee perceptions of inducements & employer reported inducements	Org. sat., job sat., self-rpt perf evaluation	Larger the gap between employee perceptions vs. actual inducements, the lower org. satisfaction, even after controlling job sat., & perf evaluation.
Agarwal, De, & Ferrett (2001)	Perm / MIS majors and ITPs	T	None	Career anchors, Competencies, Preference employment duration	Research in progress – statistical results not reported.
Ang & Slaughter (2001)	Perm & contractor / SW Developers	T	None	Att - Org Spt, D. Justice, alienation Beh - in-role & extra role behaviors Perf - loyalty, obed, trust, perf	Contractors felt higher levels of org spt (self rate). No diff with D justice & alienation. Contractors lower in-role & extra-role behaviors (peer rate). Contractors have lower loyalty, obedience, trustworthiness, & performance (supv rate).
Coyle-Shapiro (2002)	Perm / Public sector employees (Great Britain)	C & E	Employer obligations, inducements	Norm of reciprocity, trust, procedural justice, interactional justice, OCB	Employer inducements pos. related to functional participation & loyalty. Employer obligations pos. related to advocacy participation, helping, & functional participation.
Coyle-Shapiro & Kessler (2002)	Perm, fixed term, & temp / government employees, England	C	Employer obligations, employer inducements	Perceived org spt, org commit, OCB-O, contract status	Contingent rpt fewer obligations & inducements, thus less OCB-O, lower org commitment. But contingent = higher perceptions of org spt. Perm engage in OCB independent of employer inducements.

Name of Study	Employment Type / Sample	Type of PC**	PC Construct	Other Constructs Studied	Key Findings
Turnley, et al. (2003)	Perm health care workers & MBA students	C & E	Pay & supportive employment relationship (employer obligations)	Fulfillment of 2 obligations; cause of PC breach, in-role, OCB-O, OCB-I	PC fulfillment is pos. related to 3 forms of perf (rated by supv). PC fulfillment related more to employ relationship than pay. PC fulfillment related more to OCB-O than OCB-I and any breach OCB-O withheld.
Martinez (2004)	Perm FT / IT	E	Employer PC violation of intrinsic & extrinsic promises	Altruism, generalized compliance; affective, continuance & normative commitment	Violations of autonomy, control, growth, & development PC dimensions neg. related to affective commitment. Violations of growth & development neg. related to norm. commitment, altruism, & gen. compliance. Violations of org benefits neg. related with continuance commit.
Sels, Janssens, & Van Den Brande (2004)	Perm & temp (fixed-term) contract / Belgian employees	D	Employer and employee obligations	PC Dimensions, Affective commit, Personal control,	Time frame, exchange symmetry, & contract level positively related to affective commit. Tangibility, scope, & stability pos related to personal control.
King & Bu (2005)	Perm / new IT recruits & also graduating students (US & China)	C	Employer and employee obligations	Indiv- collectivism	Recruits hold similar beliefs on obligations – high pay, job autonomy, long-term job security, work extra when needed, loyalty, & volunteerism. U.S. want rapid advancement, motivating boss & complete projects on time, which Chinese want project milestone bonuses.

* Conceptual/theoretical articles omitted, e.g., Rousseau (1989), Beard & Edwards (1995), Rousseau (1995), McLean Parks et al. (1998), Rousseau & Tijoriwala (1998).
**C=Content Approach; D=Dimension Approach; E=Evaluation Approach; T=Psychological Contract Theory

Organizational Behaviors

A distinction between “dependable role performance” and “innovative and spontaneous behavior” was offered by Katz (1964, pg. 132). Katz (1964) and later Katz and Kahn (1978) conferred the importance of behaviors beyond the normal job requirements indicating that these many types of behaviors are required of organizational members so that organizations can not only survive, but also function effectively. Whenever alternative IT staffing measures are employed, organizations do not expect to lose productivity or job performance, but expect to gain cost advantages over in-house services, or gain improvements in systems development productivity and IT core competencies, etc. Consequently, organizations are typically looking for behaviors beyond the dependable role performance from their organizational members, and such innovative and spontaneous behaviors might include organizational citizenship behaviors and innovative work behaviors.

Organizational Citizenship Behaviors

As specified in Organ (1988), organizational citizenship behavior (OCB) is recognized as an important contributor toward the goal of organizational effectiveness. OCB is defined as extra-role, discretionary actions that help others in the organization perform their jobs or show support for and conscientiousness toward the organization (C. A. Smith et al., 1983). Organizational citizenship behaviors are not part of the traditional productivity and task performance measures and the results of OCB are proposed to free up resources, which will facilitate a more effective and efficient system (Organ, 1988). Organizational citizenship behaviors are not specified in the employee’s formal job description, there is no “contractually guaranteed” reward as a result of any performed citizenship behavior, and the employee cannot be held accountable for non-performance of these behaviors (Organ, 1988; 1997, pg. 89). Organ (1988) states that although no one deed is going to bring about significant overall improvements to the organization, it is the

“aggregate” (pg. 6) of these actions that will signify an improved functioning of the organization.

Organ (1988) references existing empirical studies (e.g., Bateman & Organ, 1983; C. A. Smith et al., 1983), and accordingly, proposes five major categories that fit within the taxonomy of OCB, altruism, conscientiousness, civic virtue, courtesy, and sportsmanship. *Altruism* refers to discretionary actions that have some helping effect and are directed at a specific individual or group and the task performed has some organizational relevance. *Conscientiousness*, originally conceived as generalized compliance (C. A. Smith et al., 1983), refers to discretionary role behaviors that go well beyond the minimum required levels of the job and are directed at the organization. *Civic virtue* refers to behaviors that an individual exhibits indicating personal attachment and concern for the life of the organization and implies a “sense of involvement” (Organ, 1988, pg. 12). *Courtesy* refers to those discretionary actions that prevent work-related problems from occurring, or take proactive measures to improve a situation. Courtesy is different from altruism by the timing of the actions; courtesy helps prevent a problem, whereas altruism helps to improve a situation where a problem likely exists. *Sportsmanship* refers to the willingness to endure less than desirable work situations, and “avoid complaining, petty grievances, railing against real or imagined slights” (Organ, 1988, pg. 11). Researchers have applied the five categories from Organ (1988) to investigate the relationship with trust and satisfaction (Podsakoff, MacKenzie, Moorman, & Fetter, 1990), the relationship with job breadth with in-role and extra-role behaviors (Morrison, 1994), and to identify an individual’s motives toward OCB (Rioux & Penner, 2001). Varying from the five categories, Moorman and Blakely (1995) used interpersonal helping, individual initiative, and loyal boosterism as OCB categories while investigating individualism-collectivism characteristics.

Researchers offer other perspectives to OCB, such as pro-social behavior (Puffer, 1987), pro-social organizational behavior (Brief & Motowidlo, 1986), contextual performance (Motowidlo & Van Scotter, 1994), and citizenship performance (Borman, Penner, Allen, & Motowidlo, 2001). Researchers also offer alternatives to Organ’s (1988) OCB categories in their pursuit of theoretical grounding (Graham, 1991) by

differentiating between in-role and extra-role behaviors (Morrison, 1994; Van Dyne & LePine, 1998). Graham (1991) took a political philosophical view by defining OCB with the categories of obedience, loyalty, and participation and proposes that the strength of the individual's "relational ties" to the organization may affect the extent of their OCB (pg. 259).

It was Inkeles' (1969) original concept of citizenship, adapted by Graham (1991, pg. 255) and then by Van Dyne et al. (1994, pg. 767), that was used to define loyalty, obedience, and participation: *Loyalty* refers to identifying with the organization and having allegiance to the organization, going beyond the "parochial interests of individuals, work groups, and departments." Typical behaviors include "defending the organization against threats, contributing to its good reputation, and cooperating with others to serve the interests of the whole." *Obedience* refers to accepting the "rules and regulations governing organization structure, job descriptions, and personnel policies." This would include such actions as having "respect for rules and instructions, punctuality in attendance and task completion, and stewardship of organizational resources." *Participation* refers to one's "interest in organizational affairs guided by ideal standards of virtue, validated by an individual's keeping informed and expressed through full and responsible involvement in organizational governance." Participative activities might include "attending non-required meetings, sharing informed opinions and new ideas with others, and being willing to deliver bad news...."

Van Dyne et al. (1994) found the participation category to empirically divide into three separate categories – social, advocacy, and functional. *Social participation* refers to non-controversial participation, such as interpersonal and social contact with other individuals. *Advocacy participation* refers to "behaviors that are targeted at other members of the organization and reflect a willingness to be controversial;" (pg. 780) and describes innovation as "maintaining high standards, challenging others, and making suggestions for change (pg. 780). *Functional participation* refers to behaviors that have a personal focus, yet still contribute to organizational effectiveness, such as "performing additional work activities, self-development, and volunteering for special assignments." Van Dyne et al. (1994) redefined OCB as a multi-dimensional construct with the

categories: loyalty, obedience, social participation, functional participation, and advocacy participation. Van Dyne and LePine (1998) combined concepts of Van Dyne et al. (1994) and Organ (1988) and demonstrated that the individual employees, their peers, and their supervisor were able to distinguish between extra-role and in-role behaviors.

Organizational citizenship behaviors have been operationalized according to who is benefited – another individual or the organization. Turnley, Bolino, Lester, and Bloodgood (2003) found that when individuals display altruism and courtesy, the behaviors benefit individuals, and when individuals display sportsmanship, civic virtue, and conscientiousness, the behaviors benefit the organization. Throughout the debate surrounding how to accurately define aspects of Organ's (1988) OCB dimensions (e.g., LePine, Erez, & Johnson, 2002; Organ, 1997; Van Dyne et al., 1994), it is clear that individuals perform actions that are not clearly defined in their job description and these actions contribute to the effectiveness of the organization. Performance of these actions may or may not be recognized and rewarded in some manner, and the individual's perceptions determine whether the action is believed to be necessary, expected and within the bounds of their job, or beyond the normal expectations of their job.

In an attempt to understand the significance of OCB, Podsakoff and MacKenzie (1994) found that the supervisor's performance evaluations are affected by the extent that the salespeople exhibit OCB, with helping behavior making the greatest impression on the supervisor. The salespeople considered to be better performers are not only good workers but also "...make those around them more productive as well, by helping, being good sports, and/or exhibiting civic virtue" (Podsakoff & MacKenzie, 1994, pg. 359). These findings bring validity to Van Dyne and Ang's (1998) proposal that an individual's perceptions will come into play as organizational citizenship can be regarded as a behavioral gauge of the employee's responses to their relationship with their employer. The relevancy of these perceptions is important when IT professionals from various employment arrangements are placed in a work environment where the performance of their job is partially judged by the amount of OCB performed. Evidence of this dilemma was found in Ang and Slaughter (2001) where the permanent employed team members felt their contractor peers displayed lower extra-role behaviors.

This research examines a set of organizational citizenship behaviors that have been used in prior research and include: helping, loyalty, advocacy participation, functional participation, and obedience (Coyle-Shapiro, 2002; C. A. Smith et al., 1983; Van Dyne et al., 1994). These behaviors fit within the conceptual realm of those that might offer more variability when considering IT professionals in different employment arrangements.

Innovative Work Behaviors

When organizations execute alternative employment arrangements to satisfy their IT staffing requirements, management must resolve risks involved in retaining continuity in their intellectual capital and ensuring knowledge sharing between those IT professionals from the varied employment arrangements. Using a psychological contract perspective, Koh, Ang, and Straub (2004) found effective human capital management, effective knowledge transfer, and knowledge sharing as key mutual obligations required for a successful IT outsourcing relationship between the customer and the supplier. Another issue organizations must contend with is how the use of alternative employment arrangements will affect the innovative work behaviors of IT professionals.

Innovation is defined a multitude of ways. Zaltman, Duncan, and Holbek (1973) define innovation as “any idea, practice or material artifact perceived to be new by the relevant unit of adoption” (pg. 10), while Kanter (1983) refers to innovation as “the process of bringing any new, problem-solving idea into use” (pg. 20). Implementing alternative employment arrangements to lower operational costs, or restructuring work teams by adding external workers both fall under Kanter’s (1983) definition of innovation as the “generation, acceptance and implementation of new ideas, processes, products or services” (p. 20). Another variation of the definition of innovation is “the development and implementation of new ideas by people who over time engage in transactions with others within an institutional context” (Van de Ven, 1986, pg. 591). According to Kanter (1988), the continuity and stability of personnel within any work group, project, or organizational unit is critical to its effectiveness, and yet “innovation stems from individual talent and creativity” (pg. 205). Consequently, it is the intentions for

innovative work as it relates to IT professionals in their employment arrangement that is of interest in this study.

The concept of innovative work behavior has been defined by West and Farr (1990a, pg. 9) as “the intentional introduction and application within a role, group, or organization of ideas, processes, products, or procedures, new to the relevant unit of adoption, designed to significantly benefit the individual, group, organization, or wider society.” This definition was adopted by Janssen (2000) in his investigation of how perceptions of fairness between effort and reward affect non-management employees’ relationship between job demands and innovation work behavior. Within this definition, innovation refers to planned actions that hope to accomplish some beneficial result.

Studies have found creative efficiency associated with the some diversity of work roles (McCarrey & Edwards, 1973) and social independence or lack of concern for social norms (Kaplan, 1963). IT professionals have been found to have high growth needs, high need for achievement, yet low social needs (Cougar et al., 1979). Therefore, the employment arrangement of the IT professionals may affect their creative performance, as research has found social and environmental factors can play a crucial role in creative performance (Amabile, 1983).

With innovation, it has been inferred that the nature of one’s job assignment aids in idea generation; the broader defined the job, the greater the possibility an individual will not be constrained and will be motivated to look to solve problems, improve processes, think creatively, and be aware of their environment, especially changes (Kanter, 1988). In a study of non-management food sector employees, Janssen (2000) found the level to which workers responded innovatively to their job was determined by their perceptions of fairness on the job. Thus, an individual’s perceptions of their employer’s obligations and fulfillment of those obligations could affect the individual’s innovative work behavior. This would, in turn, have direct consequence to potential work group innovation as well as organizational citizenship behaviors. Understanding how diverse employment arrangements will affect the IT professionals’ willingness to participate in the creative group processes is an area that is not explored in this study.

This research examines the innovative work behavior as defined and empirically tested by Janssen (2000). This research expands the body of knowledge concerning the innovative work behavior of IT professionals using the dimensional approach of the psychological contract.

Antecedents to Organizational Behaviors

Researchers continue to search for clues to determine what individual characteristics will bring about desired organizational behaviors and how and why organizational behaviors occur. Studies have found positive correlations between job satisfaction and citizenship behaviors. C. A. Smith et al. (1983) discovered that respondents exhibited more OCB, specifically altruism, the higher their job satisfaction. The supervisor's level of supportiveness also affected the respondent's job satisfaction. Bateman and Organ (1983) realized greater significance in the relationship between job satisfaction and the employee's OCB than in the relationship between job satisfaction and the employee's performance. Besides job satisfaction, other antecedents are proposed to affect OCB. In the investigation of OCB and psychological contracts, Robinson and Morrison (1995) found employees less likely to perform civic-minded behaviors when they felt their employer had not fulfilled their obligations to the perceived contract. Robinson (1996) found trust mediated the relationship between perceived contract breach and employee's contributions.

Previous studies have considered the effects of alternative employment arrangements while investigating OCB, but not while investigating innovative work behaviors. In Pearce (1993), even though the contractors and permanent employees exhibited no significant differences in their commitment to the organization, the contractors reported that they performed more citizenship behaviors than their permanent counterparts. Van Dyne and Ang's (1998) study of permanent and contingent bank and hospital workers revealed that the relationship between psychological contracts and organizational citizenship was stronger for the contingent workers than for the permanent workers. Katz and Kahn (1978) and Organ (1988) agree that extra-role behaviors are thought to be outside the normal job descriptions, are not a requirement of the job, and are not clearly identified within the formal reward system of the organization. Yet, these

extra-role behaviors are often looked for when considering an individual's overall contribution to the organization. These extra-role behaviors include, not only organizational citizenship, but also innovative work, and it seems appropriate that both behaviors be investigated in a study that focuses on employment arrangements of IT professionals.

Summary

Since the inception of information systems projects, alternative employment arrangements have been relied upon to help with completing various phases from systems development through implementation (e.g., contracting with hardware vendors, using systems engineer consultants). Yet, little research has been conducted to bring insights into the impact the employment arrangement has on the IT professionals and their attitudes, and subsequent behaviors. Guzzo et al. (1994) summarized his study indicating there should be more research to determine the function of the psychological contract on in-role and extra-role performance. And as evidenced in Moore and Love (2005), citizenship behaviors continue to remain a vital component of the IT professional's performance. Using the dimensional approach to the psychological contract, the IT professional's perceptions of their employer's obligations and their perceptions of the fulfillment of their employer's obligations are investigated in this study. The psychological contract framework was adapted to predict two such organizational behaviors, organizational citizenship and innovative work, and were proposed to be affected by the IT professional's employment relationship.

CHAPTER THREE RESEARCH DEVELOPMENT

This research builds on existing theories of psychological contracts and social information processing. The first component of this research was empirical and theory testing. A conceptual model depicting the relationships among employment arrangement types, psychological contract, psychological contract fulfillment and organizational behaviors (e.g., organizational citizenship and innovative work) is presented in Figure 4. The employment arrangement category, as well as the characteristics of the employment arrangement, is proposed to affect the individual's contract. The level of fulfillment of an individual's psychological contract is proposed to affect both organizational behaviors. To achieve the objectives for the first research component, hypotheses were drawn from the conceptual model and tested by collecting primary data.

The second component of this research was exploratory and theory building. The IT professional's interpretation of the characteristics of their employment arrangement is absent from the literature. This exploration provides a clearer understanding of the characteristics of various employment arrangements in which IT professionals find themselves. These findings define and further clarify the characteristics within the IT professional's employment arrangement that may be influencing factors to the relationships in the model.

Hypotheses

The IT profession continues to see an increased use of varied employment arrangements, yet prior research on the effects of alternative employment arrangements has had mixed outcomes. Researchers agree that psychological contracts are an integral part of the employment relationship that influences behaviors through perceived mutual obligations of the involved parties (Robinson et al., 1994; Rousseau, 1995). Even so, Beard and Edwards (1995) propose workers from alternative employment arrangements will have psychological experiences different from those associated with permanent employees, such as control, job insecurity, and the nature of their psychological contract.

Research has discovered perceptual differences between contract and permanent software developers (Ang & Slaughter, 2001), contract and permanent engineers (Pearce, 1993), and contingent and permanent workers (Van Dyne & Ang, 1998), yet these studies have been limited to two-group comparisons. Van Dyne and Ang (1998) investigated contingent and regular employees' psychological contract perceptions of their employer obligations, and, as hypothesized, found that contingent employees expect less from their employers than regular employees expect. Coyle-Shapiro and Kessler (2002) stipulate that perhaps the contract status of permanent, fixed-term, and temporary government staff workers plays a significant role in the perceptions of their work arrangement and their resulting outcome attitudes and behaviors.

Research on psychological contracts using the dimension approach to date has been at a more conceptual level with no empirical studies until Sels et al. (2004). They linked formal employment characteristics, human resource practices, affective commitment, and personal control to the various dimensions. They obtained employee perceptions of employer obligations and employee obligations using four psychological contract dimensions conceptualized by McLean Parks et al. (1998): stability, scope, tangibility, and time frame. They added two dimensions, exchange symmetry and contract level, to consider the employment relationship with respect to contracts, unions, collective bargaining, and collective agreements. Research using the content approach to the psychological contract uses single item constructs, such as "rapid advancement" and evaluates them independently (Robinson et al., 1994; Rousseau, 1990), or evaluates the psychological contract as an averaged variable (Van Dyne & Ang, 1998). For this study, the hypotheses consider the IT professionals' perceptions of the employers' obligations as they relate to six of the psychological contract dimensions conceptualized by McLean Parks et al. (1998): stability, scope, tangibility, time frame, particularism, and focus. The psychological contract dimensions, volition and multiple agency, are not directly addressed by the hypotheses. The dimensions developed by Sels et al. (2004), exchange symmetry and contract level, were not adapted as they did not fit within the scope of the study.

Recognizing the conflicting research on employment arrangements and psychological contracts and the diversity of the employment arrangements available to IT professionals, directionality for the hypothesis cannot be posited. Therefore, the following research hypothesis is proposed:

Hypothesis 1: Differences in employment arrangement categories will explain mean differences in the employee's perceptions of their employer's¹ obligations in their psychological contract.

Salancik and Pfeffer's (1978) social information processing framework, as well as Hackman and Oldham's (1980) job characteristics model, reason that it is not the objective employment arrangement category, but the individual's perceptions of the characteristics of their employment arrangement, which are socially constructed, that impact their beliefs. Thus, social cues from others, whether employer, fellow worker, or individuals outside the work environment, may stimulate certain perceptions of the characteristics, just as they stimulate certain perceptions of the job and organization. Recognizing the potential differences of perceived characteristics within the employment arrangement categories, the following research hypothesis is proposed:

Hypothesis 2: Differences in the employee's perceptions of their employment arrangement characteristics will explain mean differences in the employee's perceptions of their employers' obligations in their psychological contract.

Rousseau (1989) contends that the longer an individual spends in a particular employment arrangement or job assignment, the more stable one believes the relationship. A job may be temporary, yet the individual's employment tenure with the firm may be longer than others in a permanent job position. This characteristic of the individual's employment arrangement may influence perceptions of the relationship. Consequently, the potential interaction between the employment arrangement category and the perceptions of the characteristics of the employment arrangement provides the support for the following proposed research hypothesis:

¹ For the purposes of this study, the term "employer's" is synonymous to "client's organization."

Hypothesis 3: Differences in the objective category of employment arrangement and differences in the employee's perceptions of their employment arrangement characteristics will interact to explain mean differences in the employee's perceptions of their employer's obligations in their psychological contract.

Employees develop perceptions of obligations owed them according to their contributions to the organization. When the organization fails to respond accordingly, individuals may construe the contradiction as a violation or a breach of the psychological contract. This incongruence in a psychological contract is a subjective experience, and can be thought of as the extent to which the contract is perceived to have been fulfilled. With any perceived non-fulfillment, individuals may change their beliefs about what they subsequently owe their employer, and also change their beliefs about what their employer owes them (Robinson et al., 1994; Rousseau, 1989). How individuals react to the perceived non-fulfillment of the psychological contract will affect subsequent behaviors (Rousseau & Tijoriwala, 1998).

Studies investigating psychological contract violations or breaches have found them related to lower in-role and extra-role behaviors (Robinson & Morrison, 1995), lower performance, civic virtue behavior, intentions to stay (Robinson, 1996), organizational citizenship behavior (Coyle-Shapiro, 2002), as well as lower trust and job satisfaction (Robinson & Rousseau, 1994). In their investigation of permanent and contingent bank and hospital workers, Van Dyne and Ang (1998) found that permanent employees exhibited helping behaviors irrelevant of their perceptions of their psychological contract. Contingent employees, however, withheld their helping behaviors when they did not hold positive beliefs of their psychological contract. Yet, in a previous investigation of psychological contracts and OCB of permanent employees, Robinson and Morrison (1995) found employees less likely to perform civic-minded behaviors when they felt their employer had not fulfilled their obligations to the perceived contract. Pearce (1993) revealed that even though contractors and permanent employees exhibited no significant differences in their commitment to the organization, contractors reported that they performed more citizenship behaviors than their permanent counterparts.

Coyle-Shapiro and Kessler (2002) observed that if contingent workers are to engage in OCB, employers must offer appropriate inducements. They also observed that permanent employees typically performed OCB independent of their employer inducement perceptions. In Coyle-Shapiro (2002), the government employees' perceived employer obligations were positively related to their helping, advocacy participation, and functional participation citizenship behaviors. Their perceived employer inducements, which refer to obligations they had actually received, were positively related to their loyalty and functional participation citizenship behaviors. The literature supports diversity in the findings with the employment arrangements, yet it is expected that the IT professionals' perceptions of the extent that the client organization has fulfilled the psychological contract will influence the amount to which they engage in OCB. Organizational citizenship behaviors are regarded as a collection of deeds and Organ (1988) recommends they be aggregated because no single act is sufficiently significant to improve the organization. Consequently, the following research hypothesis is proposed:

Hypothesis 4: Higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's organizational citizenship behaviors.

Even though Organ (Organ, 1988) recommends the collective act of citizenship behaviors, researchers consider OCB as a multi-dimensional construct and look at the significance of each dimension under study (Coyle-Shapiro, 2002), or investigate selective dimensions of OCB. Robinson and Morrison (1995) investigated the civic virtue dimension of OCB, Van Dyne and Ang (1998) investigated the helping dimension of OCB, whereas, Ang and Slaughter (2001) investigated loyalty, obedience, and extra-role behaviors. As such, it is proposed that the IT professionals' perceptions of the extent that the client organization has fulfilled the obligations of the psychological contract will be positively related to higher levels of each of the dimensions of OCB under study: helping, loyalty, obedience, functional participation, and advocacy participation.

Hypothesis 4a: Higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's organizational citizenship behavior dimension – helping.

Hypothesis 4b: Higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's organizational citizenship behavior dimension – loyalty.

Hypothesis 4c: Higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's organizational citizenship behavior dimension – obedience.

Hypothesis 4d: Higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's organizational citizenship behavior dimension – functional participation.

Hypothesis 4e: Higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's organizational citizenship behavior dimension – advocacy participation.

Innovative actions have been thought of as extra-role behaviors that are not obligatory, are outside the normal job description requirements, and are not clearly distinguished within the formal reward system (Katz & Kahn, 1978; Organ, 1988). In Janssen's (2000) investigation of fairness perceptions in non-management employees' relationship between job demands and innovative work behavior, he found the level to which the employees responded innovatively to their job was determined by their perceptions of fairness on the job. Thus, one's perceptions of the level of fulfillment of their employer's obligations could affect one's innovative work behavior. Accordingly, the following research hypothesis is proposed:

Hypothesis 5: Higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's innovative work behavior.

Research Model

To address the hypotheses outlined above, the conceptual research model is presented.

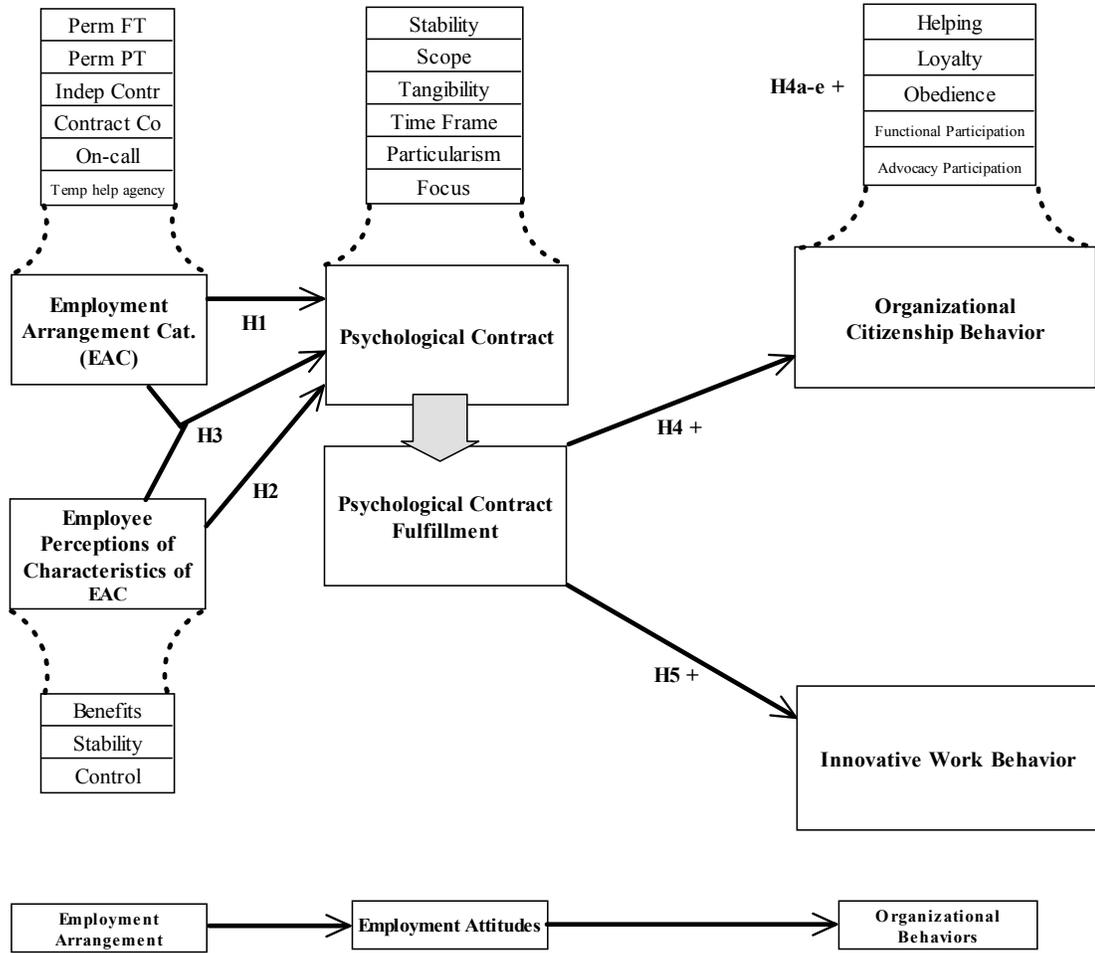


Figure 4. Conceptual model with hypotheses

CHAPTER FOUR RESEARCH METHODOLOGY

The purpose of this study was to evaluate IT professionals from a variety of employment arrangements. Self-report questionnaire data were collected from IT professionals to address the research questions and hypotheses. Chapter Four documents the sample of the study, the measurement instrument development, a synopsis of the pilot study, and the administration of the main study.

Sample

The goal was to obtain an adequate sampling of IT professionals in varied employment arrangements, enabling generalizability to the IT professional population. As of 2004, the total U.S. IT workforce numbered approximately 10.5 million workers (ITAA, 2004). With the diversity of the IT profession and no means to adequately satisfy the sampling frame of the U.S. IT workforce through a random sampling, the respondents were drawn from a convenience sample of working IT professionals located throughout the United States. The two primary sources of intended respondents for the main study were IT professionals who were University of South Florida alumni with MIS degree and graduate students from University of South Florida MIS evening classes.

Data for this study were collected through two means: a group-administered survey in MIS graduate evening classes and an on-line survey. All individuals were invited to participate with participation being strictly voluntary. For the data collection through the on-line survey, a letter of invitation to participate in the on-line survey was mailed to the alumni. Approximately four weeks after the initial letter had been mailed, a postcard was mailed as a follow-up reminder to those alumni who had not yet responded. Table 2 presents a summary of those alumni responding from each of the two mailings and those completing the group-administered survey. The response rate is the percentage of those completing the survey from the number of surveys possible. Respondents are those who completed the survey, and non-respondents are those who chose not to complete the survey, yet completed Section I of the questionnaire.

Non-response bias is at issue with surveys, therefore, basic demographic information was asked for in the event the respondent could not or chose not to complete the survey. The survey contained the statement “If you choose to not participate, please take a minute to complete Section I of the survey.” Section I had basic demographic information questions that enabled verification that those who did not participate were not different from those who chose to participate.

Table 2. Response rates

	n	Respondents	Response Rate	Non-Respondents
Letter – 1st mailing	3075	182	5.9%	26
Postcard – 2nd mailing	2400	69	2.9%	11
Group administered	36	36	100.0%	0
TOTAL	5511	287	5.2%	37

Table 3 presents a demographic profile of the 324 who replied to the invitations to participate, 287 respondents completed the survey and 37 non-respondents chose not to complete the survey. There were minor demographic differences between the groups; however, the differences don’t appear to affect the generalizability of the sample due to response bias.

While the target population centered on working IT professionals, there were a number of individuals who responded to the survey, but were not currently working in the IT field. Of the 287 respondents, 29 indicated they were not working in the IT field, and their responses were excluded from ensuing data analysis. Of the 37 non-respondents, 27 indicated they were not working in the IT field.

Method bias was assessed, as there were two primary sources for data collection, on-line survey and group administered. There were also two mailings inviting individuals to participate in the on-line survey. It was therefore important to ensure that the different sample sets were not so statistically different as to affect the analyses. Table 4 presents the demographic profile of the 258 IT professionals who completed the survey by data collection source and are included in the data analysis. Although Table 4 presents the demographics of the on-line survey respondents together, method bias as assessed for both first and second mailings as well as for the group-administered respondents.

Table 3. Demographics of respondents versus non-respondents

Age	All		Respondents		Non-respondents	
	n	%	n	%	n	%
< 25	28	8.6%	28	9.8%	0	0.0%
26 - 30	50	15.4%	42	14.6%	8	21.6%
31 - 35	65	20.1%	61	21.3%	4	10.8%
36 - 40	73	22.5%	61	21.3%	12	32.4%
41 - 45	41	12.7%	39	13.6%	2	5.4%
46 - 50	30	9.3%	26	9.1%	4	10.8%
51 - 55	24	7.4%	21	7.3%	3	8.1%
> 55	12	3.7%	8	2.8%	4	10.8%
Left blank	1	0.3%	1	0.4%	0	0.0%
TOTAL	324		287		37	
Gender						
Female	126	38.9%	108	37.6%	18	48.6%
Male	198	61.1%	179	62.4%	19	51.4%
TOTAL	324		287		37	
Education level						
High School	5	1.5%	5	1.7%	0	0.0%
Associate's	1	0.3%	1	0.4%	0	0.0%
Bachelor's	255	78.7%	228	79.4%	27	73.0%
Master's	61	18.8%	52	18.1%	9	24.3%
Doctoral	2	0.6%	1	0.4%	1	2.7%
TOTAL	324		287		37	

Any differences made sense considering the source of the sample. The group-administered respondents were younger, had less tenure in their employment arrangement than the on-line survey respondents from both mailings. The group-administered respondents were different from the first mailing respondents in their EAC and volition, which refers to preference to a different employment arrangement. First mailing respondents indicated higher job control than second mailing respondents; otherwise there were no differences in any demographics or other variables. There were no significant differences between the first and second mailing and the group-administered respondents that might affect the overall analysis due to method bias. Any differences provide further support to facilitate generalizability to the IT population.

Table 4. Demographics of IT professional respondents

Age	All IT Professional Respondents		On-line Survey		Group Administered	
	n	%	n	%	n	%
< 25	25	9.7%	15	6.6%	10	31.3%
26 - 30	38	14.7%	30	13.3%	8	25.0%
31 - 35	54	20.9%	46	20.4%	8	25.0%
36 - 40	55	21.3%	53	23.5%	2	6.3%
41 - 45	36	14.0%	35	15.5%	1	3.1%
46 - 50	22	8.5%	21	9.3%	1	3.1%
51 - 55	19	7.4%	18	8.0%	1	3.1%
> 55	8	3.1%	7	3.1%	1	3.1%
Left blank	1	0.4%	1	0.4%	0	0.0%
TOTAL	258		226		32	
Gender						
Female	94	36.4%	86	38.1%	8	25.0%
Male	164	63.6%	140	61.9%	24	75.0%
TOTAL	258		226		32	
Education						
High School	4	1.6%	0	0.0%	4	12.5%
Associate's	1	0.4%	0	0.0%	1	3.1%
Bachelor's	207	80.2%	187	82.7%	20	62.5%
Master's	46	17.8%	39	17.3%	7	21.9%
TOTAL	258		226		32	

Overall, the 258 IT professionals in the study ranged in age from 19 to 64 and the median age was 37. Over 75% of the IT professionals were at least 31 years of age, and 23% of the IT professionals were at least 45 years of age. The sampling frame was well educated with 98% having at minimum a bachelor's degree. Approximately 45% had attended formal education within the past five years. Females represented 36.4% of the sample, which is close to the national IT female workforce of 32.4% reported by ITAA (2004). ITAA (2005) reported that "The IT labor force is a highly skilled, highly educated population" (pg. 6). In 2004, 35% of the IT workforce was 45 years of age or older and the median age was 39 (ITAA, 2004), which are similar to the sample demographics.

ITAA indicated that as of 2004, 79 percent of the IT jobs were in non-IT organizations, whereas, 64 percent of the IT professionals responding to the survey worked in non-IT organizations. Approximately 30.8% of the respondents had worked in the IT profession for five years or less. While 58.9% of the respondents had worked in their current primary employment arrangement for five years or less, 38.8% of the respondents did not expect their current primary employment arrangement to last beyond five years and 38.4% left this question blank or responded that they did not know. Of the 53 respondents who responded that they expect their employment arrangement to last beyond 10 years, all but 3 were permanent full-time employees.

The respondents were asked to select one of the IT career field clusters based on the National Workforce Center for Emerging Technologies (NWCET) skill standards (ITAA, 2004). Table 5 presents the number and percentages of the 258 IT professionals participating in the survey by the ITAA career/job category. The “% in IT Workforce” represents the percentage of the IT workforce in the specific career/job category according to ITAA in 2004. Twenty-nine IT professionals did not place themselves in a specific career/job category; instead they indicated their job level (e.g., project manager), and placing these respondents in a career/job category was not possible.

The 258 IT professionals held a wide variety of job titles and were in all of the ITAA career field clusters, except technical writing, supporting a diverse and representative sampling comparable to the ITAA IT workforce. Using the ITAA IT workforce demographic data referenced throughout this section as a baseline for IT professional population comparisons, the IT professionals in the study sample were comparatively similar and appear to be representative of the IT workforce. Evaluation of the response rates, response/non-response demographics, sample sets for method bias, and sample demographics to the IT workforce demographics, including the career field clusters and job titles, provides plausible evidence to deduce that the sample obtained for the study is satisfactory for data analysis and generalizing about the IT population.

Table 5. Respondent career/job categories

	n	% of Sample Total	% in IT Workforce*
Managers			
Executives	4		
Jr. exec (directors)	5		
Project managers	9		
General managers	11		
SubTotal	29	11.24%	
Database Development & Administration			
SubTotal	25	9.69%	10%
Digital Media			
SubTotal	2	0.78%	7%
Enterprise Systems Analysis & Integration			
SubTotal	47	18.22%	11%
Network Design & Administration			
SubTotal	21	8.14%	7%
Programming/Software Engineering			
SubTotal	84	32.56%	20%
Technical Support			
SubTotal	35	13.57%	19%
Technical Writing			
SubTotal	0	0.0%	5%
Web Development & Administration			
SubTotal	5	1.94%	9%
Consulting			
SubTotal	8	3.10%	
IT Education			
SubTotal	2	0.78%	
TOTAL	258		
*Percentages in each career/job category according to ITAA (2004)			

The respondents were asked to select their primary employment category from a list of general BLS labels: permanent full-time, permanent part-time, independent contractor, contract company worker, on-call worker, temporary help agency worker, and other. Those responding as “other” were asked to describe their employment arrangement. Four respondents checked the “other” category; however, their descriptions of their employment arrangement were sufficiently detailed that the principal researcher

had no difficulty in identifying and placing the respondent into an appropriate and valid category.

IT professionals can be affiliated with more than one employment and/or work arrangement. For instance, IT professionals may be employed (and paid) by one organization, and work on projects internal to the same organization. Here, the “employing organization” and the “client organization” are the same. However, some IT professionals may be employed (and paid) by one organization, yet work on projects for another organization. Here, the “employing organization” and the “client organization” are two different organizations. The client organization is the main focus of this research study; therefore, respondents were also instructed to describe their primary employment arrangement as it relates to the “client organization,” for which they work on projects. This information was also used to confirm their understanding of the employment arrangement categories. Eighty-three percent of the IT professionals completing the survey were permanent full-time employees (Group 1), while 4.3% were permanent part-time (Group 2), 6.2% were independent contractors (Group 3), and 6.2% were contract company workers (Group 5) as shown in Table 6. None of the respondents considered themselves on-call workers (Group 4) or temporary help agency workers (Group 6).

Table 6. Employment arrangements

Employment Arrangement Category	Group	n	Percent
Permanent full-time	1	215	83.3%
Permanent part-time	2	11	4.3%
Independent contractor	3	16	6.2%
Contract company worker	5	16	6.2%
Total		258	

Prior to any data collection, a power analysis was conducted indicating a sample of 100 subjects would provide sufficient statistical power for an effect size of .80 and alpha cutoff of .05 as recommended by Cohen (1969) for the bi-variate analysis portion of this study. It was anticipated that the initial mailing list numbering 3075 would provide a sufficient number of responses to provide the power needed for the data analyses.

Measurement Instrument

In an effort to remain consistent with prior research, each variable in the research instrument was adapted from existing instruments with proven reliabilities, whenever possible. Coefficient alpha (Cronbach, 1951), the standard measure of internal consistency, was used to confirm all scale reliabilities. Nunnally and Bernstein's (1994) recommendation of an alpha of at least .70 was adopted to demonstrate internal consistency. Confirmatory factor analysis was used to assess the construct validity of the measurement instrument. It was anticipated that adapting established measures of constructs would facilitate comparable reliability coefficients from prior research, as well as comparable reliability coefficients from the pilot study. A summary of the constructs, including the source and reliability of the measures (Cronbach's alpha) used in the instrument is presented in Table 7 at the end of the Measurement Instrument Section. Any scales adopted that did not have end choice points of 1-6 were changed to 1-6. This enabled consistent end choice points throughout the measurement instrument and attempted to minimize social desirability bias (Crowne and Marlow 1964) by forcing a non-neutral choice (Spector, 1992). Table 8 follows Table 7 and is a summary of the constructs, whose items were developed for this study.

Employment Arrangements and Characteristics

Labels to categorize respondents into specific employment arrangements were obtained from the Bureau of Labor (2001). The arrangements are permanent employment (full-time), permanent employment (part-time), independent contractor, on-call worker, contract company worker, and temporary help agency worker. An "other" arrangement category was offered if the respondent was not able to choose among the pre-determined arrangement. The respondent was then asked to describe their particular employment arrangement. Research has shown that employment customs, practices, and definitions vary within an industry or across industries (Sherer, 1996); therefore, respondents were also asked to restate their primary employment arrangement in their own words and describe the organization that was the basis for answering the questions as they related to the "client organization." This individually written definition enabled a manipulation

check to confirm that the primary employment arrangement category chosen matched their restatement of their primary employment arrangement.

The employment arrangement characteristic statements were developed from a review of the organizational behavior, management, and labor literature. Works by Polivka and Nardone (1989) and Pfeffer and Baron (1988) provided the initial conceptualization of the employment arrangement characteristics' domain under consideration. The respondent was asked to indicate the extent that the client organization provides each of the 21 employment arrangement characteristics using a six-point scale with response choices of 1 (not at all) to 6 (to a very large extent).

Psychological Contract

The dimensional approach has not received as much empirical interest as the content and evaluation approaches have received, yet this method seems the most appropriate to use when investigating multiple employment arrangements. There are eight psychological contract dimensions conceptually addressed in McLean Parks et al. (1998): stability, scope, tangibility, time frame, particularism, focus, volition, and multiple agency, which were all addressed in this study. Measurement items for four of the dimensions (stability, scope, tangibility, and time frame) were developed and empirically tested by Sels et al. (2004) and were adopted for this study. Sels et al. (2004) used a five-point scale with response choices of 1 (entirely disagree) to 5 (entirely agree) to measure all items relating to the psychological contract. Measurement items for two of the dimensions, particularism and focus, were developed for this study. The dimension of volition was addressed by comparing two questions in the survey; however, no hypotheses were developed for volition. Multiple agency refers to whether the IT professional is affiliated with more than one employment and/or work arrangement. In this study, the question as to multiple agency of the psychological contract was addressed by focusing solely on the IT professional's "client organization."

Stability Dimension. The stability dimension assesses the extent the psychological contract is constant or static opposed to dynamic and evolving (McLean Parks et al., 1998). This dimension to the psychological contract was measured using three items from Sels et al. (2004), which had a Cronbach's alpha of .70.

Scope Dimension. The scope dimension assesses the extent of the boundary between an individual's employment relationship and their personal life (McLean Parks et al., 1998). This dimension to the psychological contract was measured using eight items from Sels et al. (2004), which had a Cronbach's alpha of .80.

Tangibility Dimension. The tangibility dimension assesses the degree of understanding of the terms and expectations of the employment relationship within the context of the psychological contract (McLean Parks et al., 1998). This dimension to the psychological contract was measured using seven items from Sels et al. (2004), which had a Cronbach's alpha of .82.

Time Frame Dimension. The time frame dimension assesses the perceived duration and precision of the employment arrangement (McLean Parks et al., 1998). This dimension to the psychological contract was measured using eight items from Sels et al. (2004), which had a Cronbach's alpha of .79.

Particularism Dimension. The particularism dimension assesses the extent that the individual perceives the resources exchanged are unique (McLean Parks et al., 1998). Using the domain definition from McLean Parks et al. (1998), four items were developed to measure and operationalize the particularism dimension.

Focus Dimension. The focus dimension assesses the extent that the psychological contract has a socio-emotional concern versus economic emphasis (McLean Parks et al., 1998). Using the domain definition from McLean Parks et al. (1998), five items were developed to measure and operationalize the focus dimension.

Volition Dimension. The volition dimension assesses the degree that individuals believe they have a choice in their particular employment arrangement. Research focusing on alternative employment arrangements has surveyed respondents as to their *preferred work status* (Morrow et al., 1994; Stamper & Van Dyne, 2001). In Van Dyne and Ang (1998), it was inferred the contingent work status to be voluntary. With the volatility of the IT workforce, voluntary work status cannot be inferred. Volition is believed to moderate between the perceived psychological contract and the behaviors of the individual (McLean Parks et al., 1998). Consequently, IT professionals were asked to specify their preferred employment arrangement. This information was then compared to

their current employment arrangement, thus providing an indication as to whether their current arrangement was voluntary.

The respondent's perceptions regarding "the extent of their client organization's obligations," as well as for the respondent's perceptions regarding "the extent of fulfillment of their client organization's obligations," were obtained from the same psychological contract items. Items for the client organization's obligations, as well as items for fulfillment of the client obligation's obligations, were measured on a six-point Likert scale with response choices of 1 (not at all) to 6 (to a very large extent).

Organizational Citizenship Behavior

The initial concept of Organ's (1988) OCB framework evolves around a "helping hand" (pg. 2-3). Organ's concept is that the help is not because of some aspect of their job description, but that the act is spontaneous, that nothing will come of the act from any formal reward system, and that the help will contribute, even if in some small way, to a group or the organization. The dimensions of OCB (Helping, Loyalty, Advocacy Participation, Functional Participation, and Obedience) were measured using 25 items adapted from Coyle-Shapiro (2002) using a five-point Likert scale to indicate the extent to which the behavior was typical of their behavior at work. To remain consistent throughout the instrument, a six-point Likert scale with end choice points ranging from 1 (not at all) to 6 (very large extent) was used to measure the dimensions of OCB.

Helping Dimension. The helping dimension assesses the extent that the individual offers discretionary actions to other individuals or a group. This dimension to OCB was measured using five items on a six-point Likert scale, and is an adaptation of the Coyle-Shapiro (2002) instrument, which was developed by C.A. Smith et al. (1983). Coyle-Shapiro's (2002) scale had a demonstrated reliability of $\alpha = .80$.

Loyalty Dimension. The loyalty dimension assesses the extent that the individual shows loyalty to the organization. This dimension to OCB was measured using three items on a six-point Likert scale, and is an adaptation of the Coyle-Shapiro (2002) instrument, which was developed by Van Dyne et al. (1994). Coyle-Shapiro's (2002) scale had a demonstrated reliability of $\alpha = .79$.

Advocacy Participation Dimension. The advocacy participation dimension assesses the extent that the individual speaks out, is supportive, etc. for the benefit of the organization. This dimension of OCB was measured using six items on a six-point Likert scale, and is an adaptation of the Coyle-Shapiro (2002) instrument, which was developed by Van Dyne et al. (1994). Coyle-Shapiro's (2002) scale had a demonstrated reliability of $\alpha = .81$.

Functional Participation Dimension. The functional participation dimension assesses the extent that the individual has a personal focus to the job, yet contributes to the organization. This dimension of OCB was measured using seven items on a six-point Likert scale, and is an adaptation of the Coyle-Shapiro (2002) instrument, which was developed by Van Dyne et al. (1994). Coyle-Shapiro's (2002) scale had a demonstrated reliability of $\alpha = .80$.

Obedience Dimension. The obedience dimension assesses the extent that the individual complies with the work rules. This dimension of OCB was measured using four items on a six-point Likert scale, and is an adaptation of the Coyle-Shapiro (2002) instrument, which was developed by Van Dyne et al. (1994). Coyle-Shapiro's (2002) scale had a weak demonstrated reliability of $\alpha = .63$.

Innovative Work Behavior

The nine-item innovative work behavior scale used in this study and developed by Janssen (2000) was an extension from Scott and Bruce's (1994) six-item innovative behavior scale. The nine-item scale comprises Kanter's (1988) three stages to innovation: idea generation, idea promotion, and idea realization. Three items define each stage. Janssen (2000) found high inter-correlations between the three stages, and consequently summed and averaged the nine items to create an overall scale of innovative work behavior. The overall innovative work behavior scale had a previous demonstrated reliability of $\alpha = 0.95$. Janssen (2000) used a seven-point scale ranging from 1 (never) to 7 (always). Again, to remain consistent throughout the measurement instrument, a six-point scale with end choice points of 1 (never) to 6 (always) was used.

Job Satisfaction

Organ and Ryan (1995) warned of potential problems of common method variance when using self-reports and express concern with self-report measurements of citizenship behaviors. They indicated that respondents, who may be dissatisfied with their job for some reason, may inflate their actual citizenship behavior responses. For purposes of this study, job satisfaction was not in the research model, but the respondent's level of satisfaction was measured to provide an indication of their job satisfaction, as well as used to evaluate potential negative correlation with self-reported OCB. The nature of work facet of Spector's (1985) Job Satisfaction Survey was used to measure job satisfaction. The overall nature of work satisfaction scale had a previous demonstrated reliability of $\alpha = 0.75$. Job satisfaction was measured using four items on a six-point Likert scale with response choices ranging from 1 (disagree strongly) to 6 (agree strongly).

Control Variables

Behavioral and psychological researchers control for certain demographic characteristics as they have been linked to outcome behaviors. Tenure is offered as a possible moderator between the antecedents and OCB to account for unexplained variance in correlations; and some researchers believe that forms of OCB may be a function of tenure (Organ and Ryan 1995). Gender is also offered as a potential moderator following Organ and Ryan's (1995) argument that gender might be a predictor of OCB, considering the beliefs that females may perform more aspects of OCB (e.g., altruism and courtesy factors). Stamper and Van Dyne (2001) found age, gender, and organizational tenure related to work status. Therefore, three variables were collected to be control variables in the analysis: age, gender, and tenure in current employment arrangement.

Table 7. Instrument measures, source, and source reliabilities

Construct	Measure Assesses	Measure/ Source	Sample Item	Source Reliability
Stability (of psychological contract)	Extent the psychological contract is constant or static opposed to dynamic and evolving.	Three items. (Sels et al. 2004)	“Are flexible in applying agreements.”	$\alpha = .70$
Scope (of psychological contract)	Extent of the boundary between an individual’s employment relationship and personal life.	Eight items. (Sels et al. 2004)	“Appreciate me for what I do and for who I am.”	$\alpha = .80$
Tangibility (of psychological contract)	Extent of understanding of the terms and expectations of the employment arrangement within the context of the psychological contract.	Seven items. (Sels et al. 2004)	“Make specific agreements regarding my work.”	$\alpha = .82$
Time Frame (of psychological contract)	Extent of understanding the perceived duration and precision of the employment arrangement.	Eight items. (Sels et al. 2004)	“Make a commitment to me for a long time.”	$\alpha = .79$
Helping (of OCB)	Extent that individual offers discretionary actions to individual or group.	Five items. (Coyle-Shapiro 2002)	“I help others who have been absent.”	$\alpha = .80$
Loyalty (of OCB)	Extent that individual shows loyalty to organization.	Three items. (Coyle-Shapiro 2002)	“I tell outsiders that the organization is a good place to work.”	$\alpha = .79$
Advocacy Participation (of OCB)	Extent that individual speak out, be supportive, etc. for benefit of organization.	Six items. (Coyle-Shapiro 2002)	“I share ideas for new projects or improvements widely.”	$\alpha = .81$
Functional Participation (of OCB)	Extent that individual has personal focus, yet contributes to organization.	Seven items. (Coyle-Shapiro 2002)	“I only attend work-related meetings if required by the job.”	$\alpha = .80$
Obedience (of OCB)	Extent that the individual complies with work rules.	Four items. (Coyle-Shapiro 2002)	“I follow work rules and instructions with extreme care.”	$\alpha = .63$
Innovative Work Behavior	Extent that the individual performs innovative actions in the workplace.	Nine items. (Janssen 2000)	“I create new ideas for difficult issues.”	$\alpha = .95$
Job Satisfaction	The extent that the individual is satisfied with the job - nature of work.	Four items. (Spector 1985)	“I like doing the things I do at work.”	$\alpha = .78$

Table 8. Instrument measures developed for the study

Construct	Measure Assesses	Measure/ Source	Sample Item	Reliability
Particularism (of psychological contract)	Extent that the individual perceives the resources exchanged are unique.	Four items. Developed from domain definition of McLean Parks et al. (1998)	“Recognize my skills as important.”	None
Focus (of psychological contract)	Extent that the psychological contract has socio-emotional concern versus economic emphasis.	Five items. Developed from domain definition of McLean Parks et al. (1998)	“Provide any and all materials necessary to do the job.”	None
Volition (of psychological contract)	Extent that individuals believe they have a choice in their particular employment arrangement	One item. (Morrow et al. 1994; Stamper & Van Dyne 2001)	Response to the question “Which employment arrangement would you prefer to work?”	None

Pilot Study

Prior to the main study, the measurement instrument was pre-tested using academic and practitioner domain experts. The pre-test experts were asked to ensure readability, identify threatening or ambiguous measurement items, and corroborate content validity.

A pilot test was then executed to provide preliminary indication of the reliability and validity of the adapted scales in the measurement instrument prior to administering to main study sample. The instrument was administered to University of South Florida undergraduate students, who are working professionals and some of whom are working IT professionals. The pilot study version of the measurement instrument is at Appendix 1.

One purpose for a pilot study is to identify the length of time it takes the respondents to complete the measurement instrument. The instrument should not be so long that the respondent loses interest or fails to answer all questions. Respondents required approximately 28 minutes to complete the pilot measurement instrument. All items were retained for the main study survey, as removal of a few items would have made no significant improvement to the anticipated time length required to complete the

survey. Also, because of the pilot sample size, removal of any items may have been premature.

SPSS, Version 13.0, was used to assess normality of the data, obtain descriptive statistics and scale reliabilities, and conduct factor analyses for data reduction and necessary statistical methods to address research questions and hypotheses. “Reliability if item deleted” and “item to total correlation” methods were used to assess reliability and reduce the number of items in individual constructs. All scale reliabilities were assessed using Cronbach’s alpha. Table 9 reports the reliabilities of the constructs and item numbers retained in the constructs. Constructs annotated with asterisks factor loaded with two items, not the preferred minimum of three items, while still maintaining a Cronbach’s alpha of at least .70. Because the pilot n = 48 did not provide the minimally adequate sample size needed to conduct viable factor analyses as recommended by Hatcher (1994), the factor analyses results were cautiously evaluated.

Table 9. Reliability of pilot study scales

Construct	Item Numbers	Pilot Cronbach’s α
Organizations Obligations toward:		
Scope	13, 14, 17, 25, 32	0.86
Stability*	18, 20	0.82
Tangibility	7, 9, 10, 12	0.89
Time Frame	2-4	0.80
Particularism	27, 28, 30	0.89
Focus*	34, 35	0.90
Organizations’ Fulfillment of Obligations toward:		
Scope	14-17	0.93
Stability*	18, 20	0.84
Tangibility	11, 12	0.77
Time Frame	1, 2, 4	0.85
Particularism*	29, 30	0.86
Focus	5, 10, 31, 33	0.85
Organizational Citizenship Behaviors:		
Helping	14-17	0.85
Loyalty	1-3	0.94
Advocacy Participation	9-11	0.83
Functional Participation	19-21	0.87
Obedience*	4, 5	0.72
Innovative Work Behavior	1-9	0.93
Job Satisfaction	3, 6, 9, 12	0.75

The pilot sample size was $n = 48$. The respondents ranged in age from 18 to 51 with a mean age of 26 $\frac{1}{2}$. Females represented 42% of the sample. Fifty-eight percent of the respondents were permanent full-time ($n = 28$), 29% were permanent part-time ($n = 14$), 11% were independent contractors ($n = 5$), and 2% were contract company workers ($n = 1$).

Pilot Data Analysis

The items retained for each of the constructs in Table 9 were summed and averaged to create new variables used in the pilot data analysis. MANOVA was conducted to test Hypothesis 1, which proposed that the differences in employment arrangement categories will explain differences in the employee's expectations of their employer's obligations in their psychological contract. Multivariate normality was assessed and considered adequate for analysis. The group, contract company worker, with $n = 1$ was omitted from the analysis. Three groups were analyzed, perm full-time ($n = 27$), perm part-time ($n = 14$), and independent contractor ($n = 5$), to ascertain the differences in the employee's expectations of their employer's obligations. The four multivariate omnibus tests were significant at $\alpha = .05$ with Wilks' Lambda at .044 and Roy's Largest Root at .04, signifying support for Hypothesis 1. Post hoc analyses using the Scheffe test, which has no sample size or design restrictions, revealed some significant differences between groups. The mean of the time frame dimension of perceived employer's obligations was lower for the independent contractor respondents than for the permanent full-time and permanent part-time respondents at $\alpha = .05$. The mean of the tangibility dimension of perceived employer's obligations was lower for the independent contractor respondents than for the permanent full-time respondents at $\alpha = .10$.

As posited in Hypothesis 2 and 3, potential differences in the IT professional's perceptions of the characteristics of their employment arrangement (EA) may explain differences in their expectations of their employer's obligations in their psychological contract. Content analysis of the items for the characteristics revealed three potential factors defining (1) benefits, (2) stability and continuity in the arrangement, and (3) job control or empowerment within the arrangement; thus, a confirmatory factor analysis

with principal components was conducted. Table 10 reflects the three-factor solution of the EA characteristics with corresponding factor loadings. Fairly clean factors were obtained with no potential cross-loadings over .379. Promax rotation method was used due to moderate correlations among the 21 items.

Table 10. Pilot three-factor solution of EA characteristics

Measurement Item	Factors		
	Benefits	Stability	Job Control
Overall job security	.061	.832	.010
An expectation that your job will last indefinitely, if you want it to	.072	.637	.148
Freedom to supervise your own work	-.347	.676	.180
Stability in your work schedule	.057	.729	-.153
A guarantee in the number of hours you will work from week to week	-.234	.845	-.101
Steady income	.137	.760	.006
Opportunities for pay raises	.224	.400	.379
An expectation as to the limits of your employment duration	.076	.221	.461
Opportunities for job promotions	.241	.076	.703
Opportunities for professional development activities	.250	-.112	.849
Opportunities for formal on-the-job training	.208	.146	.733
Control over your own work schedule/number of hours you work	-.299	-.067	.586
The flexibility to work from a location other than the company office	-.223	-.066	.702
Flexibility in your work hours	-.301	-.008	.748
Access to benefits	.709	.306	-.124
Access to retirement plan	.970	-.097	-.106
Access to tuition reimbursement	.885	-.316	.180
Access to a good overall compensation package	.786	.117	-.036
Access to health insurance	.830	.153	-.191
Frequent job performance evaluations	.876	-.244	.109
A satisfactory overall compensation package	.767	.080	-.035
Eigenvalue	7.3	3.6	2.2
Variance Explained	34.8%	16.9%	10.6%

Rotation Method: Promax with Kaiser Normalization. Rotation converged in 4 iterations.

Reliabilities were assessed revealing Cronbach's alpha = .917 for seven items of Factor 1 (benefits), .83 for seven items of Factor 2 (stability), and .806 for seven items of Factor 3 (job control). The sample size of n = 47 was insufficient to analyze H2 and H3

as depicted in the model; consequently, separate multiple regression analyses were conducted for each of the six variables, which represent dimensions of perceived employer's obligations of the psychological contract as the dependent variable(s). All three major employment arrangement characteristics were entered as main effects independent variables with no interaction. Sample size was too small to consider interaction effects. The dependent variables, time frame and tangibility, were significant at $\alpha = .01$, and stability and particularism were significant at $\alpha = .10$. Table 11 reflects the R^2 , Adjusted R^2 , and coefficients for the significant results.

Table 11. Pilot significant regression results of Hypothesis 2

DV = Time frame: $R^2 = .383$; Adjusted $R^2 = .340$, $F = 8.888$, $Sig. = .000^*$					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
Constant)	-.048	.883		-.054	.957
Benefits	.137	.125	.152	1.098	.278
Stability	.552	.203	.394	2.717	.009
Job Control	.325	.160	.257	2.029	.049

DV = Tangibility: $R^2 = .278$; Adjusted $R^2 = .227$, $F = 5.509$, $Sig. = .003^*$					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.386	.956		1.450	.154
Benefits	.372	.135	.413	2.752	.009
Stability	.164	.220	.117	.747	.459
Job Control	.169	.173	.134	.975	.335

DV = Stability: $R^2 = .157$; Adjusted $R^2 = .098$, $F = 2.675$, $Sig. = .059^{**}$					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.278	.967		2.356	.023
Benefits	.147	.137	.174	1.071	.290
Stability	-.021	.223	-.016	-.093	.926
Job Control	.403	.175	.340	2.299	.026

DV = Particularism: $R^2 = .143$; Adjusted $R^2 = .083$, $F = 2.394$, $Sig. = .081^{**}$					
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.888	.983		2.939	.005
Benefits	.032	.139	.038	.234	.816
Stability	-.053	.226	-.040	-.234	.816
Job Control	.458	.178	.384	2.571	.014

****Statistically significant at $\alpha = .10$; *Statistically significant at $\alpha = .01$.**

Hypothesis 4 posited higher perceptions of fulfillment of their employer's obligations are positively related to higher levels of the IT professional's OCB, while the alternative hypotheses 4a-e denote the specific dimensions of OCB. Multiple regression analysis was conducted for each of the five dimensions of OCB as the dependent variables using the six variables depicting fulfillment of their employer's obligations as the main effects independent variables. Again interaction of the independent variables was not considered due to the small pilot sample size. Dependent variables, loyalty and obedience, were significant at $\alpha = .01$, as shown in Table 12.

Table 12. Pilot significant regression results of Hypotheses 4a-e

DV = Loyalty: $R^2 = .416$; Adjusted $R^2 = .329$, $F = 4.757$, $\text{Sig.} = .001^*$

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.062	.818		1.299	.202
	TFFOBL1	.091	.176	.082	.516	.608
	TAFOBL1	.347	.183	.359	1.891	.066
	SCFOBL1	.638	.222	.589	2.874	.006
	STFOBL1	-.137	.237	-.136	-.579	.566
	PAFOBL1	-.005	.155	-.005	-.032	.975
	FOFOBL1	-.157	.148	-.174	-1.064	.294

DV = Obedience: $R^2 = .363$; Adjusted $R^2 = .268$, $F = 3.805$, $\text{Sig.} = .004^*$

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.247	.743		5.720	.000
	TFFOBL1	-.210	.160	-.217	-1.317	.195
	TAFOBL1	.082	.166	.098	.493	.625
	SCFOBL1	-.188	.202	-.200	-.934	.356
	STFOBL1	.056	.215	.064	.261	.795
	PAFOBL1	.598	.141	.645	4.258	.000
	FOFOBL1	-.209	.134	-.264	-1.552	.128

*Statistically significant at $\alpha = .01$.

Hypothesis 5 posited higher perceptions of fulfillment of their employer's obligations are positively related to higher levels of the IT professional's innovative work behavior. Multiple regression analysis was conducted using innovative work behavior as

the dependent variable and the six variables depicting fulfillment of their employer's obligations as the independent variables. The results were not significant at $\alpha = .10$.

Positively and negatively worded items were used in the survey, as recommended by Spector (1992) to minimize response bias tendencies, such as acquiescence. Yet, irregularities in the pilot study factor analyses were found with the negatively worded statements. Researchers have found reverse-scored OCB items load on different factors, and consequently have excluded those items from analyses (Organ & Konovsky, 1989). Researchers have also found irregularities in the factor analyses when only a few of the scale items are negatively worded with the items loading on different factors (Idaszak & Drasgow, 1987; Schmitt & Stults, 1985). Because of the potential problems in the data analysis, other researchers have changed the negatively worded statements to positively worded statements in an effort to negate this potential bias (Liden, Wayne, Kraimer, & Sparrowe, 2003; Morrison, 1994). These were issues during the pilot data analyses of the reliability coefficients and the item reduction procedures for some of the negatively worded items.

Problematic items were excluded from the pilot data analysis; however, none of the items were removed from the measurement instrument. The negatively worded items, except one, were retained for the main study survey to minimize response bias tendencies. One negatively worded statement in OCB-Obedience was changed to a positively worded statement after the pilot study. The statement, "I waste time while at work on personal matters." was changed to "I rarely waste time while at work on personal matters." No survey items were removed from the measurement instrument; however, minor refinements were made to three items to improve readability.

As expressed earlier, the pilot sample size was not sufficiently large to support viable factor analyses; therefore, the results were cautiously accepted. However, the significance of preliminary statistical analyses in the adjusted R^2 estimates of the regressions and the tests of the MANOVAs provided support for the theoretical concepts outlined. Specifically, that the employment arrangement of the IT professional affects the psychological contract, and the perceived fulfillment of the psychological contract affects organizational behaviors. Although some hypothesized relationships were not significant,

the pilot sample may not have been large enough to detect these relationships. Nevertheless, preliminary hypothesis testing of the pilot data did provide sufficient evidence to warrant progression to the main study data.

Main Study

The preponderance of participants in the main study completed an on-line survey located at the link <http://www.coba.usf.edu/departments/isds/grads/newton/AEAITPSTUDY.htm>². Those not completing the survey on-line completed a paper survey instrument. Respondents were not directly identifiable in the data analysis and the letter of invitation to participate assured them of confidentiality. A Study ID number was provided in the invitation to participate and the respondents were asked to input the study ID number in the survey. This ID number was used to ensure that those who responded did not receive a second invitation to participate. The letter (for the first mailing) inviting the individuals to participate is at Appendix 2. The postcard (for the second mailing) inviting the individuals to participate is at Appendix 3. The final version of the measurement instrument is at Appendix 4.

Self-report measures were the sole means of data collection. Although judged a limitation in this study, they are justifiably, immediate sources of information describing the nature and substance of their psychological contract (Rousseau & Tijoriwala, 1998) and their perceptions regarding the effects on their creativity (Amabile, 1983). Spector (1987) contends that the typical criticism in using self-report measures involving attitude and perception measures may not be factual. Organizational citizenship behavior studies have obtained ratings from a number of different sources (e.g., self, peers, and supervisors) in an effort to minimize mono-method bias; however, results have found the self-ratings of OCB are comparable to both peer and supervisor ratings (Rioux & Penner, 2001).

² This link has since been deactivated.

CHAPTER FIVE RESULTS

Chapter Five details the statistical data analyses and findings. First, the scale analysis, which included assessing reliability and validity, as well as the data reduction through factor analysis, is discussed. Second, the research components are addressed separately. The first research component was empirical – testing theory. Here the research hypotheses were tested using the multivariate techniques, multivariate analysis of variance (MANOVA), and regression analysis. The second research component was exploratory – theory building. Here MANOVA was used to answer the question as to the similarities and differences in the defining characteristics of the employment arrangements (EA) in which IT professionals find themselves. SPSS, Version 13.0, was used to assess normality of the data, obtain descriptive statistics and scale reliabilities, and conduct factor analyses for data reduction and necessary statistical methods to address the research questions and hypotheses.

Scale Analysis

Prior to any data analyses, data were examined assessing missing values, frequencies, distributions, skewness, and kurtosis. The kurtosis of three measurement variables (#17 of Employment Arrangement Characteristics Stability factor, and #4 and #18 of OCB Obedience and Helping factors) exceeded the recommended 2.58 maximum (Hair, Anderson, Tatham, & Black, 1998) at 3.901, 4.195, and 3.913. These three variables displayed a leptokurtic distributional shape around their means of 5.19, 5.29, and 5.20; however, these three variables were retained for the factor analyses and not omitted. Skewness and kurtosis for all remaining variables were within the recommended bounds. Further examination of the data did not present any initial concerns about Univariate normality assumptions and the data were deemed acceptable for further analysis. The reliability, validity and dimensionality of the measurement scales were determined through an iterative process using scale reliability and data reduction analysis

techniques and are elaborated on in the sub-sections detailing the operationalization of each construct.

Reliability

The internal-consistency reliability of all constructs was assessed with Cronbach's alpha using "reliability if item deleted" and "item to total correlation" methods. Ensuring unidimensionality of the constructs was essential and accomplished through factor analyses; then Cronbach's alphas were re-estimated. Table 17, located at the end of the *Data Reduction Through Factor Analysis* section, reports the reliabilities (Cronbach's alpha) obtained and item numbers retained in the measurement scales from the informal confirmatory factor analyses. Measurement scales annotated with asterisks factor loaded with two items, not the preferred minimum of three items. All reliabilities were above Nunnally and Bernstein's (1994) recommended acceptable level of at least .70, except OCB_Obedience at $\alpha = .61$.

Validity

Construct and discriminant validity were assessed through informal confirmatory factor analysis. The factor analyses results enable evaluation of the correspondence between the measurement items in the survey and the construct that is being measured, as well as evaluation that operationalization of any one construct is not similar to others (Pedhazur & Schmelkin, 1991; Trochim, 2001). The number of factors for multi-dimensional constructs was identified a priori according to theory and prior literature.

Data Reduction Through Factor Analysis

Principal component analysis was the extraction method used to perform the informal confirmatory factor analyses. Rotation method is typically determined by the level of inter-correlations among the measurement items and is expanded on in each subsection below. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was used to assess the appropriateness of the factor analysis with the understanding that the closer to 1, the better (Hair et al., 1998).

Psychological Contract

The six psychological contract dimensions of stability, scope, tangibility, time frame, focus, and particularism were measured through measurement items depicting the organization's obligations to the IT professional. Four of these dimensions, stability, scope, tangibility and time frame, were adapted from the measurement instrument of Sels et al. (2004). The dimensions, particularism and focus, were developed from the domain definitions by McLean Parks et al. (1998). All measurement items from the pilot study were in the main study instrument. Volition, another of the psychological contract dimensions, was measured through the response to the question "Which employment arrangement would you prefer to work?" If the IT professional's response matched their current employment arrangement, it was reasoned that their employment arrangement was of their choosing, and volition was coded "0". If the IT professional's response did not match their current employment arrangement, it was reasoned that another employment arrangement was preferred, and volition was coded "1."

Initial scale reliabilities were estimated for each of the six dimensions of the psychological contract and deemed acceptable. Eight measurement items were removed during this process to improve the reliability coefficients. The correlation matrix showed minimal to moderate inter-correlations among the remaining measurement items; therefore, the Promax rotation method was used in the factor analysis. Initial factor analysis for six a priori factors found the items for particularism factor loading with the Focus factor or cross loading with other factors. Consequently, the measurement items developed for the particularism dimension were removed from the intended analysis. This action removed the particularism dimension from subsequent hypothesis testing.

The following informal confirmatory factor analysis was conducted for five factors, stability, scope, tangibility, time frame, and focus. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was satisfactory at .920. The scree plot, depicted in Figure 5, visually supports the potential for five factors; however, only three factors had eigenvalues greater than one, the fifth factor at .943, and the sixth factor at .851. The five-factor solution accounted for 75.4% of the variance in the measurement items. Table 13 illustrates the satisfactory factor loadings from the structure matrix, eigenvalues, and

variance explained for each of the five a priori dimensions of psychological contract. Each dimension is addressed below.

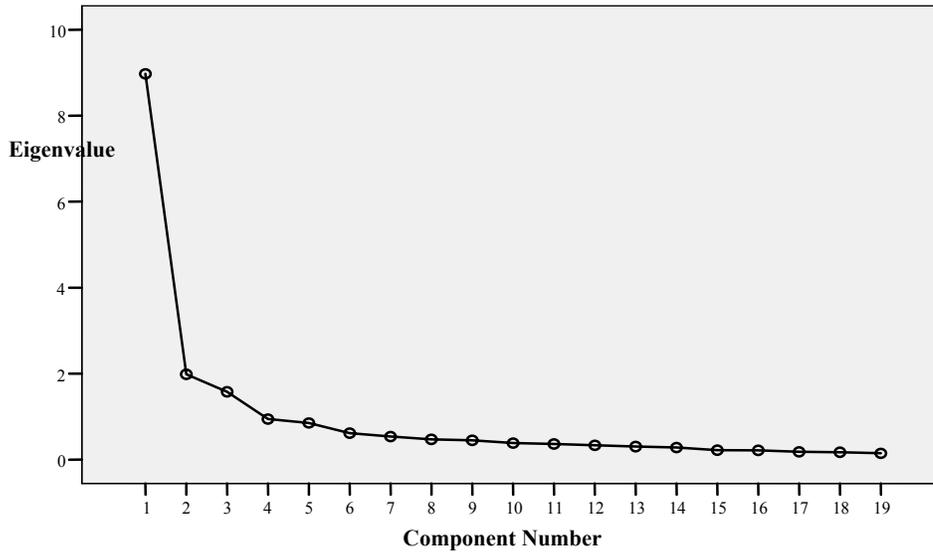


Figure 5. Scree plot of psychological contract measurement items

Time frame (OOBL_TF) was operationalized using 5 of the 8 time frame items on the survey instrument. Three time frame items “offer me opportunities for career development,” “be clear in outlining expectations,” and “give me plenty of notice” were removed during the scale reliability analysis. Demonstrated reliability of the 5-item scale was acceptable at $\alpha = .90$.

Scope (OOBL_Sc) was operationalized using 4 of the 8 scope items on the survey instrument. Four items “support me personally in difficult periods,” “support the defined job expectations,” “allow me to offer suggestions to work and organization,” and “allow me to keep work and personal life separate” were removed during the scale reliability analysis. Demonstrated reliability of the 4-item scale was acceptable at $\alpha = .92$.

Tangibility (OOBL_T) was operationalized using 4 of the 7 tangibility items on the survey instrument. Two items “put in writing our agreements about my work” and “make specific agreements regarding my work” were problematic, and thus was removed from analysis. One item “leave no room for misinterpretation of my obligations” cross-

loaded with particularism and focus, and thus was removed from analysis. Demonstrated reliability of the 4-item scale was acceptable at $\alpha = .88$.

Focus (OOBL_F) was operationalized using 4 of the 5 focus items on the survey instrument. One item “notify me of any available financial rewards” cross-loaded with tangibility, and thus removed from analysis. Demonstrated reliability of the 4-item scale was acceptable at $\alpha = .82$.

Stability (OOBL_St) was operationalized using 2 of the 3 stability items on the survey instrument. One stability item “be flexible in applying agreements” was a reverse-coded item and problematic, and was removed during the scale reliability analysis. Demonstrated reliability of the 2-item scale was acceptable at $\alpha = .79$.

Table 13. Psychological contract rotated structure matrix

Item	OOBL TF	OOBL Sc	OOBL T	OOBL F	OOBL St
Provide me with job security	.883	.445	.365	.376	.271
Make a commitment to me for a long time	.885	.477	.361	.374	.262
Won't immediately release me if things are going badly	.775	.501	.387	.281	.273
Offer me another job if my current job would disappear	.846	.537	.486	.436	.292
Do everything in their power to keep me on the job	.820	.623	.420	.406	.356
Be very clear about opportunities for advancement in this firm	.589	.470	.783	.629	.280
Specifically describe the performance appraisal criteria used in this firm	.469	.413	.841	.583	.269
Unambiguously describe my obligations within this firm	.331	.388	.893	.458	.396
Unambiguously describe my rights within this firm	.391	.443	.896	.543	.396
Appreciate me for what I do and who I am	.528	.923	.435	.508	.435
Consider not only the end result, but also my personal effort	.556	.879	.432	.498	.434
Treat me as a person, not as a number	.507	.909	.444	.537	.508
Allow me to be myself within this firm	.551	.858	.405	.487	.504
Stick to agreements despite changing circumstances	.355	.507	.464	.466	.892
Consider written or oral agreements as permanently valid	.346	.508	.346	.409	.891
Establish a respectful and trusting relationship immediately	.447	.660	.473	.743	.546
Provide development opportunities	.581	.553	.616	.800	.282
Provide any and all materials necessary to do the job	.281	.376	.465	.867	.304
Be truthful even when it may harm the relationship	.286	.519	.497	.770	.512
Eigenvalue	8.97	1.99	1.58	.94	.85
Variance Explained	47.23	10.45	8.30	4.97	4.48

Rotation Method: Promax with Kaiser Normalization. Rotation converged in 6 iterations.

Fulfillment of the Psychological Contract

The six psychological contract dimensions of stability, scope, tangibility, timeframe, focus, and particularism were also used to measure the level at which the IT professional perceived the organization as having fulfilled its obligations to them. The respondent's perceptions regarding their psychological contract and the fulfillment of their psychological contract were obtained from the same measurement items. The difference being that the respondent's perceptions were measured two times according to "the extent of their client organization's obligations," and "the extent of fulfillment of their client organization's obligations."

Initial scale reliabilities were estimated for each of the six dimensions of the fulfillment of the psychological contract and deemed acceptable. Eight measurement items were removed during this process to improve the reliability coefficients. The correlation matrix showed minimal to moderate inter-correlations among the remaining measurement items; therefore, the Promax rotation method was used in the factor analysis. Initial factor analysis for six a priori factors found the items for particularism factor loading with the scope factor or cross loading with other factors. Consequently, the measurement items developed for the particularism dimension were removed from the intended analysis. This action removed the particularism dimension from subsequent hypothesis testing.

The following informal confirmatory factor analysis was conducted for five factors, stability, scope, tangibility, time frame, and focus. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was satisfactory at .945. The scree plot, depicted in Figure 6, visually supports the potential for five factors; however, only three factors had eigenvalues greater than one, the fifth factor at .797, and the sixth factor at .721. The five-factor solution accounted for 76.0% of the variance in the measurement items. Table 14 illustrates the satisfactory factor loadings from the structure matrix, eigenvalues, and variance explained for each of the five a priori dimensions of fulfillment of the psychological contract. Each dimension is addressed below.

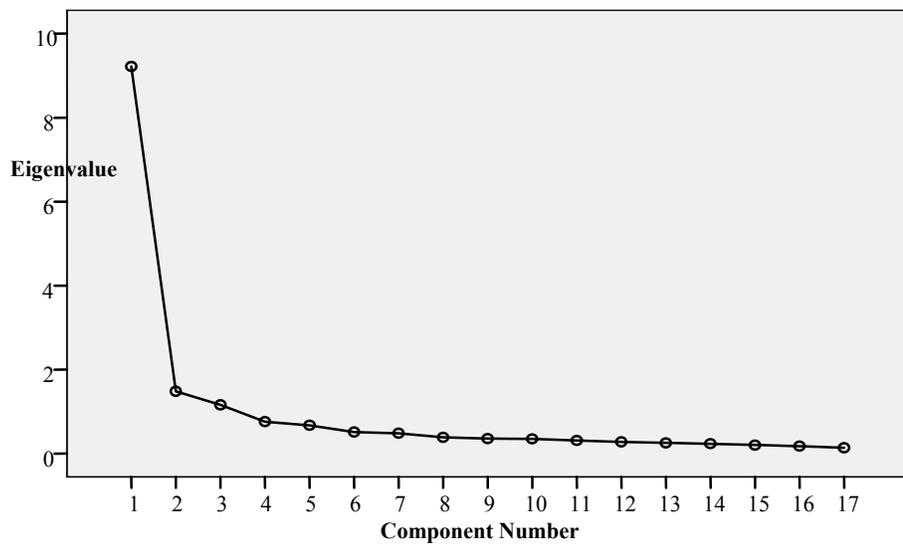


Figure 6. Scree plot of fulfillment of psychological contract measurement items

Table 14. Fulfillment of the psychological contract rotated structure matrix

Item	FOBL Sc	FOBL T	FOBL TF	FOBL F	FOBL St
Provide me with job security	.505	.507	.891	.517	.408
Make a commitment to me for a long time	.531	.453	.903	.487	.423
Won't immediately release me if things are going badly	.488	.544	.835	.488	.431
Do everything in their power to keep me on the job	.648	.547	.791	.515	.506
Be very clear about opportunities for advancement in this firm	.545	.793	.626	.657	.466
Specifically describe the performance appraisal criteria used in this firm	.475	.867	.492	.556	.394
Unambiguously describe my obligations within this firm	.502	.883	.451	.486	.430
Unambiguously describe my rights within this firm	.525	.857	.558	.612	.507
Appreciate me for what I do and who I am	.896	.589	.503	.600	.524
Consider not only the end result, but also my personal effort	.888	.507	.561	.573	.595
Treat me as a person, not as a number	.899	.435	.554	.630	.622
Allow me to be myself within this firm	.859	.431	.508	.534	.584
Support the defined job expectations	.758	.619	.396	.695	.578
Allow me to offer suggestions to work and organization	.785	.490	.522	.707	.571
Stick to agreements despite changing circumstances	.675	.551	.449	.582	.875
Consider written or oral agreements as permanently valid	.563	.386	.421	.465	.921
Establish a respectful and trusting relationship	.763	.500	.535	.798	.634
Provide development opportunities	.551	.671	.556	.796	.420
Provide any and all materials necessary to do the job	.553	.527	.435	.895	.450
Be truthful even when it may harm the relationship	.744	.492	.556	.775	.709
Eigenvalue	10.84	1.59	1.25	.797	.721
Variance Explained	54.2%	8.0%	6.3%	4.0%	3.6%

Rotation Method: Promax with Kaiser Normalization. Rotation converged in 6 iterations.

Scope (FOBL_Sc) was operationalized using 6 of the 8 scope items on the survey instrument. Two items “support me personally in difficult periods” and “allow me to keep work and personal life separate” were removed during the scale reliability analysis. Demonstrated reliability of the 6-item scale was acceptable at $\alpha = .93$.

Time frame (FOBL_TF) was operationalized using 4 of the 8 time frame items on the survey instrument. Three items “offer me another job if my current job would disappear,” “be clear in outlining expectations,” and “give me plenty of notice” were removed during scale reliability analysis. One item “offer me opportunities for career development” cross-loaded on another factor and was removed from analysis. Demonstrated reliability of the 4-item scale was acceptable at $\alpha = .88$.

Tangibility (FOBL_T) was operationalized using 4 of the 7 tangibility items on the survey instrument. One tangibility item “leave no room for misinterpretation of my obligations” was removed during scale reliability analysis. Two tangibility item “put in writing our agreements about my work” and “make specific agreements regarding my work” were problematic, did not load on the tangibility factor, and thus removed from analysis. Demonstrated reliability of the 4-item scale was acceptable at $\alpha = .88$.

Stability (FOBL_St) was operationalized using 2 of the 3 stability items on the survey instrument. One stability item “be flexible in applying agreements” was a reverse-coded item and problematic, and was, thus, removed from analysis. Demonstrated reliability of the 2-item scale was acceptable at $\alpha = .80$.

Focus (FOBL_F) was operationalized using 4 of the 5 focus items developed for the survey. One item “notify me of any available financial rewards” cross-loaded on other factors and thus removed from analysis. Demonstrated reliability of the 4-item scale was acceptable at $\alpha = .85$.

Organizational Citizenship Behavior

The five dimensions of organizational citizenship behavior (OCB), which were adapted from the measurement instrument of Coyle-Shapiro (2002), are advocacy participation, loyalty, functional participation, helping, and obedience. The correlation matrices showed minimal to moderate inter-correlations among the measurement items; therefore, the Promax rotation method was used. The Kaiser-Meyer-Olkin Measure of

Sampling Adequacy was satisfactory at .809. The scree plot indicated five factors as a plausible solution, and five factors had eigenvalues over 1. The five-factor solution accounted for 72.6% of the variance in the measurement items. Table 15 illustrates the satisfactory factor loadings, eigenvalues, and variance explained for each of the five OCB dimensions with applicable measurement items.

Table 15. OCB rotated structure matrix

Item	OCB_ AP	OCB_ Loy	OCB_ FP	OCB_ Hlp	OCB_ ObE
I tell outsiders that this organization is a good place to work.	.230	.904	.216	.023	.053
I defend the organization when other employees criticize it	.316	.869	.313	.111	-.023
I represent the organization favorably to outsiders	.176	.892	.273	.043	.083
I neglect aspects of job responsibilities *	.004	-.057	.129	.156	.778
Regardless of circumstance, I produce the highest quality of work	.341	.024	.562	.208	.708
I follow work rules and instructions with extreme care	.180	.144	.308	.220	.750
I make creative work-related suggestions to co-workers	.829	.255	.405	.213	.247
I make innovative suggestions to improve the functioning of the department	.854	.207	.468	.275	.153
I share ideas for new projects or improvements widely	.873	.250	.508	.382	.206
I encourage others to speak up at organizational meetings	.788	.186	.319	.195	-.007
I help others who have heavy workloads	.250	.000	.264	.894	.232
I help others who have been absent	.276	-.006	.317	.918	.209
I go out of my way to help colleagues with job-related problems	.305	.207	.420	.754	.216
I work beyond what is expected	.466	.221	.853	.388	.265
I exceed formal requirements of the job	.392	.193	.866	.257	.294
I go the 'extra mile' for the organization	.441	.417	.838	.322	.319
Eigenvalue	5.18	2.32	1.65	1.45	1.01
Variance Explained	32.4%	14.5%	10.3%	9.1%	6.3%

Rotation Method: Promax with Kaiser Normalization. Rotation converged in 5 iterations

*Reverse coded item

Advocacy participation (OCB_AP) was operationalized using 4 of the 6 Advocacy Participation items on the survey instrument. Two items of the OCB_AP scale #8 and #13 were removed during scale reliability analysis. Both items also failed to load satisfactorily on OCB_AP cross-loading with other factors. Demonstrated reliability of the 4-item scale was acceptable at $\alpha = .84$.

Helping (OCB_Hlp) was operationalized using 3 of the 5 helping items on the survey instrument. Two items of the OCB_Hlp scale #17 and #18 were removed during scale reliability analysis. Item #18 “I try to avoid creating problems for others” also had a high kurtosis value, but had been retained for the scale reliability analysis. Demonstrated reliability of the 4-item scale was acceptable at $\alpha = .83$.

Loyalty (OCB_Loy) was operationalized using the 3 loyalty items on the survey instrument. Demonstrated reliability of the 3-item scale was acceptable at $\alpha = .87$.

Functional participation (OCB_FP) was operationalized using 3 of the 7 Functional Participation items on the survey instrument. Four items of the OCB_FP scale #22, #23, #24, and #25 were removed during scale reliability analysis. The four items “I only attend work-related meetings if required by the job,” “I participate in activities that are not required that help the image of the organization,” “I avoid extra duties and responsibilities at work,” and “I personally pursue additional training to improve job performance” also did not load sufficiently on any of the OCB_FP factor. Demonstrated reliability of the 3-item scale was acceptable at $\alpha = .83$.

Obedience (OCB_Obe) was operationalized using 3 of the 4 obedience items on the survey instrument. The item “I rarely waste time while at work on personal matters” was removed during scale reliability analysis. Demonstrated reliability of the 3-item scale was marginally acceptable at $\alpha = .61$.

Innovative Work Behavior

Innovative work behavior (IWB) was operationalized as one dimension with 8 of the 9 IWB items on the survey instrument. One item of the IWB scale #5 was removed during scale reliability analysis. Following prior research and pilot study results, informal confirmatory factor analysis was employed for one factor. The Promax rotation method was used as the inter-correlations among the eight variables were moderate. The Kaiser-

Meyer-Olkin Measure of Sampling Adequacy was satisfactory at .919. The scree plot supported one factor as a plausible solution with only one factor greater than one eigenvalue at 5.2; the one factor solution accounted for 64.9% of the variance in the measurement items. All factor loadings were greater than .745, the smallest loading. Demonstrated reliability of the scale was acceptable at $\alpha = .92$.

Employment Arrangement Characteristics

Identification of the characteristics surrounding the IT professional's employment arrangement through theory building was the second research component of this study and was exploratory in nature. Three dimensions of the employment arrangement (EA) characteristics were posited from the content analysis of the measurement items developed for this study. Even though pilot study results found three factors representing (1) benefits, (2) stability and continuity of the arrangement, and (3) job control or empowerment within the arrangement, these results were cautiously used as supporting evidence to proceed. As these characteristics of the employment arrangement were developed for this study, again the reliability, validity, and dimensionality of the measurement scales were determined through an iterative process using scale reliability and data reduction analysis techniques. Two characteristics, "an expectation as to the limits of your employment duration" and "freedom to supervise your work" were removed to improve reliabilities. Two characteristics, "opportunities for job promotions" and "steady income" cross-loaded on more than one factor, and, thus, were removed from further analysis.

The correlation matrices showed minimal to moderate inter-correlations among the measurement items; therefore, the Promax rotation method was used for the factor analysis. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was satisfactory at .854. Although the pilot study revealed a three-factor solution, the main study data scree plot indicated four factors as the plausible solution accounting for 71.3% of the variance in the measurement items. Forcing a three-factor solution accounted for 64.9% of the variance in the measurement items; however, the scree plot shown in Figure 7 illustrated a distinguishing break between three and four factors; therefore, a three-factor solution was operationalized as shown in Table 16. The table illustrates the satisfactory factor

loadings, eigenvalues, and variance explained for each of the three dimensions of EA characteristics with measurement items.

Benefits (EACc_B) was operationalized using 10 of the EA characteristics items on the survey instrument. Demonstrated reliability of the 10-item scale was acceptable at $\alpha = .92$.

Stability (and continuity of the arrangement) (EACc_S) was operationalized using 4 of the EA characteristics items on the survey instrument. Demonstrated reliability of the 4-item scale was acceptable at $\alpha = .81$.

Job control (or empowerment within the arrangement) (EACc_JC) was operationalized using 3 of the EA characteristics items on the survey instrument. Demonstrated reliability of the 3-item scale was acceptable at $\alpha = .79$.

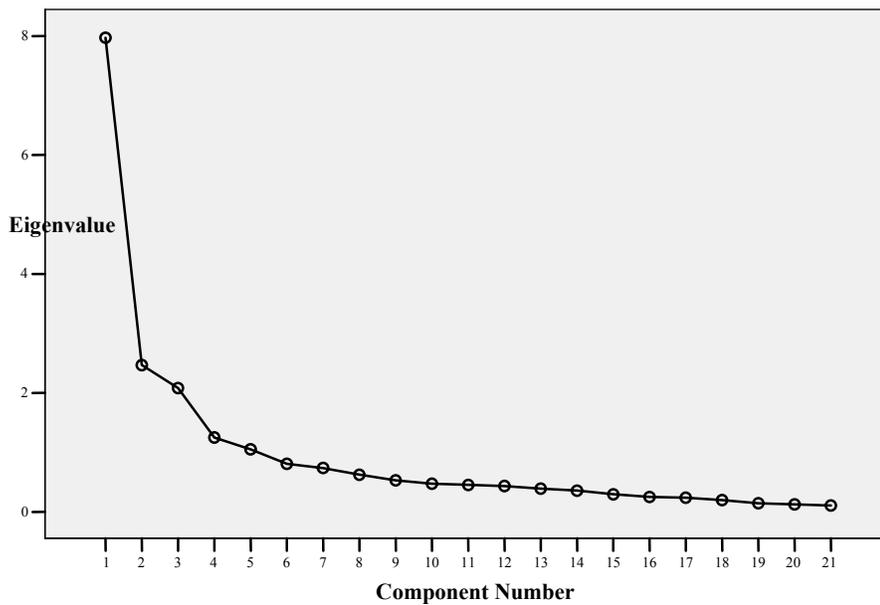


Figure 7. Scree plot of EA characteristics measurement items

Table 16. EA characteristics rotated structure matrix

Item	EACc B	EACc S	EACc JC
Overall job security	.458	.853	.071
An expectation that your job will last indefinitely, if you want it to	.363	.801	.091
Stability in your work schedule	.377	.794	.203
A guarantee in the number of hours you will work from week to week	.266	.717	-.039
Control over your own work schedule/number of hours you work	.092	.165	.829
The flexibility to work from a location other than the company office	.222	-.135	.758
Flexibility in your work hours	.104	.107	.888
Access to benefits	.860	.412	.071
Opportunities for professional development activities	.668	.394	.385
Opportunities for formal on-the-job training	.638	.375	.414
Access to retirement plan	.797	.328	-.008
Access to tuition reimbursement	.722	.257	.087
Access to a good overall compensation package	.826	.305	.310
Opportunities for pay raises	.734	.510	.317
Access to health insurance	.840	.412	-.036
Frequent job performance evaluations	.732	.387	.124
A satisfactory overall compensation package	.864	.320	.233
Eigenvalue	6.91	2.30	1.84
Variance Explained	40.6%	13.5%	10.8%

Rotation Method: Promax with Kaiser Normalization. Rotation converged in 5 iterations.

Job Satisfaction

Job satisfaction (JSAT) was operationalized as one dimension with the 3 of the 4 JSAT items on the survey instrument. Following prior research and pilot study results, informal confirmatory factor analysis with Promax rotation method was employed for one factor. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy was satisfactory at .720. The scree plot supported one factor as a plausible solution with only one factor greater than one eigenvalue at 2.33; the one factor solution accounted for 77.5% of the variance in the measurement items. All factor loadings were greater than .847, the smallest loading. Demonstrated reliability of the 3-item scale was acceptable at $\alpha = .85$.

Table 17. Reliability of main study constructs

Construct		Item Numbers Retained	Cronbach's Alpha
Organizations Obligations of:			
Scope	OOBL_Sc	14-17	.92
Stability	OOBL_St	18,20	.79
Tangibility	OOBL_T	9-12	.88
Time Frame	OOBL_TF	1,2,4-6	.90
Focus	OOBL_F	32-35	.82
Organizations' Fulfillment of Obligations			
Scope	FOBL_Sc	14-17,23,24	.93
Stability*	FOBL_St	18,20	.80
Tangibility	FOBL_T	9-12	.88
Time Frame	FOBL_TF	1,2,4,6	.88
Focus	FOBL_F	32-35	.85
Organizational Citizenship Behaviors:			
Advocacy Participation	OCB_AP	9-12	.84
Functional Participation	OCB_FP	19-21	.83
Helping	OCB_Hlp	14-16	.83
Loyalty	OCB_Loy	1-3	.87
Obedience	OCB_Obe	4,6,7	.61
Employment Arrangement Characteristics			
Benefits	EACc_B	4,7-10,15,18-21	.92
Job Control	EACc_JC	11,14,16	.79
Stability	EACc_S	1-2,12,13	.81
Innovative Work Behavior	IWB	1-4,6-9	.92
Job Satisfaction	JSAT	2-4	.85

Descriptive Statistics

The items retained for each particular construct from Table 17 were summed and averaged to create new variables to be used in the main study analysis. The descriptive statistics for the main study variables are depicted in Appendix 5. The statistical procedures, MANOVA and regression analysis, were performed to respond to the stated hypotheses: MANOVA for H1, H2, H3, and H4 and regression analysis for H4a-e and H5. MANOVA was used in the exploratory analysis of the employment arrangement characteristics. Prior to conducting the analyses, the appropriate assumptions were tested and assessed.

With each MANOVA, dependent variables must follow a multivariate normal distribution. Because there are no direct multivariate normality tests, univariate normality tests were performed. Initially, the individual variables were assessed for normality through the skewness and kurtosis values prior to the scale analysis. Of the three items that were found to exceed the 2.58 recommended maximum, two items, “steady income” #17 of employment arrangement characteristics, and “I try to avoid creating problems for others” #18 of OCB_helping were removed during the scale analysis. The third item, “I neglect aspects of job responsibilities,” a negatively worded item, was retained in OCB_obedience.

The normality of the main study variables was also assessed individually for each of the four employment arrangement category samples, i.e., Group 1 (permanent full-time with n=215), Group 2 (permanent part-time with n=11), Group 3 (independent contractor with n=16), and Group 5 (contract company worker with n=16). Neither the skewness nor kurtosis for any of the main study variables in any group exceeded beyond 2.789. The main study variables for the complete sample of n = 258 reflect acceptable skewness and kurtosis values as shown in Appendix 5. Satisfying univariate and bivariate normality does not guarantee multivariate normality; however, they are indicative of multivariate normality and slight departures are typically deemed insignificant (Hair et al., 1998). This provided sufficient evidence to be satisfied in meeting this assumption.

With each MANOVA, the variance-covariance matrices must be equal for all treatment groups; consequently, the Box’s Test of Equality of Covariance Matrices or the Levene’s Test of Equality of Error Variances is addressed with each MANOVA performed. The observations in this study were deemed independent, which is an assumption to be assessed when using MANOVA. Another issue to consider when using MANOVA is that the dependent variables should not exhibit high multicollinearity, which might represent redundancy among those dependent variables. With regression analysis, multicollinearity is an issue that must be addressed with respect to the independent variables used in the model. The inter-correlations for the main study variables are shown in Appendix 6. Evidence of multicollinearity among the applicable study variables will be addressed during each hypothesis testing analysis.

The existence of outliers and influential observations may affect both MANOVA and regression analysis results; consequently, data were scrutinized for their presence. Casewise diagnostics, Cook's D, leverage, and Rstudent revealed three observations (#28, #55, and #115) that appeared to be outliers or influential. Further examination of the three sets of data did not reveal sufficient deviations in responses to warrant removal from the analysis.

First Research Component – Tests of the Hypotheses

This section describes the results of the tests performed for each of the hypotheses. A summary of the findings follows. A detailed discussion of the findings and implications is presented in Chapter Six.

Hypothesis 1

Hypothesis 1 posited that the mean differences in employment arrangement categories will explain differences in the employee's expectations of their employer's obligations in their psychological contract. MANOVA is the appropriate statistical procedure to simultaneously address multiple dependent variables that have some inter-correlation. The correlations among the five psychological contract dimensions, OOBL_TF, OOBL_St, OOBL_SC, OOBL_T, and OOBL_F, ranged from .399 to .657. MANOVA also maintains control over the experiment-wide error rate.

Decisions were made to follow prior research recommendations and control for the effects that age, gender, and tenure in the current employment arrangement might have with respect to the outcome variables. MANCOVA, which considers covariates, would be more appropriate than MANOVA to account for differences that may be due to characteristics of respondents (Hair et al., 1998). However, an effective covariate should be correlated with the dependent variable, and not with the independent variables. The intended covariates, age, gender, and tenure were neither correlated with the independent variable, EAC, nor the dependent variables, OOBL_TF, OOBL_St, OOBL_SC, OOBL_T, and OOBL_F as evidenced in Appendix 6. The highest inter-correlation was -.111 for OOBL_FP and tenure. Therefore, age, gender, and tenure were not entered as covariates, but instead entered in the model as independent variables with EAC to help

explain the differences in the employee's expectations of their employer's obligations. MANOVA was used to test Hypothesis 1. Levene's Test of Equality of Error Variances for each of the six employer's obligation variables and the independent variables was insignificant at $\alpha = .05$.

The variable, EAC, represents the four groups analyzed, Group 1 (permanent full-time with $n=215$), Group 2 (permanent part-time with $n=11$), Group 3 (independent contractor with $n=16$), and Group 5 (contract company worker with $n=16$). The overall sample size and small group sizes for three of the groups gave indications that neither full factorial design, nor any type of interaction of the independent variables was possible. Consequently, MANOVA was conducted for the main effects of independent variables, EAC, age, gender, and tenure.

When analyzing more than two groups, MANOVA generates four omnibus test statistics. Therefore, of the four test statistics, Roy's Greatest Root was used, as it is the most powerful when the dependent variables are correlated and the least robust when multivariate normality assumption is violated. Roy's Greatest Root test statistic was significant for the dependent variables at $\alpha = .05$ cut-off with an F-Statistic = 5.132 and Sig. = .000, signifying support for Hypothesis 1. At $\alpha = .05$ cut-off, Roy's Greatest Root test statistic was significant for independent variables, EAC (F-Statistic = 10.101 and Sig. = .000), tenure (F-Statistic = 1.690 and Sig. = .016), and age (F-Statistic = 1.516 and Sig. = .035), and not significant for gender (F-Statistic = 1.176 and Sig. = .323). Univariate tests for the four EAC groups as the independent variables are presented in Table 18, where employer's obligations with respect to time frame, tangibility, and focus were significant at $\alpha = .05$. Univariate tests for tenure were not significant for any of the employer's obligations; therefore, no further analysis was realized for tenure.

Table 18. Univariate tests for MANOVA of Hypothesis 1

Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.
OOBL_T	Contrast	60.234	3	20.078	14.186	.000
	Error	242.023	171	1.415		
OOBL_TF	Contrast	23.226	3	7.742	4.714	.003
	Error	280.847	171	1.642		
OOBL_F	Contrast	8.081	3	2.694	2.723	.046
	Error	169.135	171	.989		
OOBL_St	Contrast	7.441	3	2.480	1.661	.177
	Error	255.308	171	1.493		
OOBL_Sc	Contrast	7.551	3	2.517	1.575	.197
	Error	273.347	171	1.599		

Post hoc analyses using the Scheffe test, which has no sample size or design restrictions, revealed significant differences between groups for dependent variables OOBL_TF, OOBL_T, and OOBL_F as reflected in Table 19.

Table 19. Post hoc analyses for EAC groups of Hypothesis 1

Dependent Variable	Groups	Mean Difference	Std Error	Sig.
OOBL_TF	1 – 3	1.111	.332	.013
	1 - 5	1.337	.332	.001
OOBL_T	1 – 3	1.036	.309	.012
	1 – 5	1.505	.309	.000
OOBL_F	1 – 5	.738	.258	.046

Plotting the means of the employer's obligations by EAC groups, shown in Figure 8, provides an indication to the variation of mean responses with OOBL_TF, OOBL_T, and OOBL_F having significant differences.

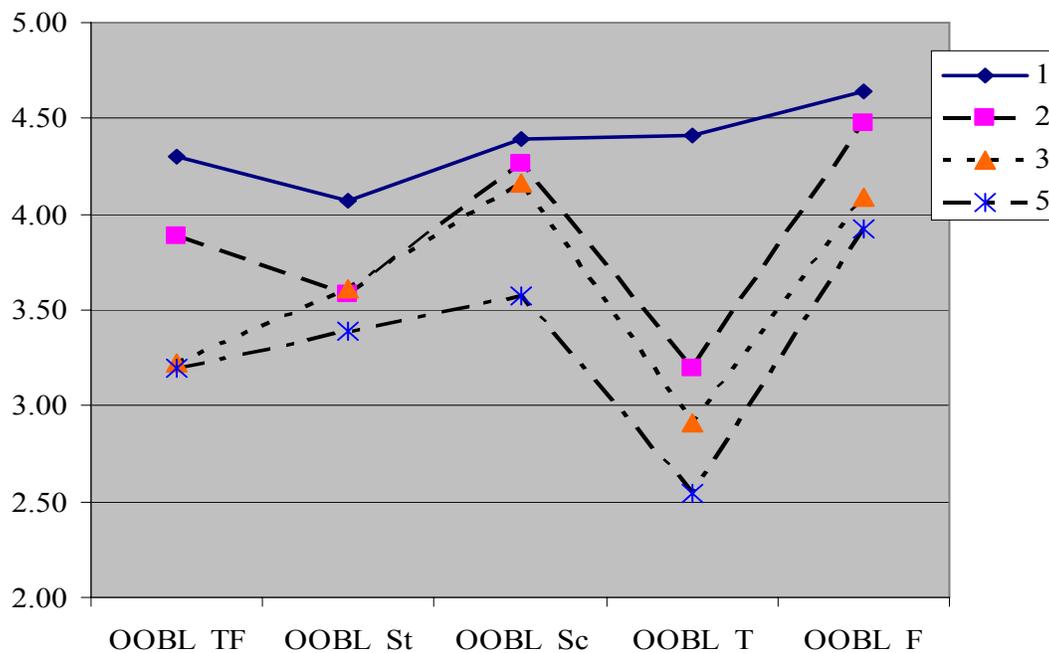


Figure 8. Profile of OOB variable means by EAC groups

Hypothesis 2

Hypothesis 2 posited that the differences in the employee’s perceptions of their employment arrangement characteristics will explain mean differences in the employee’s perceptions of their employers’ obligations in their psychological contract. To explain the differences in the employee’s perceptions of their employer’s obligations, the three employment arrangement (EA) characteristics variables, job control (EACc_JC), stability (EACc_S), and benefits (EACc_B), along with age, gender, and tenure, were analyzed as the independent variables. Error variance equality tests were not possible with the present model. Age, gender, and tenure were not significant, and were consequently removed from the model. It is plausible that there would be interaction among the independent variables, EACc_JC, EACc_S, and EACc_B; however, a full factorial design was not statistically possible; nor was two-way interaction. Therefore, interaction terms were removed from the model and the main effects of the three independent variables were analyzed with the dependent variables. Levene’s Test of Equality of Error Variances for each of the five employer’s obligation variables and the independent variables, EACc_JC, EACc_S, and EACc_B, was insignificant at $\alpha = .05$.

The four omnibus MANOVA test statistics were generated. As the correlations for dependent variables OOBL_TF, OOBL_P, OOBL_St, OOBL_SC, OOBL_T, and OOBL_F, ranged from .399 to .612, again Roy's Greatest Root was the test statistic chosen. Roy's Greatest Root test statistic was significant at $\alpha = .05$ cut-off for the dependent variables with an F-Statistic = 214.193 and Sig. = .000, signifying support for Hypothesis 2. At $\alpha = .05$ cut-off, Roy's Greatest Root test statistic was significant for all three independent variables, EACc_B (F-Statistic = 2.986 and Sig. = .000), EACc_S (F-Statistic = 2.546 and Sig. = .001), and EACc_JC (F-Statistic = 2.263 and Sig. = .006). Independent variable, EACc_S, was significant at $\alpha = .05$ with the dependent variable, OOBL_Sc (F-Statistic = 2.011, Sig. = .009). Independent variable, EACc_B, was significant at $\alpha = .05$ with the dependent variables, OOBL_T (F-Statistic = 2.867, Sig. = .000), OOBL_Sc (F-Statistic = 1.927, Sig. = .011), and OOBL_TF (F-Statistic = 1.914, Sig. = .045). Due to the insufficient number of cases in at least one grouping for each of the variables, no further analysis of separate univariate tests or post hoc analyses was possible for the EA characteristic variables.

Hypothesis 3

Hypothesis 3 posited that the differences in the objective category of employment arrangement and differences in the employee's perceptions of their employment arrangement characteristics will interact to explain mean differences in the employee's expectations of their employer's obligations in their psychological contract. MANOVA was used to explain the differences in the employee's expectations of their employer's obligations by the interaction in the differences in the objective category of employment arrangement and the three employment arrangement characteristic variables, EACc_JC, EACc_S, and EACc_B. As hypothesized, it is plausible that there would be some interaction among the four independent variables, EACc_JC, EACc_S, and EACc_B, and EAC groups.

From the previous testing of Hypothesis 2, neither a full factorial design, nor a complete two-way interaction was possible, so two-way interaction was placed in the model between each of the three characteristics variables, EACc_JC, EACc_S, and EACc_B, and EAC groups. Levene's Test of Equality of Error Variances for the five

employer's obligation variables and the independent variables with the interaction was insignificant at $\alpha = .05$.

The four omnibus MANOVA test statistics were generated. Roy's Greatest Root test statistic was significant at $\alpha = .05$ cut-off for the dependent variables with an F-Statistic = 208.219, and Sig. = .000, signifying support for Hypothesis 3. At $\alpha = .05$ cut-off, Roy's Greatest Root test statistic was significant for interaction term, EACc_JC*EAC (F-Statistic = 4.370 and Sig. = .000), and independent variables, EACc_B (F-Statistic = 3.438 and Sig. = .000), EACc_JC (F-Statistic = 2.304 and Sig. = .006), and EACc_S (F-Statistic = 2.167 and Sig. = .006), and not significant for EAC (F-Statistic = 1.236 and Sig. = .296), EACc_S*EAC (F-Statistic = .438 and Sig. = .822), and EACc_B*EAC (F-Statistic = .000 and Sig. = 1.000). Tests of Between-Subject Effects reflected significant effects at $\alpha = .05$ cutoff for dependent variables, OOBL_T and OOBL_Sc with EACc_B, and dependent variables, OOBL_T and OOBL_F with EACc_JC*EAC. No further analysis findings were realized for the MANOVA model.

Hypothesis 4

Hypothesis 4 theorizes that higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's organizational citizenship behaviors. Again, MANOVA was used in order to address the five organizational citizenship behaviors simultaneously as dependent variables in the model. The correlations for dependent variables, OCB_Loy, OCB_Obe, OCB_AdP, OCB_Hlp, OCB_FuP, ranged from .054 to .491. Age, gender, and tenure in the current employment arrangement were not entered as covariates in the MANOVA as their correlations with the dependent variables was minimal with -.206 being the greatest correlation between gender and OCB_obedience.

The employment arrangement of the IT professional may also moderate the fulfillment of the psychological contract; therefore, EAC, age, gender, and tenure were entered as independent variables, as well as five variables representing the level of fulfillment of their employer's obligations, FOBL_TF, FOBL_St, FOBL_SC, FOBL_T, and FOBL_F, to explain the levels of IT professional's organizational citizenship behaviors. The variable representing volition was included in the model as McLean Parks

et al. (1998) proposed that volition would moderate between the psychological contract and the outcomes of the worker. Volition was not correlated with the dependent variables, so was not treated as a covariate. The overall sample size and small group sizes gave indications that neither full factorial design, nor any type of interaction between the independent variables, was possible; therefore, only main effects of the variables were placed in the model. Overall multivariate results and Box's Test and Levene's Test could not be computed with the intended model; consequently, independent variables (age, gender, and tenure) were removed from the model in an effort to more parsimoniously assess the fulfillment of the psychological contract variables.

A second MANOVA was run with EAC and volition and five variables representing the level of fulfillment of their employer's obligations, FOBL_TF, FOBL_St, FOBL_SC, FOBL_T, and FOBL_F, to explain the levels of IT professional's organizational citizenship behaviors. Levene's Test of Equality of Error Variances was insignificant at $\alpha = .05$ for all dependent variables, except OCB_FuP. The test was not computed for OCB_FuP. The four omnibus MANOVA test statistics were generated and Roy's Greatest Root was chosen to evaluate the significance of the test. Roy's Greatest Root test statistic was significant at $\alpha = .05$ cut-off for the dependent variables with an F-Statistic = 792.273 and Sig. = .001, signifying support for Hypothesis 4. At $\alpha = .05$ cut-off, Roy's Greatest Root test statistic was significant for the five variables representing the level of fulfillment of their employer's obligations, FOBL_TF (F-Statistic 2.108 and Sig. = .005), FOBL_St (F-Statistic = 2.852 and Sig. = .004), FOBL_Sc (F-Statistic = 2.214 and Sig. = .001), FOBL_T (F-Statistic = 1.779 and Sig. = .030), and FOBL_F (F-Statistic = 1.993 and Sig. = .013), but not for variables EAC (F-Statistic = 2.189 and Sig. = .058) and Volition (F-Statistic = 2.063 and Sig. = .073).

Independent variable, FOBL_Sc, was significant at $\alpha = .05$ with the dependent variable, OCB_AdP (F-Statistic = 1.567, Sig. = .046). Independent variable, FOBL_St, was significant at $\alpha = .05$ with the dependent variables, OCB_Obe (F-Statistic = 2.403, Sig. = .014). Due to the insufficient number of cases in at least one grouping for each of the variables, no further analysis of separate univariate tests or post hoc analyses was possible for the EA characteristic variables.

Organizational citizenship behaviors are often regarded as a collection of deeds and researchers recommend they be aggregated, thus the reasoning for Hypothesis 4. However, other researchers consider OCB as a multi-dimensional construct and look at the significance of each dimension under study (Coyle-Shapiro, 2002). Consequently, it was proposed that the IT professionals' perceptions of their employers' obligations of the psychological contract would be positively related to higher levels of each of the dimensions of OCB under study: helping, loyalty, obedience, functional participation, and advocacy participation. The MANOVA test statistic results for Hypothesis 4 offer viability to this study's alternative to Hypothesis 4.

Alternative Hypotheses to H4

Hypotheses 4a-e posited that higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of each of the five IT professional's organizational citizenship behavior dimensions: helping, loyalty, obedience, functional participation, and advocacy participation. Regression analysis was conducted for each of the five dimensions of OCB as the dependent variable and five variables representing the level of fulfillment of their employer's obligations FOBL_TF, FOBL_St, FOBL_SC, FOBL_T, and FOBL_F. In line with Hypothesis 2, the employment arrangement of the IT professional and volition may moderate the fulfillment of the psychological contract; therefore, EAC and volition, as well as age, gender and tenure were also entered as independent variables to explain their relationship with each dimension of the IT professional's organizational citizenship behaviors.

Multicollinearity was assessed with respect to the independent variables used in the regression model. The correlations for the independent variables in the regression model, FOBL_Sc, FOBL_St, FOBL_TF, FOBL_T, FOBL_F, volition, EAC, age, gender, and tenure (CPEAlength) ranged from -.005 to .789. Therefore, a variance inflation factor (VIF) of > 10 was used as a gauge to detect multicollinearity in the model (Mendenhall & Sincich, 1996). Because of potential multicollinearity issues, no interaction was investigated in any of the models; however, the VIFs for the independent variables were

no greater than 3.363, which is within acceptable limits. The regression results are described under each hypothesis sub-heading.

Hypothesis 4a - Helping

The model using FOBL_Sc, FOBL_St, FOBL_TF, FOBL_T, FOBL_F, volition, EAC, age, gender, and CPEAlngth as the independent variables to explain the dependent variable, OCB_helping (Hlp), was not significant at $\alpha = .05$ cutoff with an F-Statistic of .625 and Sig. = .792, as shown in Table 20. The $R^2 = .03$ and the Adjusted $R^2 = -.015$. Hypothesis 4a was not supported.

Table 20. Regression summary of Hypothesis 4a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	6.925	10	.693	.625	.792
	Residual	262.516	237	1.108		
	Total	269.441	247			

Predictors: (Constant), Age, EAC, Gender, FOBL_Sc, CPEAlngth, Volition, FOBL_T, FOBL_St, FOBL_TF, FOBL_F; Dependent Variable: OCB_Hlp

Hypothesis 4b - Loyalty

The model using the same ten independent variables as Hypothesis 4a to explain the dependent variable, OCB_loyalty (Loy), was significant at $\alpha = .05$ with an F-Statistic of 23.296 and Sig. = .000, as shown in Table 21. Hypothesis 4b was supported. The $R^2 = .50$ and the Adjusted $R^2 = .47$. The regression coefficients in order of significance are presented in Table 22.

Table 21. Regression summary of Hypothesis 4b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	199.509	10	19.951	23.296	.000
	Residual	203.822	238	.856		
	Total	403.332	248			

Predictors: (Constant), Age, EAC, Gender, FOBL_Sc, CPEAlngth, Volition, FOBL_T, FOBL_St, FOBL_TF, FOBL_F; Dependent Variable: OCB_Loy

Table 22. Regression coefficients of Hypothesis 4b

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.255	.410		.620	.536
	FOBL_Sc	.462	.094	.415	4.899	.000
	FOBL_F	.291	.091	.269	3.179	.002
	FOBL_TF	.118	.066	.120	1.782	.076
	Volition	-.300	.176	-.095	-1.705	.089
	FOBL_T	-.110	.066	-.119	-1.680	.094
	Age	.011	.007	.082	1.562	.120
	CPEAlngth	.019	.016	.063	1.165	.245
	Gender	.134	.123	.051	1.090	.277
	EAC	.054	.064	.046	.853	.394
	FOBL_St	.058	.069	.056	.832	.406

Hypothesis 4c - Obedience

The model using same independent variables to explain the dependent variable, OCB_obedience (Obe), was significant at $\alpha = .05$ with an F-Statistic of 2.094 and Sig. = .026, as shown in Table 23. Hypothesis 4c was supported. The $R^2 = .08$ and the Adjusted $R^2 = .04$. The regression coefficients in order of significance are presented in Table 24.

Table 23. Regression summary of Hypothesis 4c

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	9.385	10	.938	2.094	.026
	Residual	106.670	238	.448		
	Total	116.054	248			

Predictors: (Constant), Age, EAC, Gender, FOBL_Sc, CPEAlngth, Volition, FOBL_T, FOBL_St, FOBL_TF, FOBL_F; Dependent Variable: OCB_Obe

Table 24. Regression coefficients of Hypothesis 4c

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	5.113	.297		17.224	.000
	Gender	-.314	.089	-.222	-3.528	.001
	FOBL_TF	-.089	.048	-.169	-1.857	.065
	CPEAlngth	-.018	.012	-.115	-1.560	.120
	FOBL_Sc	.058	.068	.098	.855	.394
	FOBL_St	.043	.050	.077	.852	.395
	FOBL_T	.033	.047	.067	.697	.486
	EAC	-.026	.046	-.041	-.564	.574
	Age	.002	.005	.023	.325	.745
	Volition	.022	.127	.013	.175	.861
	FOBL_F	.005	.066	.009	.076	.939

Hypothesis 4d – Functional Participation

The model using the same previous independent variables to explain the dependent variable, OCB_functional participation (FuP), was significant at $\alpha = .05$ with an F-Statistic of 2.110 and Sig. = .024, as shown in Table 25. Hypothesis 4d was supported. The $R^2 = .08$ and the Adjusted $R^2 = .043$. The regression coefficients in order of significance are presented in Table 26.

Table 25. Regression summary of Hypothesis 4d

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	13.467	10	1.347	2.110	.024
	Residual	151.890	238	.638		
	Total	165.357	248			

Predictors: (Constant), Age, EAC, Gender, FOBL_Sc, CPEAlngth, Volition, FOBL_T, FOBL_St, FOBL_TF, FOBL_F; Dependent Variable: OCB_FuP

Table 26. Regression coefficients of Hypothesis 4d

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.193	.354		11.838	.000
	FOBL_Sc	.203	.081	.285	2.497	.013
	EAC	-.128	.055	-.168	-2.323	.021
	Age	.008	.006	.088	1.243	.215
	Volition	.171	.152	.084	1.126	.261
	Gender	-.103	.106	-.061	-.973	.332
	CPEALngth	-.011	.014	-.057	-.778	.437
	FOBL_St	-.037	.060	-.056	-.626	.532
	FOBL_T	-.019	.057	-.032	-.336	.737
	FOBL_TF	-.015	.057	-.024	-.263	.793
	FOBL_F	.015	.079	.022	.194	.847

Hypothesis 4e – Advocacy Participation

The model using same previous independent variables to explain the dependent variable, OCB_advocacy participation (AdP), was significant at $\alpha = .05$ with an F-Statistic of 3.608 and Sig. = .000, as shown in Table 27. Hypothesis 4e was supported. The $R^2 = .13$ and the Adjusted $R^2 = .10$. The regression coefficients in order of significance are presented in Table 28.

Table 27. Regression summary of Hypothesis 4e

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	35.859	10	3.586	3.608	.000
	Residual	236.551	238	.994		
	Total	272.410	248			

Predictors: (Constant), Age, EAC, Gender, FOBL_Sc, CPEALngth, Volition, FOBL_T, FOBL_St, FOBL_TF, FOBL_F; Dependent Variable: OCB_AdP

Table 28. Regression coefficients of Hypothesis 4e

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.922	.442		6.610	.000
	FOBL_T	.176	.071	.231	2.492	.013
	FOBL_Sc	.243	.102	.265	2.387	.018
	FOBL_TF	-.127	.071	-.157	-1.782	.076
	Gender	.219	.133	.101	1.648	.101
	Volition	.295	.190	.113	1.553	.122
	FOBL_St	.108	.075	.126	1.443	.150
	FOBL_F	-.141	.099	-.158	-1.428	.155
	Age	.006	.008	.057	.830	.408
	CPEAlngth	.007	.017	.030	.415	.679
	EAC	-.022	.069	-.023	-.326	.745

Hypothesis 5

Hypothesis 5 theorizes that higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's innovative work behavior (IWB). Regression analysis was conducted using innovative work behavior as the dependent variable and the five variables depicting fulfillment of their employer's obligations, as well as volition, EAC, age, gender, and CPEAlngth as the independent variables.

The VIFs for the independent variables were no greater than 3.363, thus multicollinearity was not an issue. The model using the ten independent variables to explain the dependent variable, IWB, was significant at $\alpha = .05$ with an F-Statistic of 5.139 and Sig. = .000, signifying support for Hypothesis 5. The regression summary results are shown in Table 29. The $R^2 = .18$ and the Adjusted $R^2 = .14$. The regression coefficients in order of significance are presented in Table 30.

Table 29. Regression summary of Hypothesis 5

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.942	10	3.694	5.139	.000
	Residual	171.091	238	.719		
	Total	208.032	248			

Predictors: (Constant), Age, EAC, Gender, FOBL_Sc, CPEAlngth, Volition, FOBL_T, FOBL_St, FOBL_TF, FOBL_F; Dependent Variable: IWB

Table 30. Regression coefficients of Hypothesis 5

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.086	.376		8.210	.000
	FOBL_Sc	.262	.086	.327	3.032	.003
	Gender	.330	.113	.174	2.923	.004
	Volition	.415	.161	.182	2.571	.011
	FOBL_St	.143	.063	.192	2.248	.025
	FOBL_TF	-.097	.061	-.138	-1.600	.111
	EAC	-.080	.059	-.094	-1.374	.171
	FOBL_F	-.094	.084	-.121	-1.122	.263
	FOBL_T	.034	.060	.051	.559	.577
	Age	-.001	.007	-.006	-.087	.931
	CPEAlngth	.001	.015	.004	.051	.959

Table 31 presents the results of the study hypotheses, which indicates that nine of the ten hypotheses were supported. The second research component is addressed in the next section.

Table 31. Summary of hypotheses and results

Study Hypotheses	Results
<i>Hypothesis 1:</i> Differences in employment arrangement categories will explain mean differences in the employee's perceptions of their employer's obligations in their psychological contract.	Supported
<i>Hypothesis 2:</i> Differences in the employee's perceptions of their employment arrangement characteristics will explain mean differences in the employee's perceptions of their employers' obligations in their psychological contract.	Supported
<i>Hypothesis 3:</i> Differences in the objective category of the employment arrangement and differences in the employee's perceptions of their employment arrangement characteristics will interact to explain mean differences in the employee's perceptions of their employer's obligations in their psychological contract.	Supported
<i>Hypothesis 4:</i> Higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's OCB.	Supported
<i>Hypothesis 4a:</i> Higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's OCB dimension – helping.	Not Supported
<i>Hypothesis 4b:</i> Higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's OCB dimension – loyalty.	Supported
<i>Hypothesis 4c:</i> Higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's OCB dimension – obedience.	Supported
<i>Hypothesis 4d:</i> Higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's OCB dimension – functional participation.	Supported
<i>Hypothesis 4e:</i> Higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's OCB dimension – advocacy participation.	Supported
<i>Hypothesis 5:</i> Higher perceptions of fulfillment of their employer's obligations of the psychological contract will be positively related to higher levels of the IT professional's IWB.	Supported

Second Research Component – Exploring the Employment Arrangement Characteristics

The items developed to frame the nomological network surrounding the characteristics of an employment arrangement were scrutinized through content analysis and confirmatory factor analyses, as described in previous sections. Three factors were found to define the characteristics to an employment arrangement: (1) benefits, (2) stability and continuity in the arrangement, and (3) job control or empowerment within the arrangement. These three factors were used to respond to Hypotheses 1a and 1b, as described in the previous section. This section responds to the research question: What are the similarities and differences in the defining characteristics of the employment arrangements in which IT professionals are found?

A separate factor analysis for each employment arrangement should have been executed “when differing groups are expected in the sample” (Hair et al., 1998, pg. 100). However, the sample sizes for permanent part-time ($n = 11$), independent contractor ($n = 16$), and contract company worker ($n = 16$) were not sufficiently large to carry out separate factor analyses.

Differences in the characteristics of the employment arrangements of IT professionals can be explained through MANOVA, as it can address the three EA characteristics variables simultaneously as dependent variables in the model. The correlations among dependent variable's EACc_JC, EACc_S, and EACc_B ranged from .032 to .472. To explain the differences in the characteristics of the IT professional's employment arrangements, four groups were analyzed, Group 1 (permanent full-time with $n=215$), Group 2 (permanent part-time with $n=11$), Group 3 (independent contractor with $n=16$), and Group 5 (contract company worker with $n=16$). Box's Test of Equality of Covariance Matrices was not significant at $\alpha = .01$ with Box's $M = 33.347$ and Sig. = .034. Levene's Test of Equality of Error Variances for the independent variable, EAC, and the characteristics variables, EACc_JC and EACc_S, was not significant at $\alpha = .01$, but was significant at $\alpha = .01$ for EACc_B variable. EACc_B's F-Statistic = 5.536 and Sig. = .001. With the non-significance of Box's M Test and its reliance for strict

Multivariate normality, the assumption of variance-covariance equality was cautiously satisfied.

For this exploratory analysis, the alpha level of significance cutoff was $\alpha = .05$. With more than two groups, four omnibus MANOVA test statistics are generated, and all were significant at $\alpha = .05$. Roy's Greatest Root test statistic was significant for the dependent variables with an F-Statistic = 65.559, Sig. = .000, indicating that the dependent variables, EACc_JC, EACc_S, and EACc_B, vary across the four employment arrangement groups. Univariate tests for the four EAC groups as the independent variable are presented in Table 32, where the three EA characteristic variables were significant at $\alpha = .05$.

Table 32. Univariate tests for MANOVA - EA characteristics

Dependent Variable		Sum of Squares	df	Mean Square	F	Sig.
EACc_B	Contrast	144.550	3	48.183	51.519	.000
	Error	237.554	254	.935		
EACc_S	Contrast	34.395	3	11.465	9.246	.000
	Error	313.955	254	1.230		
EACc_JC	Contrast	24.595	3	8.198	4.640	.004
	Error	448.757	245	1.767		

Post hoc analyses using the Scheffe test, which has no sample size or design restrictions, revealed significant differences between groups for the dependent variables as reflected in Table 33.

Table 33. Post hoc analyses for EAC groups and EA characteristics

Dependent Variable	Groups	Mean Difference	Std Error	Sig.
EACc_JC	1 – 3	-1.188	.344	.001
	3 – 5	1.583	.470	.001
EACc_S	1 – 3	1.118	.289	.000
	1 – 5	1.103	.289	.000
	2 – 3	.908	.436	.038
	2 – 5	.892	.436	.042
EACc_B	1 – 2	2.188	.299	.000
	1 – 3	2.062	.251	.000
	1 – 5	1.812	.251	.000

Plotting the means of the EA characteristics variables by EAC groups, shown in Figure 9, provides an indication to the variation of mean responses, even though not all are significantly different. A detailed discussion of the findings and implications is offered in the next chapter.

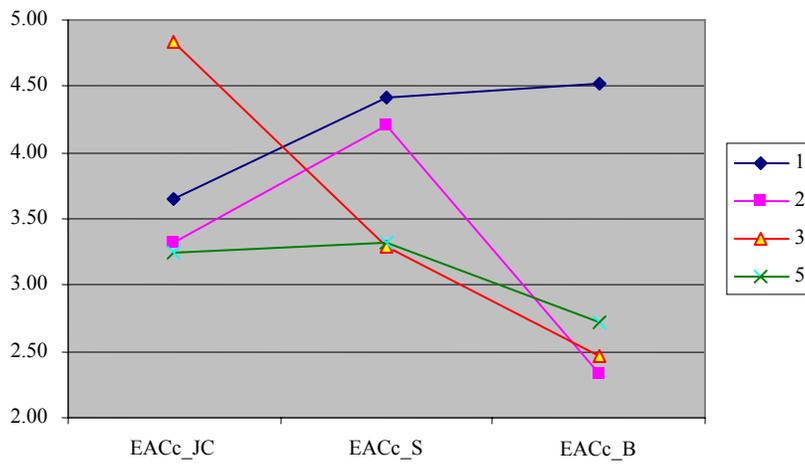


Figure 9. Profile of EA characteristics variable means by EAC groups

CHAPTER SIX DISCUSSION

This chapter provides a detailed discussion of the research findings and their implications to both theory and practitioners. This research study investigated the effect the employment arrangement had on the IT professional's psychological contract and the effects of the fulfillment of their psychological contract on their organizational citizenship behaviors and innovative work behavior. These findings address the first research component and hypotheses. There are no empirical studies to date that have brought these constructs together in this context to investigate the IT professional. The second research component was exploratory and investigated the similarities and differences in the defining characteristics of the IT professionals' employment arrangements. These scale analysis findings of the defining characteristics were incorporated in the empirical testing in the first research component.

Overview of Analysis and Significant Findings

This research provides empirical evidence to indicate that IT professionals from different employment arrangements have differences within their psychological contract, and aspects of their organizational citizenship and innovative work behaviors are determined by their perceptions regarding the level of fulfillment of their psychological contract. The exploratory analysis reveals that the employment arrangement characteristics for IT professionals are different depending upon their employment arrangement. The analysis and results are reviewed as follows: Hypotheses 1, 2 and 3 are discussed under the subheading psychological contract; Hypotheses 4 and 4a-e are discussed under the subheading organizational citizenship behavior; and Hypothesis 5 is discussed under the subheading innovative work behavior. The exploratory analysis of the defining characteristics of the IT professionals' employment arrangements is discussed under the subheading employment arrangement characteristics.

Prior to the statistical analyses of the hypotheses, scale analysis confirming reliability, validity, and unidimensionality of the constructs was in order. Use of adapted

scales from prior research and pilot study results enabled informal confirmatory factor analyses to a priori validate multi-dimensional constructs. The instrument contained negatively worded measurement items with positively worded measurement items to minimize response bias (Spector, 1992); however, some of the negatively worded items were problematic, causing irregularities in the reliability and factor analyses as Idazak and Drasgow (1987) had cautioned. Three negatively worded items were omitted from the intended variables.

The reliabilities of constructs with adapted measurement items were comparable to prior research, including OCB_obedience, which had a low reliability of $\alpha = .63$ in Coyle-Shapiro's (2002) study. The measurement items developed for particularism did not load on their own intended factor; therefore, the particularism dimension of the psychological contract was omitted from the analysis. More work in the development of the scale is required in order to better understand this dimension of the psychological contract. Additional studies are needed to further validate the focus scale, as well as the four scales, stability, scope, tangibility and time frame, which were adapted from, and developed by, Sels et al. (2004).

The respondent's perceptions regarding their psychological contract and the fulfillment of their psychological contract were obtained from the same measurement items. In order to accomplish this, the respondent's perceptions were measured two times, once to measure "the extent of their client organization's obligations," and again to measure "the extent of fulfillment of their client organization's obligations." The correlations between the "the extent of their client organization's obligations," and "the extent of fulfillment of their client organization's obligations" for the five dimensions ranged from .305 to .510.

During the scale analysis, construct and discriminant validity was assessed and found to be satisfactory. An evaluation of convergent validity was possible for two study variables, OCB_advocacy participation and innovative work behavior. The measurement items in each relate to sharing ideas, making improvements, suggestions, etc., and the two study variables were found to be highly correlated at $\alpha = .703$.

In the research model, there is a directional arrow indicating that perceptions of their psychological contract will lead to perceptions of level of fulfillment of their psychological contract. This is a known phenomenon in psychological contract research often termed degree of fulfillment, change, breach, or violation, and is often investigated using the evaluation approach (Robinson et al., 1994; Robinson & Morrison, 1995; Robinson & Rousseau, 1994). The breach or difference between the level of fulfillment of the psychological contract and the psychological contract is not addressed in this study. Future research could examine in more detail the differences between level of fulfillment of the psychological contract and the psychological contract.

Prior research has reported gender differences with aspects of OCB (Organ & Ryan, 1995), recommending gender be controlled. Gender did not meet requirements as a covariate, and was nevertheless entered into the models to investigate possible relationships. No gender differences were found investigating the employee's expectations of their employer's obligations from the employment arrangement category or from their perceptions of the characteristics of their employment arrangement. Gender was a significant contributor in the regression analyses when explaining innovative work behavior at Sig. = .004 and OCB_obedience at Sig. = .001.

Psychological Contract

The psychological contract is important to research and industry because of the evolving employment relationships in today's IT labor market, especially as IT sourcing issues focus on outsourcing, contracting, and other alternative employment arrangements to improve productivity and cost savings. In response to the first research question and Hypothesis 1, the IT professional's psychological contract was impacted by their employment arrangement. The IT professional's age and tenure in the current employment arrangement also affected their psychological contract. Gender had no significant effect on the IT professional's psychological contract. Even though research findings have been mixed, as expected, permanent full-time IT professionals consistently had higher perceptions of their employer's obligations to them than did IT professionals from the other employment arrangement categories. Three dimensions were significantly higher for permanent full-time IT professionals: time frame, tangibility, and focus.

The time-frame dimension of the psychological contract refers to the extent of understanding of the perceived duration and precision of the employment arrangement. This research found that permanent full-time IT professionals had higher perceptions of their employer's obligations with respect to the expected duration and precision of the employment arrangement than others, specifically independent contractors and contract company workers. Permanent full-time IT professionals believed their employers were more obligated to the durability of the employment relationship, in that the employment relationship would last longer than independent contractors and contract company workers believed. Permanent full-time believed that their employer was more obligated to make the employment relationship work than independent contractors and contract company workers believed.

The tangibility dimension refers to the explicitness of the psychological contract with respect to the employee's understanding of the defining boundaries, terms, and expectations, as it refers to the clarity of advancement opportunities, performance appraisal criteria, and rights within the firm. This research found that permanent full-time IT professionals had higher perceptions of their employer's obligations with respect to the boundaries and terms of their employment than independent contractors and contract company IT professionals. Permanent full-time believed their employers were more obligated as to being clear about the terms and expectations of their employment relationship than independent contractors and contract company workers believed. These would be more important characteristics of the permanent full-time, when the work and employment environment were the same; and not necessarily of the independent contractor and contract company worker, when the work environment and employer are not the same.

Higher levels of the focus dimension of the psychological contract represented a more socio-emotional emphasis rather than an economic emphasis. When measurement items were rated high on the 1-6 Likert scale, they hypothetically defined a more socio-emotional focus to the psychological contract. In this study permanent full-time believed their employers were more obligated to provide higher levels of development opportunities and a trusting and respectful employment relationship than contract

company workers believed. Contract company workers may not necessarily expect a trusting and respectful relationship in their work environment, since it is with another organization, not their employer. Also, this research did not support the proposition by McLean Parks and her colleagues (1998) that an independent contractor's focus would be different from permanent full-time IT professionals, in that it would be high in economic and low in socio-emotional. The independent contractor's focus variable mean was not sufficiently different from the permanent full-time or part-time IT professionals.

Hypothesis 2 addressed the potential differences in the psychological contract by viewing them through the IT professional's perceptions of the characteristics of their employment arrangement, EACc_job control, EACc_benefits, and EACc_stability. This research found that the IT professional's psychological contract did vary according to their perceptions of the characteristics of their employment arrangement. Testing the interaction of the three variables was not possible; consequently, only the main effects were analyzed in the model. The three characteristics dimensions, EACc_job control, EACc_benefits, and EACc_stability, were significant contributors to the differences in the IT professional's psychological contract. The stability characteristics of the employment arrangement most influenced the scope dimension of the psychological contract. The IT professional's perceptions of how stable their employment arrangement affected the differences as to their understanding of the boundary between their employment relations and their personal life (scope). In other words, their perceptions of how stable their employment arrangement made a difference in the perceptions of their employer's obligations as to their appreciation of their work, consideration of their personal effort, and their treatment of them.

The benefits characteristics of the employment arrangement most influenced the tangibility, scope, and time frame dimensions of the psychological contract. The IT professional's perceptions of the benefits afforded in their employment arrangement affected by the differences as to their understanding of the defining boundaries, terms, and expectations (tangibility); their understanding of the boundary between their employment relations and their personal life (scope); and their understanding of the perceived duration and precision of the employment arrangement (time frame). Their

perceptions of the amount of benefits provided within their employment arrangement made a difference in the perceptions of their employer's obligations as to the clarity of advancement opportunities, performance appraisal criteria, and rights within the firm, the tangibility of their psychological contract. Their perceptions of the amount of benefits provided within their employment arrangement made a difference in the perceptions of their employer's obligations as to their appreciation of their work, consideration of their personal effort, and their treatment of them, the scope of their psychological contract. Their perceptions of the amount of benefits provided within their employment arrangement made a difference in the perceptions of their employer's obligations as to the durability of the employment relationship, the time frame of the psychological contract. The greater the benefits provided in the employment relationship, the IT professional believed that their employer was more obligated to make the employment relationship work.

Hypothesis 3 addressed the potential differences in the psychological contract through the interaction between the IT professional's perceptions of their employment arrangement characteristics and their employment arrangement category. Neither full factorial design nor complete two-way interaction was possible; however, interaction between each employment arrangement characteristics variable and employment arrangement category variable was possible. This research found that the IT professional's psychological contract did vary according to their perceptions of the characteristics of their employment arrangement along with their employment arrangement category. Accordingly, it was the interaction between the employment arrangement and the varied perceptions of employment arrangement characteristics defining benefits, job control, and stability that affected the significant differences in the IT professional's psychological contract.

Specifically, the interaction between the perceptions of their job control and their employment arrangement category affected the tangibility and focus dimensions of their psychological contract. The amount of job control the ITP had in their particular employment arrangement affected their perceptions of their employer's obligations as to the clarity of advancement opportunities, performance appraisal criteria, and rights within

the firm, tangibility of their psychological contract. The amount of job control the ITP had in their particular employment arrangement affected their perceptions of their employer's obligations in providing development opportunities and a trusting and respectful employment relationship. For this study the focus dimension of the psychological contract was a continuum representing a more socio-emotional or an economic emphasis in the employment relationship.

Organizational Citizenship Behavior

Organizational citizenship behaviors are important to IT human resource research because these behaviors fall outside the traditional productivity and task performance measures, yet these behaviors are subtly expected by supervisors of IT professionals (Ang & Slaughter, 2001). Organ (1988) theorized that it is the collective of the organizational citizenship behaviors that will improve the functioning of an organization, and thus the reasoning for Hypothesis 4. Hypothesis 4 addressed levels of the five organizational citizenship behaviors from the perceptions of fulfillment of their employer's obligations of the IT professional's psychological contract. This research found that the level of fulfillment of the IT professional's psychological contract impacted their organizational citizenship behaviors as a collective. Age, gender, tenure, and the employment arrangement category were not significant contributors to differences in their OCB; and volition did not moderate the relationship.

Of the five OCB dimensions (loyalty, obedience, advocacy participation, helping, and functional participation), advocacy participation and obedience were found to have significant differences. The scope dimension of fulfillment of the psychological contract impacted the differences found in OCB_advocacy participation. If the IT professional's employer had failed to maintain the understanding of the boundary between their employment relations and the IT professional's personal life (scope), this affected their level of advocacy participation, which refers to their willingness to make suggestions, share ideas, etc. the stability dimension of fulfillment of the psychological contract impacted the differences found in OCB_obedience. The more constant and stable the employer made the employment arrangement, the more the individual complied with work rules, and did not neglect their job responsibilities. Thus, if the IT professional's

employer had failed to stick to agreements (stability), this affected their level of obedience, which may have resulted in a reduction in the quality of work normally performed.

Following prior research, investigation into each dimension of organizational citizenship behavior to determine its consequence from the levels of fulfillment of their employer's obligations of the IT professional's psychological contract was conducted using regression analyses for Hypotheses 4a-e. As the concept of the psychological contract is a multi-dimensional construct, the five dimensions representing the level of fulfillment of their psychological contract were entered into the regression models. The variable representing the employment arrangement category was entered into the model to determine whether the employment arrangement affects any of the IT professional's organizational citizenship behaviors. The variables, age, gender, tenure, and volition were also entered into the model to monitor their effects. The organizational citizenship behaviors, loyalty, advocacy participation, obedience, and functional participation, had significant relationships with the predictor variables in the model.

OCB_loyalty had the highest Adjusted R² value. The model using the fulfillment of the psychological contract dimensions, plus EAC, age, gender, tenure, and volition explained 47% of the sample variation in OCB_loyalty. The regression equation for OCB_loyalty below indicates the relationship of the significant terms at $\alpha = .05$, where both standardized Beta (β) coefficients are positive.

$$\text{OCB_loyalty} = .255 + .415 \text{ FOBL_scope} + .269 \text{ FOBL_focus}$$

As for OCB_advocacy participation, the model using the fulfillment of the psychological contract dimensions, plus EAC, age, gender, tenure, and volition explained 10% of the sample variation. The regression equation for OCB_advocacy participation below indicates the relationship of the significant terms at $\alpha = .05$, where both standardized Beta (β) coefficients are positive.

$$\text{OCB_advocacy participation} = 2.922 + .231 \text{ FOBL_tangibility} + .265 \text{ FOBL_scope}$$

Only 4% of the sample variation of OCB_obedience was explained using the model of the fulfillment of the psychological contract dimensions, plus EAC, age, gender,

tenure, and volition. The regression equation for OCB_obedience below indicates the relationship of the sole significant term at $\alpha = .05$.

$$\text{OCB_obedience} = 5.113 - .222 \text{ gender}$$

Only 4.3% of the sample variation of OCB_functional participation was explained using the model of the fulfillment of the psychological contract dimensions, plus EAC, age, gender, tenure, and volition. The regression equation for OCB_functional participation below indicates the relationship of the significant terms at $\alpha = .05$.

$$\text{OCB_functional participation} = 4.193 + .285 \text{ FOBL_scope} - .168 \text{ EAC}$$

OCB_helping was not significant, in that there was no significant relationship between the IT professional's perceptions of fulfillment of their employer's obligations and OCB_helping.

The primary predictors of dimensions of OCB were the levels of fulfillment of the psychological contract as it relates to scope, focus, and tangibility. Scope was the most relevant of predictor variables and relates to the boundaries established between the individual's employment relationship and other portions of their life. The greater the employer's support, appreciation, and recognition of them as perceived by the IT professional, the greater the IT professional exhibited loyalty, advocacy participation, and functional participation. As shown in prior research and supported in this study, females tend to be more obedient than males.

Loyalty relates to how well the IT professional favorably represents, defends and supports the organization. In this study, the more the IT professional felt that the employer had fulfilled their obligations as to their appreciation of the IT professional's work, taking their personal effort into consideration, and their treatment of them, the more loyal the IT professional was to the organization. The IT professional's level of loyalty was also related to higher levels of fulfillment of a socio-emotional focus of the psychological contract, instead of an economic focus. Thus, the more the IT professional felt that the employer had fulfilled their obligations in providing development opportunities and a trusting and respectful employment relationship; the more loyal the IT professional was to the organization.

Advocacy participation relates to the IT professional's willingness to make suggestions, share ideas, etc.; whereas, functional participation represents the amount of effort they apply to the job, and the willingness to exceed or go beyond expectations. In this study, with regard to advocacy participation, the more the IT professional felt that the employer had fulfilled their obligations as to their appreciation of the IT professional's work, taking their personal effort into consideration, and their treatment of them, the more the IT professional spoke out making creative and innovative suggestions, sharing ideas, and encouraging others to speak up, thus supporting the organization. As to functional participation, the more the IT professional felt that the employer had fulfilled their obligations as to their appreciation of the IT professional's work, taking their personal effort into consideration, and their treatment of them, the more the ITP worked beyond expectations and formal job requirements.

There is room for improvement in the Adjusted R^2 values from these regression models using the fulfillment of the psychological contract dimensions, EAC, age, gender, tenure, and volition. The low Adjusted R^2 values indicate that there are other relevant factors that may help to better explain the OCB dimensions.

The IT professional's job satisfaction was measured not only to provide an indication of their job satisfaction, but also to evaluate for potential negative correlation with self-reported OCB as recommended by Organ and Ryan (1995). Their concern for respondents inflating the OCB dimensions when not satisfied with their job did not play out, as the inter-correlations between job satisfaction and each of the five OCB dimensions and IWB did not have an inverse relationship. The job satisfaction inter-correlations ranged from a low of .129 with OCB_helping to the high of .481 with OCB_loyalty.

Innovative Work Behavior

Innovative work behavior is especially relevant to IT human resource research through its direct consequence to the potential work group innovations, as well as individual creativity required of IT professionals. Hypothesis 5 represents the investigation into innovative work behavior to determine its effect from the levels of fulfillment of their employer's obligations of the IT professional's psychological

contract. Following the hypotheses testing of organizational citizenship behaviors, the variables, EAC, age, gender, tenure, and volition were entered into the model. The model using the fulfillment of the psychological contract dimensions, plus EAC, age, gender, tenure, and volition explained 14% of the sample variation in innovative work behavior. The regression equation for IWB indicates four significant terms at $\alpha = .05$.

$$IWB = 3.086 + .327 \text{ FOBL_Scope} + .174 \text{ Gender} + .182 \text{ Volition} + .192 \text{ FOBL_Stability}$$

Scope and stability were relevant predictor variables of the IT professional's innovative work behavior; however, the IT professional's gender and volition also affected their innovative work behavior. The male IT professionals indicated higher levels of innovative work behavior. The IT professionals in this study indicated greater levels of innovative work when they perceived their employer's obligations toward support, appreciation, recognition, as well as stability, had been fulfilled. Those IT professionals who were not in the employment arrangement of their choosing indicated higher levels of innovative work behaviors than those who did not want to change employment arrangements.

Here, too, there is room for improvement in the Adjusted R^2 value; hence, it seems appropriate that there are other relevant factors, such as job demands and perceptions of fairness that might help to better explain the innovative work behavior of the IT professional (Janssen, 2000).

The second research question focused on the effect that the employment arrangement had on the level of fulfillment of the IT professional's psychological contract and their organizational citizenship behavior and innovative work behavior and was answered through hypotheses 4, 4a-e, and 5. The IT professional's employment arrangement had no effect on the relationships with any of the organizational behaviors, except for functional participation. Functional participation behaviors have a personal focus, but still contribute to overall organizational effectiveness. This study found permanent full-time IT professionals indicating the highest level of functional participation, with independent contractors, permanent part-time, and contract company workers following in that order.

Employment Arrangement Characteristics

The exploratory analysis with the employment arrangement characteristics provided unexpected findings in that IT professionals expressed differences in the characteristics of their respective employment arrangement. The IT professionals indicated the extent that their client organization had provided 21 particular statements as each related to their arrangement (e.g., “overall job security”). Exploratory analysis into the characteristics provides insight into what distinguishes the actual employment arrangement for IT professionals of differing categories. The post hoc results from the MANOVA revealed interesting and significant differences in the employment arrangement characteristics among the EAC groups. Those who were permanent full-time and permanent part-time expressed a greater degree of stability in their employment arrangements than did independent contractors and company contract IT professionals. Independent contractors indicated that they had greater job control within their employment arrangement than did permanent full-time and company contract workers. There were no significant differences between independent contractors and permanent part-time workers. Permanent full-time expressed being provided a greater degree of benefits in their employment arrangement than did the other three employment arrangement groups of IT professionals (permanent part-time, independent contractors, and contract company workers). These findings make sense; however, the strength here is that what made anecdotal sense was in fact confirmed by IT professionals from four varied employment arrangements.

Implications

In the words of Argyris (1960, pg. 30), “...the most practical and useful knowledge has come from research whose primary aim has been the addition of knowledge.” The purpose of this research was to deepen the organizational understanding of IT professionals by investigating variables not examined in prior studies. This section discusses the implications of the findings, both theoretical and practical.

Theoretical Implications

This study endeavored to view the IT professional from a contextual perspective as recommended by Ang and Slaughter (2000). Applying psychological contract and social information processing frameworks, results of this study support the relevance of the employment arrangement influencing the IT professional's attitudes, with respect to the IT professional's psychological contract, and having some effect on their subsequent organizational behaviors. Using a framework, such as Salancik and Pfeffer's (1978) Social Information Processing Theory, which considers the social context of the individual, permitted inclusion of salient information about the employment arrangement. The psychological contract framework allowed consideration of the perceived employment relationship with regard to obligations and fulfillment of those obligations on the part of the client organization.

This study validates the significance of the dimensional approach when investigating the psychological contract of employees in varied employment arrangements as conceptualized by McLean Parks et al. (1998). Noted differences in the dimensions of the psychological contract were seen through the employment arrangements of the IT professionals, as well as the three dimensions of their employment arrangement characteristics. The permanent full-time IT professional's perceptions of their employer's obligations were the highest of IT professionals from any other category. Differences were seen in IT professionals' organizational citizenship behaviors and innovative work behavior when the dimensional approach was applied to the level of fulfillment of their psychological contract. Noted differences were such that as the use of varied employment arrangements continues in the IT labor market with organizational and technological innovation trends, researchers and organizations interested in IT human resource management issues should consider the employment arrangements being used in the context of the work environment.

Gender had an affect on the innovative work behavior of IT professionals; however, the results were not as one might have assumed considering prior gender research. Prior research found females exhibited higher levels of organizational citizenship than males when investigating altruism and courtesy behaviors (Organ &

Ryan, 1995). Yet, with innovative work behavior, it was the males who expressed performing higher levels of innovative work behavior than females.

Van Dyne and Ang (1998) proposed that an individual's organizational citizenship behaviors could be regarded as a gauge of the employee's responses to their relationship with their employer. This study found that the level of fulfillment of the IT professional's psychological contract was positively related to organizational citizenship behaviors (loyalty, obedience, functional participation, and advocacy participation) and innovative work behavior. There was no significant relationship, however, between the level of fulfillment of the IT professional's psychological contract, and the organizational citizenship behavior of helping.

Prior studies have shown that it may be difficult to obtain adequate sampling numbers from diverse employment arrangements and this was confirmed by this study's sampling. Previous research has typically focused on the permanent full-time employee or the dyadic relationship of two employment arrangement categories. This study expanded the employment arrangement categories to four: permanent full-time, permanent part-time, independent contractor, and contract company worker. The group sample sizes for permanent part-time, independent contractor, and contract company worker were small ($n = 11$, $n = 16$, and $n = 16$); however, the groups were sufficiently different that combining any two categories to increase sample sizes was not possible. The diversity of the four groups brings forward the importance of including the employment arrangement category when investigating attitudes and behaviors of IT professionals who are not in the same employment arrangement.

Characteristics of employment arrangements were identified from the literature and the exploratory analysis revealed three definitive dimensions regarding job control, stability, and benefits. Results of this study reveal that IT professionals from differing employment arrangements perceived these three dimensions differently. One dimension related to job control is a common attribute of an independent contractor in the IT industry (e.g., 'Independent contractors have more control to select the projects they want to work on' (Spiegel, 2005)). In this study, independent contractors perceived greater control in their job than permanent full-time and contract company workers.

Practical Implications

The externalization of the employment arrangements to source IT professional jobs, beyond the permanent full-time employee, has most likely altered how human resource and management issues are executed. The variability of employment arrangements for IT professionals or their working conditions is not likely to stabilize with continued offshore outsourcing, downsizing, or shifting of healthcare costs (Koprowski, 2005). Organizations know the incentives to cost saving and improvements in systems-development productivity and IT core competency in applications management when using alternative employment arrangements (Ang & Slaughter, 2001; Ang & Straub, 1998). Yet, Shore and Tetrick (1994) contend that if organizations don't understand the employee's psychological contract under which they are operating, some strategic business decisions to affect the cost savings and improvements may result in violations to the employee's psychological contract. Understanding the diversity of the IT professional's psychological contract and its origins according to their employment arrangement is also key when organizations are trying to reassess their human resource strategies (Rousseau, 2000). For these reasons, it is important for organizations to recognize the subtle differences found in the psychological contracts of those IT professionals in different categories, as demonstrated in this study. Organizations might want to clarify aspects of the employment relationship for those IT professionals in non-permanent full-time positions. Clear communication from management would be essential to the IT professional so that perceptions of obligations are not unnecessarily unfulfilled.

This investigation into innovative work behaviors at the individual level with respect to the fulfillment of the psychological contract provides evidence that will carry forward to the moderating effects of group interactions. Utilizing mixed teams of IT professionals (or IT professionals from varying employment arrangements who are on the same development team) is a valid and accepted organizational strategy; therefore, recognizing the differing perceptions of IT professionals from different employment arrangements is a necessary and worthwhile managerial objective.

Innovation is an important aspect in an IT professional's job, as evidenced by one IT professional who was quoted saying, "...but it's all about solving problems of the business...and there's always something new to learn (Murphy, 2005)." Organizations may have difficulty objectively monitoring creativity and innovation within the job performance purview, even though an IT professional's job may have an implicit degree of creative and innovative requirement to it. In turn, West and Farr (1990a) define innovative work behavior as an intentional act, which can be withheld as easily as it can be performed. It appears that if managers express appreciation of the IT professional's work, consider their personal effort in the performance of their jobs, improve their treatment of them, and stick to agreements, the IT professional will be motivated to perform greater levels of innovative work behavior. Thus, understanding motivating factors that will facilitate one to be innovative enables organizations to be proactive in the management of their IT professionals.

This study substantiates that aspects of the psychological contract, such as controlling the amount of work that spills into their personal life and providing a stable environment, can, when fulfilled, positively influence the innovative work behavior of the IT professional. Another important finding is that IT professionals who are not in the employment arrangement of their choosing may, in fact, perform higher levels of innovative work in an effort to perhaps secure a job in their preferred employment arrangement.

One purpose of this research was to gain additional knowledge into the psychological contract of IT professionals from varied employment arrangements, which should improve organizational understanding of how to manage today's IT professional. The results in this study provide managers "with some insight into why things occur as they do" (Argyris, 1960, pg. 166), as it relates to IT professionals. As long as organizations retain workers in varying employment arrangements in order to shrink and expand their work force without the cost and liability risk of laying off employees (Pfeffer & Baron, 1988), human resource managers will have to recognize the effects that different employment arrangements have on the IT professionals' attitudes and behaviors.

The contributions of this research are presented in Chapter Seven, as are the limitations of the study and recommendations for future research.

CHAPTER SEVEN CONCLUSIONS

Contributions

As organizations continue to capitalize on their ability to use any configuration of employing IT professionals in their efforts to increase operational effectiveness or performance of IT development and innovations, they naturally depend on IT professionals to willingly accept these employment arrangements. Within the realm of the first research component, this study found certain dimensions of the IT professional's psychological contract that have a direct impact on their resulting performance. Prior research has not considered the full diversity of the employment arrangements used in IT industry today. This study extended research by sampling IT professionals from four different employment arrangement categories: permanent full-time, permanent part-time, independent contractor, and contract company workers. This study revealed significant relationships relating to the IT professional's employment arrangement, psychological contract, fulfillment of the psychological contract, and organizational behaviors.

Within the IT context, innovative work behavior has not received the same empirical examination that organizational citizenship behavior has received. However, within the IT industry, innovative work is just as relevant, if not more so. Innovative work behavior includes a willingness to be creative, search out new techniques and/or product ideas, and generate original solutions. Innovative work behavior can be an important element to an IT professional's job performance, even as defined within its domain for this study. Acknowledging Amabile's (1983) concern that social and environmental factors may affective one's creativity, this study found that the innovative work behavior of IT professionals was affected by the level of fulfillment of their psychological contract, as well as their gender and the volition of their employment arrangement. IT professionals have the option to limit innovative work since these behaviors are extra-role acts typically not in their job description or required by the organization (Janssen, 2000). This study's findings were comparable to Janssen's (2000)

findings, where the level that the workers responded innovatively was related to their perceptions of fairness on the job. For Janssen (2000), the perceptions related to fairness on the job, and for this study, the perceptions related to how well the employer had fulfilled their obligations to the IT professional. This study's findings suggest that perceptions as to the level of fulfillment of the employer's obligations regulate the IT professional's willingness to respond innovatively in their job.

In 1998, McLean Parks and colleagues recommended the dimensional approach to the psychological contract should be used for studying employees in alternative arrangements. To date, only one study had empirically tested the dimensional approach as it relates to the psychological contract (Sels et al., 2004). Using the dimensional approach in this study, the results confirm the soundness of using dimensions in lieu of the content approach as a method for comparing permanent full-time category employees with employees in other alternative categories. IT professionals in different employment arrangements had definitive differences in their psychological contract. The dimensional approach tells a more comprehensive story of their understanding of their employer's obligations to them. As well, the dimensional approach offers specific information in the fulfillment of the psychological contract as to what influences their subsequent behaviors, both organizational citizenship and innovative work.

The second research component, with the attempt at theory building through an exploratory analysis, succeeded in identifying three basic factors to the characteristics of the IT professional's employment arrangement. Prior literature provided the framework to build realistic dimensions that withstood the factor analyses and multivariate techniques executed in the main study. This study found that the three factors labeled job control, benefits, and stability differed markedly depending upon the employment arrangement of IT professional and impacted the IT professional's perceptions of their employer's obligations to them.

Limitations of the Study

Limitations are inherent in field research and although care was taken during the design of the research, five research limitations are identified and discussed: (1) use of

cross-sectional data, (2) convenience sample (3) self-report bias and common source method bias, (4) sample sizes for EAC groups, and (5) non-response bias.

This study used cross-sectional data asking the respondents to evaluate perceptions at they relate to their “client organization.” IT professionals can be affiliated with more than one employment or work arrangement and always evolving, and McLean Parks et al. (1998) cautioned that workers could have multiple psychological contracts, which may be continually changing. Consequently, care was taken in the design of the instrument and during pilot testing procedures to ensure the instructions were clear as to the specific perceptions of interest. Even so, there is no definitive line separating perceptions, and thus no guarantee that the perceptions obtained were those of the “client organization.” Also, with cross-sectional data, directions of causality cannot be confirmed, even though any directions of individual relationships in the model were supported by prior research.

The participants in this study were from convenience samples and sourced by working professionals who were University of South Florida master-level students from evening MIS classes and University of South Florida MIS graduate alumni located throughout the United States. All respondents voluntarily completed the survey, and accordingly pose a threat to validity through self-selection. Making inferences to the IT professional population is not recommended when a convenience sample is used. With this said, however, there were many similarities between the study sample demographics and the IT professional demographics from ITAA studies (2004; 2005), and, therefore, it is feasible that generalities can be made with this research with caution.

Another common limitation of survey research is high correlations confounded by common source and common method bias due to self-report of dispositional and attitudinal variables. The design of this study did not make the evaluation by peers or supervisors of the IT professional’s organizational behaviors achievable; consequently, this study had a potential for self-report bias. Even so, there is research in support of self-reports. Spenner (1990) supports self-reporting as a valid and reliable method, because respondents tend not to misrepresent their reporting of job characteristics and they accurately state their job circumstances. Organ and Ryan (1995) state that self-ratings of

OCB is appropriate due to its fundamental subjectivity. Organ (1988) also warns that employees who are not satisfied with their job may inflate their OCB responses to justify their “self-worth” (pg. 34); therefore, a job satisfaction measure was obtained from the individual and evaluated with the organizational behavior measures. No inverse relationships were found (e.g., OCB dimensions and IWB were not negatively correlated with job satisfaction) and many other variables in the study were not correlated with job satisfaction as reported in Appendix 6. The descriptive statistics in Appendix 5 do not offer evidence of artificial inflation of the study variables on the part of the respondents.

Hair et al. (1998, pg. 100) contends that separate factor analyses should be executed “when differing groups are expected in the sample.” The sample sizes obtained for the employment arrangement categories other than permanent full-time were not sufficiently large to carry out separate factor analyses. T-test comparisons were made of the individual variables to determine whether the samples of the other employment arrangement categories could be combined; however, there were sufficient differences that made any combining of samples unjustifiable. Also, proper execution of MANOVA has recommended minimum sample sizes in each cell with respect to number of dependent variables (Hair et al., 1998). The disproportionate group sizes among the employment arrangement categories made group comparisons more difficult. Uneven sample variance results were used in lieu of even sample variance results, because of the disproportionate group sizes. Harmonic mean of the group sizes was also used, which may have affected the power of the test, as well as the results (Baroudi & Orlikowski, 1989).

Steps were taken to obtain a satisfactory response rate and control for non-response bias. The letter inviting the IT professional to participate asked them to fill out Section I of the survey, even if they were not willing or could not complete the survey. Section I contained standard demographic data that were used to evaluate respondents with non-respondents, assessing potential differences between the two groups. Comparisons found no discernable differences between those who responded and those who filled out only Section I of the survey. In addition, the on-line survey had JavaScript encoded to check for missing fields in the survey. The respondents could not submit the

survey without certain fields completed; consequently, surveys received were complete. This, however, may have frustrated some respondents who may have wanted to submit a partially completed survey, and, when this was not possible, they abandoned their survey. A postcard was sent as the follow-up mailing, in lieu of another letter, as there is research in support of varying the method of invitation to participate. Nevertheless, the overall response rate for the study was 5.2%.

Recommendations for Future Research

This research study did not answer all of the questions surrounding the employment arrangements of IT professionals, their psychological contract, and the effects on their organizational behaviors. Presented here are ideas for future research that extend the current research model and perhaps offer other explanations to the IT professional's psychological contract and the effects on their organizational behaviors.

Rousseau (1995) contends that the psychological contract is a cognitive creation by the individual; consequently, the full potential of the contract could be limited by an individual's cognitions. Researchers have found individuals react differently to similar work situations (Hackman & Oldham, 1980) through not only their individual cognitions, but also their personalities. Therefore, it is conceivable to investigate such influences (e.g., personality characteristics) on the psychological contract and organizational citizenship behavior. An individual's perceived self-efficacy includes consideration of not only their thinking about their ability to accomplish selected job tasks, but also their skills and capabilities to perform the job task (Bandura, 1986). Bandura (1982) suggests that self-efficacy can influence one's choice of surroundings and activities, including level of effort; therefore, one's perceptions of self-efficacy can affect decisions in the work environment, in that an individual may choose a more challenging job, or not. Consequently, an individual's level of self-efficacy might affect their behaviors as perceived through to their employment arrangement and their attitudes and job. Therefore, the moderating effect of self-efficacy in the fulfillment of the IT professional's psychological contract and the subsequent organizational behaviors could be investigated.

Coyle-Shapiro (2002) found permanent employees with high trust exhibit high organizational citizenship behaviors, namely advocacy and functional participation. Ang

and Slaughter's (2001) study of permanent and contractor software developers found that supervisors trust contractors less than permanent software developers. A study by Robinson and Morrison (1995) of permanent employees found that trust mediates the relational aspects of their psychological contract and organizational citizenship behavior, namely civic virtue. Therefore, the level of trust in the client's organization could be investigated as to the effects in the fulfillment of the IT professional's psychological contract and the subsequent organizational behaviors, while considering the IT professional's employment arrangement.

Van Dyne and Ang (1998) investigated regular and contingent employees of banks and hospitals. They found that in examining the relationship between affective commitment and psychological contracts with organizational citizenship behavior, helping behavior was stronger for contingent workers than for regular workers. This research study found the level of fulfillment of the IT professional's psychological contract was not related to their helping behavior. Martinez's (2004) study of permanent full-time IT professionals found that violations to aspects of their psychological contract were related to lower levels of their affective commitment. Consequently, the IT professional's level of affective commitment could be investigated as to its moderating effect between the fulfillment of their psychological contracts and their organizational behaviors, while considering the IT professional's employment arrangement.

This research study investigated the perceptions of the IT professional in their current employment arrangement. It is possible that their previous employment arrangement, if different than the present, could have interfered with the IT professional's perceptions of their current employment arrangement. Therefore, future research should consider a longitudinal study to investigate changes in perceptions, as well as investigate directions of causality in the model.

Research into the breach of the psychological contract has not been investigated using the dimensional approach. Therefore, further investigation into the differences between the fulfillment of the psychological contract and the psychological contract using the psychological contract dimensions is warranted and recommended if the focus becomes the breach, which this study did not address.

The construct, OCB, has received attention referring to the need of better identifying its dimensions (Van Dyne et al., 1994), because of the blurring of the separation between in-role performance and OCB. Most OCB studies have been subject to non-managerial or non-professional respondents. IT professionals do not likely fall into these categories, and, hence, with their job descriptions, in-role performance and OCB may be harder to distinguish. Organizational behaviors, OCB and IWB, were the focus in this study. Future research might consider investigating whether organizational behaviors within the OCB and IWB domain are considered in-role or extra-role behaviors by IT professionals.

Rousseau's (1989) psychological contract and Salancik and Pfeffer's (1978) social information processing frameworks supported including social influences of the employer and employee relationship of the IT professional, originating from varied employment arrangements, on their attitudes and behaviors. Other theories, such as Hackman and Oldham's (1980) job design characteristics, Oliver's (1980) expectancy disconfirmation, Blau's (1964) social exchange, and Gouldner's (1960) norm of reciprocity, are viable considerations for future research in this area.

Concluding Comments

This study, as does all research, has its limitations; however, there are significant contributions to IT human resource research. This study expands our understanding of how IT professionals in varying employment arrangements perceive their work environment. Specifically, IT professionals from different employment arrangements see their work environment differently, which affects their attitudes and behaviors in the work place. No other study has examined the variety of employment arrangements in the IT profession, in spite of the fact that alternative employment arrangements have been used to source IT professionals since the inception of information systems projects. Obtaining the perceptions of the IT professionals within the context of their particular work environment is an important contribution in our pursuit to understanding how environmental characteristics, such as the employment arrangement, affect IT professional's attitudes and subsequent behaviors. As for the IT professional, their

perceptions are very relevant to the situation, as Karl Weick so aptly stated, “believing is seeing” (2001, pg. 195)

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APPENDICES

Appendix 1. Pilot Study Questionnaire

Field Study of Working Professionals' and Their Work Environment

Section I. General Background Information

1. Your Age: _____ 2. Your gender (circle): M F

3. What is your highest level of formal education (check one).

- | | | | |
|--------------------------|---|--------------------------|-----------------------|
| <input type="checkbox"/> | Some high school | <input type="checkbox"/> | Bachelor degree |
| <input type="checkbox"/> | High school graduate | <input type="checkbox"/> | Some graduate courses |
| <input type="checkbox"/> | Some college | <input type="checkbox"/> | Master degree |
| <input type="checkbox"/> | Associate degree (or vocational degree) | <input type="checkbox"/> | Doctorate degree |

4. When did you last attend the formal education above? (year) _____

5. What is your job title?

6. What career field do you work in (Finance, Banking, etc.) _____

7. How long, in years, have you worked in your profession? _____

Section II. Current Employment Arrangement

The purpose of this section is to identify your particular employment arrangement. For instance, working professionals may be employed (and paid) by one organization, and work on projects internal to the same organization. Here, the “employing organization” and the “client organization” are the same. However, some working professionals may be employed (and paid) by one organization, yet work on projects for another organization. Here, the “employing organization” and the “client organization” are two different organizations.

1. Please check the one category below that best fits your current primary employment arrangement.

- Permanent full-time employment arrangement* encompasses full-time employees of an organization for which they work on projects for consumption of the employing organization.
- Permanent part-time employment arrangement* encompasses part-time employees of an organization for which they work on projects for consumption of the employing organization.
- Independent contractors* encompass independent contractors, independent consultants, or freelance workers.
- On-call workers* are called to work only when needed, although they can be scheduled to work for an extended period of time.
- Contract company workers* are employed by an organization that provides workers or their services to other organizations under contract.

For example, employed by an organization that provides “outsourced” services, whether or not they work on location in the client organization.

- Temporary help agency workers* are paid by a temporary help agency, whether or not their job is actually temporary.
 - Other arrangement* (please describe)
-

2. How long have you been in your current employment arrangement? (years) _____

3. How much longer do you expect to be in your current employment arrangement (if you know)? (years)

4. Which employment arrangement would you prefer to work? (check one)

- current arrangement
- change from current arrangement to: (specify one)

Section III. Your Client Organization

For this section, consider each statement as it relates to *your client organization*. Remember, it may be your “employing organization” or it may be a “client organization.”

Indicate the extent each statement best represents your opinion about it.

<i>Your client organization provides you ...</i>		<u>Not at all</u>	<u>Little extent</u>	<u>Some extent</u>	<u>Moderate extent</u>	<u>Large extent</u>	<u>Very large extent</u>
1	Overall job security.	1	2	3	4	5	6
2	An expectation that your job will last indefinitely, if you want it to.	1	2	3	4	5	6
3	An expectation as to the limits of your employment duration.	1	2	3	4	5	6
4	Access to benefits.	1	2	3	4	5	6
5	Freedom to supervise your own work.	1	2	3	4	5	6
6	Opportunities for job promotions.	1	2	3	4	5	6
7	Opportunities for professional development activities.	1	2	3	4	5	6
8	Opportunities for formal on-the-job training.	1	2	3	4	5	6
9	Access to a retirement plan.	1	2	3	4	5	6
10	Access to tuition reimbursement.	1	2	3	4	5	6
11	A say in the number and scheduling of your work hours.	1	2	3	4	5	6
12	Stability in your work schedule.	1	2	3	4	5	6
13	A guarantee in the number of hours you work from week to week.	1	2	3	4	5	6
14	The flexibility to work from a location other than company office.	1	2	3	4	5	6
15	Access to a good overall compensation package.	1	2	3	4	5	6
16	Flexibility in your work hours.	1	2	3	4	5	6
17	Steady income.	1	2	3	4	5	6
18	Opportunities for pay raises.	1	2	3	4	5	6
19	Access to health insurance.	1	2	3	4	5	6
20	Frequent job performance evaluations.	1	2	3	4	5	6
21	A satisfactory overall compensation package.	1	2	3	4	5	6

Section IV. Beliefs About Your Client Organization

For the next set of statements, indicate in Column A “the extent to which you believe your current client organization is obligated to provide you with...” and in Column B “the extent to which you believe your current client organization has fulfilled these obligations.”

		Column A						Column B					
		<i>Extent the organization is obligated to...</i>						<i>Extent the organization has fulfilled this obligation to...</i>					
		<u>Not at all</u>	<u>Little</u>	<u>Some</u>	<u>Moderate</u>	<u>Large</u>	<u>Very large</u>	<u>Not at all</u>	<u>Little</u>	<u>Some</u>	<u>Moderate</u>	<u>Large</u>	<u>Very large</u>
1	Provide me with job security.	1	2	3	4	5	6	1	2	3	4	5	6
2	Make a commitment to me for a long time.	1	2	3	4	5	6	1	2	3	4	5	6
3	Offer me opportunities for career development.	1	2	3	4	5	6	1	2	3	4	5	6
4	Won't immediately fire me if things are going badly.	1	2	3	4	5	6	1	2	3	4	5	6
5	Offer me a transfer to another job if my current job would disappear.	1	2	3	4	5	6	1	2	3	4	5	6
6	Do everything in their power to keep me on the job.	1	2	3	4	5	6	1	2	3	4	5	6
7	Set agreements regarding my work down in writing.	1	2	3	4	5	6	1	2	3	4	5	6
8	Make specific agreements regarding my work.	1	2	3	4	5	6	1	2	3	4	5	6
9	Are very clear about opportunities for advancement in this firm.	1	2	3	4	5	6	1	2	3	4	5	6
10	Specifically describe the performance appraisal criteria used in this firm.	1	2	3	4	5	6	1	2	3	4	5	6
11	Unambiguously describe my obligations within this firm.	1	2	3	4	5	6	1	2	3	4	5	6
12	Unambiguously describe my rights within this firm.	1	2	3	4	5	6	1	2	3	4	5	6
13	Support me personally in difficult periods.	1	2	3	4	5	6	1	2	3	4	5	6
14	Appreciate me for what I do and for who I am.	1	2	3	4	5	6	1	2	3	4	5	6
15	Consider not only the end result but also my personal effort.	1	2	3	4	5	6	1	2	3	4	5	6
16	Treat me as a person, not as a number.	1	2	3	4	5	6	1	2	3	4	5	6
17	Allow me to be myself within this firm.	1	2	3	4	5	6	1	2	3	4	5	6
18	Stick to agreements despite changing circumstances.	1	2	3	4	5	6	1	2	3	4	5	6
19	Are flexible in applying agreements.	1	2	3	4	5	6	1	2	3	4	5	6
20	Consider made agreements as permanently valid.	1	2	3	4	5	6	1	2	3	4	5	6
21	Be clear in outlining expectations.	1	2	3	4	5	6	1	2	3	4	5	6
22	Give me plenty of notice.	1	2	3	4	5	6	1	2	3	4	5	6
23	Support the defined job expectations.	1	2	3	4	5	6	1	2	3	4	5	6

Section IV. Beliefs About Your Client Organization

	Column A <i>Extent the organization is obligated to...</i>						Column B <i>Extent the organization has fulfilled this obligations to...</i>					
	<u>Not at all</u>	<u>Little</u>	<u>Some</u>	<u>Moderate</u>	<u>Large</u>	<u>Very large</u>	<u>Not at all</u>	<u>Little</u>	<u>Some</u>	<u>Moderate</u>	<u>Large</u>	<u>Very large</u>
24	Allow me to offer suggestions to work and organization.											
25	Allow me to keep work and personal life separate.											
26	Leave no room for misinterpretation of my obligations.											
27	Recognize my talents as key to the success of the job.											
28	Accept my skills as important.											
29	Recognize that specific knowledge about the company is necessary.											
30	Realize that special skills are needed to do this job.											
31	Make public any monetary rewards possible.											
32	Establish respectful and trusting relationship immediately.											
33	Provide development opportunities.											
34	Provide any and all materials necessary to do the job.											
35	Be truthful even when it may harm the relationship.											

Please restate in your own words your current employment arrangement. For example:

Permanent, full-time employee in a public non-IT financial firm, or
 Independent Contractor, self-employed, under contract with a bank, or
 Company Consultant, employed by IT services company and working at private manufacturing company,
 etc.

Section V. Beliefs About Your Current Job In Your Client Organization

For this section, consider each statement as it relates to *your client organization*. Remember, it may be your “employing organization” or it may be a “client organization.”

<i>In my current job, ...</i>		<u>Never</u>	<u>Rarely</u>	<u>Seldom</u>	<u>Sometimes</u>	<u>Frequently</u>	<u>Always</u>
1	I create new ideas for difficult issues.	1	2	3	4	5	6
2	I search out new technologies, processes, working methods, techniques, and/or product ideas.	1	2	3	4	5	6
3	I generate original solutions for problems.	1	2	3	4	5	6
4	I mobilize support for innovative ideas.	1	2	3	4	5	6
5	I acquire approval for innovative ideas.	1	2	3	4	5	6
6	I make organizational members enthusiastic for innovative ideas.	1	2	3	4	5	6
7	I transform innovative ideas into useful applications.	1	2	3	4	5	6
8	I introduce ideas into the work environment in a systematic way	1	2	3	4	5	6
9	I evaluate the utility of innovative behaviors in the workplace.	1	2	3	4	5	6

For this section, consider each statement as it relates to your overall work performance.

	<u>Very Poor</u>	<u>Poor</u>	<u>Fair</u>	<u>Good</u>	<u>Very Good</u>	<u>Excellent</u>
1	How would you rate your own work performance?					
2	How would your supervisor probably rate your work performance?					
3	How would your co-workers probably rate your work performance?					

Section V. Beliefs About Your Current Job In Your Client Organization (continued)

For this section, please indicate the extent each statement is typical of your own behavior.

		<u>Not at all</u>	<u>Little extent</u>	<u>Some extent</u>	<u>Moderate extent</u>	<u>Large extent</u>	<u>Very large extent</u>
1	I tell outsiders that the organization is a good place to work.	1	2	3	4	5	6
2	I defend the employer when other employees criticize it.	1	2	3	4	5	6
3	I represent the organization favorably to outsiders.	1	2	3	4	5	6
4	I neglect aspects of job responsibilities.	1	2	3	4	5	6
5	I waste time while at work on personal matters.	1	2	3	4	5	6
6	Regardless of circumstance, I produce the highest quality work.	1	2	3	4	5	6
7	I follow work rules and instructions with extreme care.	1	2	3	4	5	6
8	I use professional judgment to assess what is right/wrong for the organization.	1	2	3	4	5	6
9	I make creative work-related suggestions to co-workers.	1	2	3	4	5	6
10	I make innovative suggestions to improve the functioning of the department.	1	2	3	4	5	6
11	I share ideas for new projects or improvements widely.	1	2	3	4	5	6
12	I encourage others to speak up at meetings.	1	2	3	4	5	6
13	I participate in outside groups for the benefit of the organization.	1	2	3	4	5	6
14	I help others who have heavy workloads.	1	2	3	4	5	6
15	I help others who have been absent.	1	2	3	4	5	6
16	I go out of my way to help colleagues with job-related problems.	1	2	3	4	5	6
17	I readily assist my supervisor with his/her work.	1	2	3	4	5	6
18	I try to avoid creating problems for others.	1	2	3	4	5	6
19	I work beyond what is expected.	1	2	3	4	5	6
20	I exceed formal requirements of the job.	1	2	3	4	5	6
21	I go the 'extra mile' for the organization.	1	2	3	4	5	6
22	I only attend work-related meetings if required by the job.	1	2	3	4	5	6
23	I participate in activities that are not required but that help the image of the organization.	1	2	3	4	5	6
24	I avoid extra duties and responsibilities at work.	1	2	3	4	5	6
25	I personally pursue additional training to improve job performance.	1	2	3	4	5	6

Section VI. Beliefs About Your Current Job And Your Client Organization

For this section, please consider each statement *about your job and your client organization* and indicate the extent of your agreement or disagreement

		<u>Disagree Strongly</u>	<u>Disagree Moderately</u>	<u>Disagree slightly</u>	<u>Agree slightly</u>	<u>Agree Moderately</u>	<u>Agree Strongly</u>
1	Generally speaking, I am very satisfied with my job.	1	2	3	4	5	6
2	I am generally satisfied with the kind of work I do in this job.	1	2	3	4	5	6
3	I frequently think of quitting this job.	1	2	3	4	5	6
4	I have many alternative job opportunities including some that are different from what I do now.	1	2	3	4	5	6
5	There are many jobs available similar to mine.	1	2	3	4	5	6
6	I can find another job doing exactly what I am doing now.	1	2	3	4	5	6
7	Communications seem good within this organization.	1	2	3	4	5	6
8	Many of our rules and procedures make doing a good job difficult.	1	2	3	4	5	6
9	I sometimes feel my job is meaningless.	1	2	3	4	5	6
10	The goals of this organization are not clear to me.	1	2	3	4	5	6
11	My efforts to do a good job are seldom blocked by red tape.	1	2	3	4	5	6
12	I like doing the things I do at work.	1	2	3	4	5	6
13	I often feel that I do not know what is going on with the organization.	1	2	3	4	5	6
14	I have too much to do at work.	1	2	3	4	5	6
15	I feel a sense of pride in doing my job.	1	2	3	4	5	6
16	Work assignments are not fully explained.	1	2	3	4	5	6
17	I have too much paperwork.	1	2	3	4	5	6
18	My job is enjoyable.	1	2	3	4	5	6

Appendix 2. Letter – Invitation to Participate

«ADDR_NAME»
«PREF_STREET1»
«PREF_STREET2»
«PREF_CITY», «PREF_ST» «PREF_ZIP»

Subject: Field study of IT professionals' work environment

Dear «FIRST_NAME»:

As an alumnus of the University of South Florida's MIS program, I wish to invite you to participate in a field study of the IT professionals' work environment, which includes the phenomenon of the different employment arrangements in which IT professionals are finding themselves. This study is a critical part of my culminating research project and requirement for the completion of my doctoral degree. Your participation provides the basis for the knowledge to be gained in this information systems study.

All IT professionals may participate by completing a 20 minute questionnaire, which can be found online at the following website:

<http://www.coba.usf.edu/departments/isds/grads/newton/AEAITPSTUDY.htm>

Alternatively, you can email me at snewton@coba.usf.edu or call 813-431-7844 to request that I mail a printed questionnaire to you. Identities of all participants will remain anonymous in any future publication of research results. Please enter your study ID number **usfa«ID»** at the end of the questionnaire to ensure that you will not be contacted in a subsequent mailing. Although 20 minutes is not a trivial amount of time to spend on a questionnaire, the value of the information you provide is potentially far greater, and so I am truly grateful for your consideration.

If you are not currently working as an IT professional, I still welcome your participation as the information you provide is still of value to me. If you do not wish to participate, I would ask that you please take a minute or two to complete Section I of the questionnaire, which consists of simple general and demographic questions, and enter the study ID number printed in bold above at the end of the questionnaire. In doing so, you will enable us to determine that those who are either unwilling or unable to participate in the study are not demographically different than those who do choose to participate.

I would be delighted to address any questions or concerns at your convenience. Thank you very much for your consideration.

Regards,

Sandra Newton
Department of Information Systems and Decision Sciences
University of South Florida

Appendix 3. Postcard – Follow-up Invitation to Participate

Dear

This post card is a follow-up to the letter I mailed you a few weeks ago inviting you to participate in a field study concerning IT professionals and their work environment. If you have already responded, thank you for your participation and please ignore this reminder.

I realize how busy you are; however, I also recognize that the information you may provide is very important and this questionnaire is a way to express your beliefs. You may participate by completing the questionnaire, which can be found online at <http://www.coba.usf.edu/departments/isds/grads/newton/aeaitpstudy.htm>.

Please enter the study ID number found on the reverse side of this card at the end of the questionnaire. Again, thank you for your consideration!

Sandra Newton E-mail me at snewton@coba.usf.edu if you have any questions.

Appendix 4. Final Version of the Measurement Instrument

Field Study of IT Professionals and The Work Environment

Thank you for your willingness to participate in this study. Since we are trying to better understand the different employment arrangements in which IT professionals find themselves, as well as their work environment, you should complete this questionnaire only if you are currently employed.

On average, 20 minutes are required to complete the questionnaire. I know this is not a trivial amount of time, so I am very grateful to you for taking the time to complete the questionnaire. All information you provide will be held in the strictest confidence. **Total anonymity is guaranteed.**

Even if you choose to not participate, we would be grateful if you please take a minute to complete Section I of the questionnaire. This basic demographic information allows us to verify that those who do not participate are not different from those who do participate.

Section I. General Background Information

Age	Gender (M/F)	Highest degree held (HS Diploma, AA, BA, MA, MBA, PhD)	What year did you graduate?	Race/ethnicity
<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
			<input type="text"/>	What is your job title?
				Please choose one <input type="text"/>
				Which one of the IT career fields best represents your job title?
		Other - <input type="text"/>		
			<input type="text"/>	How long, in years, have you worked in the IT profession?
			<input type="text"/>	In what industry do you work? (Ex.: Information Technology, Law, Medicine, Finance, etc.)

The purpose of this section is to identify your particular employment arrangement. For instance, IT professionals may be employed (and paid) by one organization, and work on projects internal to the same organization. Here, the “employing organization” and the “client organization” are the same. However, some IT professionals may be employed (and paid) by one organization, yet work on projects for another organization. Here, the “employing organization” and the “client organization” are two different organizations.

Please check one category below that best fits your current primary employment arrangement.

- Permanent full-time employment arrangement** encompasses full-time employees of an organization for which they work on projects for consumption of the employing organization.
- Permanent part-time employment arrangement** encompasses part-time employees of an organization for which they work on projects for consumption of the employing organization.
- Independent contractors** encompass independent contractors, independent consultants, or freelance workers.
- On-call workers** are called to work only when needed, although they can be scheduled to work for an extended period of time.
- Contract company workers** are employed by an organization that provides workers or their services to other organizations under contract. For example, those employed by an organization that provides “outsourced” services, whether or not they work on location in the client organization.
- Temporary help agency workers** are paid by a temporary help agency, whether or not their job is actually temporary.
- Other arrangement** (please describe your employment arrangement)

How long, in years, have you been in your current primary employment arrangement?

How many more years do you expect to be in your current primary employment arrangement (if you know)?

Which employment arrangement would you prefer to work?

What was your previous primary employment arrangement?

How long in years were you in your previous primary employment arrangement?

In two or three sentences, please describe your current primary employment arrangement. For example:

1. Permanent, full-time employee in a public non-IT financial firm, or
2. Independent contractor, under 2 year contract with a commercial bank, or
3. Company consultant, employed by IT services company and working at a private manufacturing company, etc.

Section III. Your Client Organization

For this section, consider each statement as it relates to ***your client organization***. Remember, your client organization may be your primary employer, or an external organization, depending upon your employment arrangement.

Please indicate on a scale of 1-6 the extent your client organization provides you...

		1 – not at all	2 – to a little extent	3 – to some extent	4 – to a moderate extent	5 – to a large extent	6 – to a very large extent
1	Overall job security.	1	2	3	4	5	6
2	An expectation that your job will last indefinitely, if you want it to.	1	2	3	4	5	6
3	An expectation as to the limits of your employment duration.	1	2	3	4	5	6
4	Access to benefits.	1	2	3	4	5	6
5	Freedom to supervise your own work.	1	2	3	4	5	6
6	Opportunities for job promotions.	1	2	3	4	5	6
7	Opportunities for professional development activities.	1	2	3	4	5	6
8	Opportunities for formal on-the-job training.	1	2	3	4	5	6
9	Access to retirement plan.	1	2	3	4	5	6
10	Access to tuition reimbursement.	1	2	3	4	5	6
11	Control over your own work schedule/number of hours you work.	1	2	3	4	5	6
12	Stability in your work schedule.	1	2	3	4	5	6
13	A guarantee in the number of hours you work from week to week.	1	2	3	4	5	6
14	The flexibility to work from a location other than company office.	1	2	3	4	5	6
15	Access to a good overall compensation package.	1	2	3	4	5	6
16	Flexibility in your work hours.	1	2	3	4	5	6
17	Steady income.	1	2	3	4	5	6
18	Opportunities for pay raises.	1	2	3	4	5	6
19	Access to health insurance.	1	2	3	4	5	6
20	Frequent job performance evaluations.	1	2	3	4	5	6
21	A satisfactory overall compensation package.	1	2	3	4	5	6

Section IV. Beliefs About Your Client Organization

For the next set of statements using the scale of 1-6 below, indicate in Column A *“the extent to which you believe your current client organization is obligated to provide you with...”* and in Column B *“the extent to which you believe your current client organization has fulfilled these obligations.”* Remember, your client organization may be your primary employer, or an external organization, depending upon your employment arrangement.

		1 – not at all 2 – to a little extent 3 – to some extent						4 – to a moderate extent 5 – to a large extent 6 – to a very large extent					
		Column A <i>Extent the organization is obligated to...</i>						Column B <i>Extent the organization has fulfilled this obligation to...</i>					
1	Statement	1	2	3	4	5	6	1	2	3	4	5	6
1	Provide me with job security.	1	2	3	4	5	6	1	2	3	4	5	6
2	Make a commitment to me for a long time.	1	2	3	4	5	6	1	2	3	4	5	6
3	Offer me opportunities for career development.	1	2	3	4	5	6	1	2	3	4	5	6
4	Won't immediately release me if things are going badly.	1	2	3	4	5	6	1	2	3	4	5	6
5	Offer me another job if my current job would disappear.	1	2	3	4	5	6	1	2	3	4	5	6
6	Do everything in their power to keep me on the job.	1	2	3	4	5	6	1	2	3	4	5	6
7	Put in writing our agreements about my work.	1	2	3	4	5	6	1	2	3	4	5	6
8	Make specific agreements regarding my work.	1	2	3	4	5	6	1	2	3	4	5	6
9	Be very clear about opportunities for advancement in this firm.	1	2	3	4	5	6	1	2	3	4	5	6
10	Specifically describe the performance appraisal criteria used in this firm.	1	2	3	4	5	6	1	2	3	4	5	6
11	Unambiguously describe my obligations within this firm.	1	2	3	4	5	6	1	2	3	4	5	6
12	Unambiguously describe my rights within this firm.	1	2	3	4	5	6	1	2	3	4	5	6
13	Support me personally in difficult periods.	1	2	3	4	5	6	1	2	3	4	5	6
14	Appreciate me for what I do and who I am.	1	2	3	4	5	6	1	2	3	4	5	6
15	Consider not only the end result, but also my personal effort.	1	2	3	4	5	6	1	2	3	4	5	6
16	Treat me as a person, not as a number.	1	2	3	4	5	6	1	2	3	4	5	6
17	Allow me to be myself within this firm.	1	2	3	4	5	6	1	2	3	4	5	6
18	Stick to agreements despite changing circumstances.	1	2	3	4	5	6	1	2	3	4	5	6
19	Be flexible in applying agreements.	1	2	3	4	5	6	1	2	3	4	5	6

20	Consider written or oral agreements as permanently valid.	1	2	3	4	5	6	1	2	3	4	5	6
21	Be clear in outlining expectations.	1	2	3	4	5	6	1	2	3	4	5	6
22	Give me plenty of notice.	1	2	3	4	5	6	1	2	3	4	5	6
23	Support the defined job expectations.	1	2	3	4	5	6	1	2	3	4	5	6
24	Allow me to offer suggestions to work and organization.	1	2	3	4	5	6	1	2	3	4	5	6
25	Allow me to keep work and personal life separate.	1	2	3	4	5	6	1	2	3	4	5	6
26	Leave no room for misinterpretation of my obligations.	1	2	3	4	5	6	1	2	3	4	5	6
27	Recognize my talents as key to the success of the job.	1	2	3	4	5	6	1	2	3	4	5	6
28	Recognize the importance of my skills.	1	2	3	4	5	6	1	2	3	4	5	6
29	Recognize that specific knowledge about the company is necessary to do the job.	1	2	3	4	5	6	1	2	3	4	5	6
30	Realize that special skills are needed to do this job.	1	2	3	4	5	6	1	2	3	4	5	6
31	Notify me of any available financial rewards.	1	2	3	4	5	6	1	2	3	4	5	6
32	Establish a respectful and trusting relationship immediately.	1	2	3	4	5	6	1	2	3	4	5	6
33	Provide development opportunities.	1	2	3	4	5	6	1	2	3	4	5	6
34	Provide any and all materials necessary to do the job.	1	2	3	4	5	6	1	2	3	4	5	6
35	Be truthful even when it may harm the relationship.	1	2	3	4	5	6	1	2	3	4	5	6

Section V. Beliefs About Your Current Job In Your Client Organization

For this **section Va**, consider each statement on a scale of 1-6 as it relates to *your client organization*. Remember, that your client organization may also be your current primary employer, or an external organization, depending upon your employment arrangement.

1 – never	4 – sometimes
2 – rarely	5 – frequently
3 – seldom	6 – always

In my current job, ...

1	I create new ideas for difficult issues.	1	2	3	4	5	6
2	I search out new technologies, processes, working methods, techniques, and/or product ideas.	1	2	3	4	5	6
3	I generate original solutions for problems.	1	2	3	4	5	6
4	I mobilize support for innovative ideas.	1	2	3	4	5	6
5	I acquire approval for innovative ideas.	1	2	3	4	5	6
6	I make organizational members enthusiastic for innovative ideas.	1	2	3	4	5	6
7	I transform innovative ideas into useful applications.	1	2	3	4	5	6
8	I introduce ideas into the work environment in a systematic way	1	2	3	4	5	6
9	I evaluate the utility of innovative behaviors in the workplace.	1	2	3	4	5	6

For this **section Vb**, consider each statement on a scale of 1-6 as it relates to *your overall work performance*.

1 – very poor	4 – good
2 – poor	5 – very good
3 – fair	6 – excellent

1	How would you rate your own work performance?	1	2	3	4	5	6
2	How would a supervisor probably rate your work performance?	1	2	3	4	5	6
3	How would your co-workers probably rate your work performance?	1	2	3	4	5	6

For this **section Vc**, please indicate on a scale of 1-6 the extent each statement is typical of your own behavior.

1 – not at all
 2 – to a little extent
 3 – to some extent
 4 – to a moderate extent
 5 – to a large extent
 6 – to a very large extent

1	I tell outsiders that this organization is a good place to work.	1	2	3	4	5	6
2	I defend the organization when other employees criticize it.	1	2	3	4	5	6
3	I represent the organization favorably to outsiders.	1	2	3	4	5	6
4	I neglect aspects of job responsibilities.	1	2	3	4	5	6
5	I rarely waste time while at work on personal matters.	1	2	3	4	5	6
6	Regardless of circumstance, I produce the highest quality work.	1	2	3	4	5	6
7	I follow work rules and instructions with extreme care.	1	2	3	4	5	6
8	I use professional judgment to assess what is right/wrong for the organization.	1	2	3	4	5	6
9	I make creative work-related suggestions to co-workers.	1	2	3	4	5	6
10	I make innovative suggestions to improve the functioning of the department.	1	2	3	4	5	6
11	I share ideas for new projects or improvements widely.	1	2	3	4	5	6
12	I encourage others to speak up at organizational meetings.	1	2	3	4	5	6
13	I participate in outside groups for the benefit of the organization.	1	2	3	4	5	6
14	I help others who have heavy workloads.	1	2	3	4	5	6
15	I help others who have been absent.	1	2	3	4	5	6
16	I go out of my way to help colleagues with job-related problems.	1	2	3	4	5	6
17	I readily assist my supervisor with his/her work.	1	2	3	4	5	6
18	I try to avoid creating problems for others.	1	2	3	4	5	6
19	I work beyond what is expected.	1	2	3	4	5	6
20	I exceed formal requirements of the job.	1	2	3	4	5	6
21	I go the 'extra mile' for the organization.	1	2	3	4	5	6
22	I only attend work-related meetings if required by the job.	1	2	3	4	5	6
23	I participate in activities that are not required but that help the image of the organization.	1	2	3	4	5	6
24	I avoid extra duties and responsibilities at work.	1	2	3	4	5	6
25	I personally pursue additional training to improve job performance.	1	2	3	4	5	6

For this **section Vd**, please consider each statement about *your job and your client organization* and indicate on a scale of 1-6 the extent of your agreement or disagreement.

1 – disagree strongly 4 – agree slightly
 2 – disagree moderately 5 – agree moderately
 3 – disagree slightly 6 – agree strongly

1	Generally speaking, I am very satisfied with my job.	1	2	3	4	5	6
2	I am generally satisfied with the kind of work I do in this job.	1	2	3	4	5	6
3	I frequently think of quitting this job.	1	2	3	4	5	6
4	I sometimes feel my job is meaningless.	1	2	3	4	5	6
5	I like doing the things I do at work.	1	2	3	4	5	6
6	I feel a sense of pride in doing my job.	1	2	3	4	5	6
7	My job is enjoyable.	1	2	3	4	5	6
8	In general, I believe this organization's motives and intentions are good.	1	2	3	4	5	6
9	This organization is open and upfront with me.	1	2	3	4	5	6
10	I am quite confident that this organization will always try to treat me fairly.	1	2	3	4	5	6
11	This organization can be trusted to make sensible decisions for the future of the organization.	1	2	3	4	5	6
12	This organization would be quite prepared to gain advantage by deceiving employees.	1	2	3	4	5	6
13	This organization is sincere in its attempts to understand their workers' points of view.	1	2	3	4	5	6
14	I would be very happy to spend the rest of my career with this organization.	1	2	3	4	5	6
15	I enjoy discussing this organization with people outside it.	1	2	3	4	5	6
16	I really feel as if this organization's problems are my own.	1	2	3	4	5	6
17	I think that I could easily become as attached to another organization as I am to this one.	1	2	3	4	5	6
18	I do not feel like part of the family at this organization.	1	2	3	4	5	6
19	I do not feel emotionally attached to this organization.	1	2	3	4	5	6
20	This organization has a great deal of personal meaning for me.	1	2	3	4	5	6
21	I do not feel a strong sense of belonging to this organization.	1	2	3	4	5	6

Section VI. Beliefs About Jobs in General

For this section, please consider each statement *about jobs in general* and indicate on a scale of 1-6 the extent of your agreement or disagreement

- 1 – disagree strongly
- 2 – disagree moderately
- 3 – disagree slightly
- 4 – agree slightly
- 5 – agree moderately
- 6 – agree strongly

1	I am capable of dealing with most problems that come up at work.	1	2	3	4	5	6
2	If I can't do a job the first time, I keep trying until I can.	1	2	3	4	5	6
3	When I set important goals for myself, I rarely achieve them.	1	2	3	4	5	6
4	If something looks complicated, I avoid it.	1	2	3	4	5	6
5	When trying to learn something new, I soon give up if I am not initially successful.	1	2	3	4	5	6
6	If a new task seems especially difficult, I become more determined to master it.	1	2	3	4	5	6
7	Initial failures just make me try harder.	1	2	3	4	5	6
8	I feel confident about my ability to do things.	1	2	3	4	5	6
9	I am a self-reliant person	1	2	3	4	5	6
10	A job is what you make of it	1	2	3	4	5	6

Briefly describe anything about your employment arrangement that you feel was overlooked by our study.

Also, please describe any other “sourcing” issues you believe are important with respect to either the IT profession or to the larger IT industry.

Please enter your Study ID here.

This will ensure you do not receive a follow-up letter.
Again, thank you!! We are truly grateful for your participation.

Appendix 5. Descriptive Statistics of Main Study Variables

Variable	N	Mean	SE	Range	Min	Max	Variance	Skewness	SE	Kurtosis	SE
Age	257	37.30	.573	45	19	64	84.508	.427	.152	-.347	.303
Gender	258	.64	.030	1	0	1	.232	-.567	.152	-1.692	.302
CPEAlngth	254	5.273	.2733	25.0	.0	25.0	18.978	1.283	.153	1.952	.304
EAC	258	1.41	.066	4	1	5	1.115	2.624	.152	5.778	.302
EACc_JC	258	3.7016	.08449	5.00	1.00	6.00	1.842	-.081	.152	-.893	.302
EACc_S	258	4.2684	.07259	5.00	1.00	6.00	1.359	-.648	.152	-.033	.302
EACc_B	258	4.1911	.07591	5.00	1.00	6.00	1.487	-.809	.152	.060	.302
OBL_TF	256	3.7109	.08282	5.00	1.00	6.00	1.756	-.451	.152	-.589	.303
OBL_T	256	4.2432	.07878	5.00	1.00	6.00	1.589	-.739	.152	.106	.303
OBL_Sc	256	4.1729	.07639	5.00	1.00	6.00	1.494	-.786	.152	.232	.303
OBL_F	257	4.5613	.06401	5.00	1.00	6.00	1.053	-.907	.152	1.005	.303
OBL_St	256	4.0137	.07546	5.00	1.00	6.00	1.458	-.378	.152	-.359	.303
FOBL_TF	256	4.1527	.08140	5.00	1.00	6.00	1.696	-.557	.152	-.601	.303
FOBL_T	256	3.6924	.08622	5.00	1.00	6.00	1.903	-.110	.152	-.901	.303
FOBL_Sc	256	4.2260	.07211	5.00	1.00	6.00	1.331	-.411	.152	-.577	.303
FOBL_St	256	3.7910	.07755	5.00	1.00	6.00	1.539	-.158	.152	-.430	.303
FOBL_F	257	4.0691	.07344	5.00	1.00	6.00	1.386	-.338	.152	-.503	.303
Volition	255	.20	.025	1	0	1	.158	1.540	.153	.375	.304
OCB_AdP	256	4.3691	.06512	5.00	1.00	6.00	1.086	-.496	.152	-.133	.303
OCB_FuP	256	4.8620	.05120	3.67	2.33	6.00	.671	-.469	.152	.042	.303
OCB_Hlp	255	4.3673	.06509	5.00	1.00	6.00	1.080	-.392	.153	-.202	.304
OCB_Loy	256	4.3177	.07929	5.00	1.00	6.00	1.609	-.768	.152	-.009	.303
OCB_Obe	256	5.0299	.04265	3.00	3.00	6.00	.466	-.451	.152	-.197	.303
IWB	256	4.2378	.05703	5.00	1.00	6.00	.833	-.522	.152	.783	.303
JSAT	257	4.7750	.05847	5.00	1.00	6.00	.879	-.840	.152	.908	.303

Appendix 6. Inter-Correlation Matrix of Main Study Variables

	Age	Gender	CPEA lngh	EAC	EACc _JC	EACc _S	EAC c_B	OOBL _TF	OOBL _T	OOBL _Sc	OOBL _F
Age	1										
Gender	-.091	1									
CPEAlngh	.418**	-.115	1								
EAC	-.005	-.054	-.150(*)	1							
EACc_JC	-.090	.010	.110	.023	1						
EACc_S	-.088	-.087	.112	-.294**	.032						
EACc_B	.084	-.068	.229**	-.515**	.182**	.472**	1				
OOBL_TF	-.054	-.096	.078	-.300**	.090	.346**	.402**	1			
OOBL_T	-.026	-.011	.064	-.344**	.062	.183**	.451**	.506**	1		
OOBL_Sc	-.018	-.129*	-.034	-.145*	.140*	.207**	.281**	.612**	.496**	1	
OOBL_F	-.093	-.089	-.111	-.195**	.084	.142*	.274**	.490**	.657**	.637**	1
OOBL_St	-.062	-.079	-.081	-.069	.173**	.103	.135*	.399**	.452**	.552**	.534**
FOBL_TF	-.174**	.003	.035	-.178**	.170**	.659**	.443**	.353**	.253**	.283**	.184**
FOBL_T	-.076	.032	.088	-.166**	.238**	.400**	.556**	.247**	.510**	.250**	.279**
FOBL_Sc	-.098	-.001	.025	-.054	.354**	.433**	.399**	.159*	.184**	.358**	.181**
FOBL_St	-.178**	-.008	-.136*	-.032	.245**	.377**	.303**	.143*	.224**	.277**	.190**
FOBL_F	-.172**	.020	-.040	-.071	.308**	.406**	.445**	.159*	.243**	.224**	.305**
Volition	-.049	.029	-.253**	.494**	-.025	-.260**	-.408**	-.196**	-.160*	-.024	-.011
OCB_AdP	.051	.111	.023	-.003	.181**	.025	.142*	.177**	.174**	.239**	.201**
OCB_FuP	.043	-.050	.007	-.120	-.001	.128*	.177**	.145*	.147*	.152*	.187**
OCB_Hlp	.003	-.080	-.021	.022	.013	.051	.011	.092	.058	.133*	.182**
OCB_Loy	-.003	.031	.094	-.059	.213**	.431**	.393**	.126*	.102	.164**	.037
OCB_Obe	-.002	-.206**	-.096	.006	-.069	.048	.002	.039	.171**	.097	.181**
IWB	-.058	.183**	-.067	-.015	.192**	.090	.081	.114	.111	.221**	.176**
JSAT	.061	-.001	.050	-.013	.134*	.227**	.173**	.099	.115	.160*	.153*

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

Appendix 6. Inter-Correlation Matrix of Main Study Variables (continued)

	OOBL _St	FOBL _TF	FOBL _T	FOBL _Sc	FOBL _St	FOBL _F	Volition	OCB _AdP	OCB _FuP	OCB _Hlp	OCB _Loy	OCB _Obe	IWB	JSAT
OOBL _St	1													
FOBL _TF	.126*													
FOBL _T	.196**	.647**												
FOBL _Sc	.207**	.644**	.634**	1										
FOBL _St	.437**	.510**	.545**	.686**	1									
FOBL _F	.156*	.642**	.701**	.789**	.635**	1								
Volition	-.095	-.220**	-.181**	-.089	-.120	-.104	1							
OCB _AdP	.232**	.080	.226**	.246**	.210**	.161**	.061	1						
OCB _FuP	.102	.124*	.125*	.218**	.123	.170**	.001	.491**	1					
OCB _Hlp	.284**	-.001	.007	.047	.097	.013	-.023	.320**	.365**	1				
OCB _Loy	.087	.515**	.456**	.665**	.488**	.617**	-.167**	.266**	.321**	.057	1			
OCB _Obe	.137*	-.039	.041	.069	.098	.060	.024	.195**	.388**	.269**	.054	1		
IWB	.195**	.099	.178**	.286**	.274**	.197**	.122	.703**	.489**	.301**	.265**	.195**	1	
JSAT	.098	.311**	.335**	.468**	.350**	.450**	-.068	.361**	.367**	.129*	.481**	.278**	.328**	1

** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

ABOUT THE AUTHOR

Sandra Kay Newton received her Bachelor's Degree in 1985 in Business and Management from University of Maryland University College and a Master's Degree in 1987 in Business Administration and Human Resources Development from Webster University. She weaved her education in with her full-time and part-time service to her country from 1970 to 1999, when she retired in the grade of Chief Warrant Officer Five with over 20 years of active military service.

The idea of a second career in academia was fostered by family and from having the opportunity to teach part-time at the university level. She completed her Doctorate Degree in Business Administration with a concentration in Management Information Systems at the University of South Florida in 2006. Her plans are now to weave travel, golf, gardening and all the many joys of family and life together with her career in academia.