

## **Employer obligations versus fulfillment and the effects on organizational citizenship and innovative work**

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### **Abstract**

This research investigated the relationship among discrepancies between the employers' obligations and the level of fulfillment of those obligations and the information technology (IT) professionals' citizenship and innovative work behaviors. The dimensional approach to the psychological contract was used to demonstrate the IT professional's perceptions of their employer's obligations and the level of fulfillment of those obligations. Survey data from 229 IT professionals across the United States were collected. Lower discrepancies were found to have a positive relationship with the loyalty citizenship behavior and innovative work behavior. These findings support using the dimensional approach in psychological contract research.

Keywords: Psychological contract, organizational citizenship, IT professionals, innovative work, IT management



## **Introduction**

In the management literature, the concept of the “psychological contract” has emerged as an effective way of understanding what employees are prepared to contribute and what they expect to receive in return from their employers. Employees have implicit expectations about the nature of the employment arrangement, assuming that if they perform in a certain way that they will receive specific kinds of rewards and benefits from their employer. In retrospect, employers must determine which aspects of the employee’s psychological contract are important to them. Typically, employees may expect that their employers will treat them with respect, provide all materials and equipment necessary to complete the job, and be clear in outlining job performance expectations. But to what extent does the employee believe these are important; and then to what extent does the employee believe their employer has fulfilled these obligations? Since the late 1980s, numerous studies have examined the contents of the psychological contract with various studies identifying a range of employee and employer promises.

Employees, such as information technology (IT) professionals, are expected to be multi-talented and innovative, even as organizations are focusing on cutting costs and downsizing, yet striving to fulfill management goals (Koch, 2006). This degree of creativity and innovativeness may be implied to an IT professional’s job, but it relates to two extra-role behaviors, innovative work and organizational citizenship, which are highly sought after by management. These work behaviors go beyond the routine performance, but still affect organizational effectiveness.

## **Psychological Contracts**

Psychological contracts of individuals are theorized to unite them with their organizations and regulate their behaviors, thus fulfilling management goals (Robinson, Kraatz, & Rousseau, 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), and innovative work. The level of fulfillment of the psychological contract, or it being breached or violated result in lower job satisfaction (Robinson & Rousseau, 1994), organizational commitment (Coyle-Shapiro & Kessler, 2002), and organizational citizenship behaviors (Coyle-Shapiro, 2002; Newton, Blanton, & Will, 2008; Robinson, 1996; Robinson & Morrison, 1995).

## **Organizational Citizenship and Innovative Work**

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; 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; Newton, Blanton, & Will, 2008; Van Dyne & Ang, 1998).

Practitioners struggle with implications of how an employee perceives the implicit and explicit obligations of the firm and its fulfillment of those perceived obligations 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).

Perceptions of the work environment from individual employees affect their attitudes and behaviors. This research focuses on the individual's work environment and how the employee's perceptions regarding their employer's obligations and fulfillment of those obligations affect the employee's organizational behaviors, both organizational citizenship and innovative work. 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.

## **Literature Review**

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). Either one has an expectation to receive some semblance of gratitude when a service has been completed, resulting in a shared exchange between parties, or with reciprocity norm, one might become obligated once a service has been completed. Either way, employees try to make sense of the social context in which they work, and this sense-making ultimately affects their perceptions, attitudes, and subsequent actions (Salancik & Pfeffer, 1978).

## **Psychological Contract**

The large body of research concerned with the employee's psychological contract and its effects continues to be varied (Lester & Kickul, 2001; Rousseau, 1995; Schein, 1980). Researchers have applied Rousseau's (1989; 1995) psychological contract concept to frame their research (Agarwal, De, & Ferratt, 2001; Coyle-Shapiro & Kessler, 2002). The psychological contract has also been treated as an antecedent to the helping dimension of OCB of professional workers of service organizations (Van Dyne & Ang, 1998). Van Dyne and Ang (1998) found regular employees exhibited helping behaviors even when they held lower perceptions of their psychological contracts.

This study looks at the psychological contract using the dimensional and evaluative approach, as more recent studies have expanded beyond the content approach of earlier research. (Robinson, 1996; Rousseau, 1990; Van Dyne & Ang, 1998). 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, Noonan, & Elron, 1994; Newton, Blanton, & Will, 2008; Robinson et al., 1994; Robinson & Morrison, 1995; Robinson &

Rousseau, 1994; Turnley, Bolino, Lester, & Bloodgood, 2003). Research on permanent employees suggests that employee's 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). This consequence may be one of disappointment, anger, or mistrust, but it leads to the extent that the contract has been fulfilled. 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, such as lower trust and job satisfaction (Robinson & Rousseau, 1994), lower organizational citizenship behavior (Coyle-Shapiro, 2002), 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).

The dimensional approach distinguishes the psychological contract through particular traits or adjectives that characterize summary properties (e.g., McLean Parks et al., 1998; Sels, Janssens, & Van Den Brande, 2004). Six psychological contract dimensions outlined in McLean Parks et al. (1998) are adopted for this study: stability, scope, tangibility, time frame, particularism, and focus. These dimensions and definitions are parsimonious with prior research and work well with the ever-evolving employment arrangement in today's IT work environment.

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) states that stability is the degree in which the psychological contract is limited in its ability to evolve and adjust without an implied renegotiation of the contract conditions. 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. 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).

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.

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.

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.

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 represent these types of individuals.

According to Robinson (1996), certain implicit promises and obligations and the employee’s perceptions of the employer’s fulfillment, act as motivators or barriers to desirable work attitudes and behaviors. Lester and Kickul (2001) examined how perceived discrepancies between the importance of and fulfillment of specific psychological obligations affect employee reactions at work. They found that these types of discrepancies significantly impacted employee satisfaction and intention to leave the organization. These discrepancies also affected employee performance. To date, studies have not been conducted that examine perceived discrepancies in the IT professional’s psychological contract and its affect on their organizational citizenship behavior and innovative work behaviors. This study will analyze the discrepancies using the “dimensional approach” when looking at the psychological contract.

### **Organizational Behaviors**

Research often tries to distinguish between “dependable role performance” and “innovative and spontaneous behavior” (Katz, 1964, pg. 132). Yet, the bottom line for most organizations is to have employees who not only exhibit behaviors that are beyond the dependable role performance, but also exhibit innovative and spontaneous behaviors, such as organizational citizenship behaviors and innovative work behaviors. It’s these behaviors beyond the normal job requirements that are often required of organizational members so that organizations can not only survive, but also function effectively (Katz, 1964; Katz & Kahn, 1978).

### **Organizational Citizenship Behaviors**

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). Although no one deed is going to bring about significant overall improvements to the organization, researchers was investigated the “aggregate” (pg. 6) of these actions, as well as the particular behaviors (Organ, 1988).

Helping refers to the extent that the individual offers discretionary actions to other individuals or a group as defined by (Smith et al., 1983). Loyalty, obedience, advocacy and functional participation as defined by Van Dyne, Graham, and Dienesch, are adopted for this study. 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” (pg. 767). 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” (pg. 767). Advocacy participation refers to “behaviors that are targeted at other members of the organization and reflect a willingness to be

controversial;” and describes innovation as “maintaining high standards, challenging others, and making suggestions for change (Van Dyne, Graham, & Dienesch, 1994, 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.”

Throughout the OCB literature, there is debate as to accuracy of OCB dimensions (e.g., LePine, Erez, & Johnson, 2002; Organ, 1997; Van Dyne et al., 1994), yet 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. This study recognizes 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 (Van Dyne & Ang, 1998). 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; Smith et al., 1983; Van Dyne et al., 1994). These behaviors fit within the conceptual realm of those that might be most appropriate when considering IT professionals and their potential contributions to the organization.

### **Innovative Work Behaviors**

Innovation or innovative work is defined in the literature a multitude of ways (Kanter, 1983; Van de Ven, 1986; West & Farr, 1990b). The concept of innovative work behavior 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” and empirically tested by Janssen (2000) is adopted for this study.

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. Therefore, 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.

### **Hypotheses**

This research builds on existing theories of psychological contracts and social information processing. 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). 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.

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. Based on the literature, 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. In other words, discrepancies between what the employee perceives as the employer's obligations and what the employee perceives the employer has actually delivered should have a direct influence on organizational citizenship behavior.

Consequently, the following research hypothesis is proposed:

*Hypothesis 1:* Lower discrepancies between the employee's perceived employer obligations and the 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 (1988) recommends the collective act of citizenship behaviors, as is tested in Hypothesis 1, 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 (Ang & Slaughter, 2001; Van Dyne & Ang, 1998). 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 1a:* Lower discrepancies between the employee's perceived employer obligations and the 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 1b:* Lower discrepancies between the employee's perceived employer obligations and the 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 1c:* Lower discrepancies between the employee's perceived employer obligations and the 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 1d:* Lower discrepancies between the employee's perceived employer obligations and the 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.

*Hypothesis 1e:* Lower discrepancies between the employee's perceived employer obligations and the 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.

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 2:* Lower discrepancies between the employee's perceived employer obligations and the 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 Methodology**

### **Participants and Procedure**

The participants were 229 IT professionals, who were alumni with MIS degrees or graduate students from MIS evening classes from a large, Southeastern university. Of the 229 participants, 63 percent were male and 37 percent were female. The average age was 38 years ( $SD=8.7$ ), with the minimum age of 22 years and the maximum age of 64 years. The average length on their current job position was 9.7 years ( $SD=6.34$ ). Participants were employed full-time in a variety of occupational fields including: finance and banking, education, information technology, insurance, healthcare, accounting, manufacturing, healthcare, and government. Participation was strictly voluntary, and data from the convenience sample were collected through an on-line survey, as well as a group-administered survey. T-tests conducted found no significant differences between the two types of surveys, as well as those who responded to the survey and those who chose not to respond in any of the demographics collected at  $\alpha = .01$ .

### **Measures**

A number of variables were included in the survey, and the following pertain to this aspect of the study.

#### **Psychological Contract Obligations and Fulfillment.**

Participants were asked to indicate the level of extent that they perceived their organization's obligations to specific psychological contract attributes using a six-point Likert scale of 1 (not at all) to 6 (to a very large extent). The participants were then asked to indicate the level of extent that they believed their organization had fulfilled those corresponding obligations.

These items indicating the level of fulfillment of the organization's obligations were also measured on a six-point Likert scale with response choices of 1 (not at all) to 6 (to a very large extent). The psychological contract discrepancy scores were calculated by subtracting the employee's fulfillment ratings from their obligation ratings for each psychological contract item. The discrepancy scores of the psychological contract items within each dimension were then summed and averaged to create the variables used in the analyses.

**Stability Dimension.** The stability dimension to the psychological contract was measured using three items from Sels et al. (2004). This scale had a demonstrated reliability of 0.80.

**Scope Dimension.** The scope dimension to the psychological contract was measured using eight items from Sels et al. (2004). Three of the items were removed during the reliability and factor analyses due to insufficient loadings. The remaining five-item scale had a demonstrated reliability of  $\alpha = 0.92$ .

**Tangibility Dimension.** The tangibility dimension to the psychological contract was measured using seven items from Sels et al. (2004). Two of the items were removed during the reliability and factor analyses due to insufficient loadings. The remaining five-item scale had a demonstrated reliability of  $\alpha = 0.89$ .

**Time Frame Dimension.** The time frame dimension to the psychological contract was measured using eight items from Sels et al. (2004). Three of the items were removed during the reliability and factor analyses due to insufficient loadings. The remaining five-item scale had a demonstrated reliability of  $\alpha = 0.89$ .

**Particularism Dimension.** Four items were developed to measure and operationalize the particularism dimension to the psychological contract using the domain definition from McLean Parks et al. (1998). One of the items did not load sufficiently during the reliability and factor analyses; the remaining three-item scale had a demonstrated reliability of  $\alpha = 0.86$ .

**Focus Dimension.** Five items were developed to measure and operationalize the focus dimension to the psychological contract using the domain definition from McLean Parks et al. (1998). One of the items did not load sufficiently during the reliability and factor analyses; the remaining four-item scale had a demonstrated reliability of  $\alpha = 0.87$ .

## **Organizational Citizenship Behavior**

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 of 1 (not at all) to 6 (very large extent) was used to measure the dimensions of OCB.

**Loyalty Dimension.** The loyalty dimension to OCB was measured using three items on a six-point Likert scale, and is an adaptation of Coyle-Shapiro (2002). This scale had a demonstrated reliability of  $\alpha = 0.88$ .

**Helping Dimension.** The helping dimension to OCB was measured using five items on a six-point Likert scale, and is an adaptation of the Coyle-Shapiro (2002). Two of the items were removed during the reliability and factor analysis due to insufficient loadings. The remaining three-item scale had a demonstrated reliability of  $\alpha = 0.83$ .

**Advocacy Participation Dimension.** The advocacy participation dimension of OCB was measured using six items on a six-point Likert scale, and is an adaptation of Coyle-Shapiro

(2002). Two of the items were removed during the reliability and factor analysis due to insufficient loadings. The remaining four-item scale had a demonstrated reliability of  $\alpha = 0.87$ .

**Obedience Dimension.** The obedience dimension of OCB was measured using four items on a six-point Likert scale, and is an adaptation of Coyle-Shapiro (2002). One of the items was removed during the reliability and factor analysis due to insufficient loadings. The remaining three-item scale had a low demonstrated reliability of  $\alpha = 0.68$ . This low reliability is consistent with other research, consequently the variable was continued in the analyses.

**Functional Participation Dimension.** The functional participation of OCB was measured using seven items on a six-point Likert scale, and is an adaptation of Coyle-Shapiro (2002). The items used in this scale did not load as theorized by prior research, and consequently were removed from further analysis and testing of Hypothesis 1e.

### **Innovative Work Behavior**

Innovative work behavior was measured using the nine-item innovative work behavior scale developed by Janssen (2000). Janssen (2000) used a seven-point scale ranging from 1 (never) to 7 (always); however, to remain consistent throughout the measurement instrument, a six-point scale with end choice points of 1 (never) to 6 (always) was used. Cronbach's alpha for this scale was 0.92.

### **Control Variables**

In the data analyses, three additional variables were controlled for in order to rule out alternative explanations in the findings: age, gender, and tenure. Tenure and gender are offered as possible moderators between the antecedents and OCB to account for unexplained variance in correlations (Organ and Ryan 1995). Additionally, Stamper and Van Dyne (2001) found age, gender, and organizational tenure related to work status.

### **Results**

First, the scale analyses, including assessing reliability and validity, and data reduction through factor analysis, were conducted. Second, the research hypotheses were tested using the multivariate techniques, multivariate analysis of variance (MANOVA), and regression analysis. SPSS, Version 14.0, was used in this process. The items retained for each construct were summed and averaged creating the variables used in the analysis. A correlation matrix of all the variables in this study appears in Table 1.

**Table 1. Correlation Matrix of Variables**

	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Age	37.690	8.700													
2 Gender	n/a	n/a	-0.107												
3 JobLength	9.710	6.340	0.520**	-0.006											
4 InnovativeWork	4.246	0.897	-0.09096	0.108	0.034										
5 TimeFrame	-0.212	1.348	0.087	-0.121	0.063	0.017									
6 Tangibility	0.514	1.121	0.041	-0.098	0.020	-0.118	0.631**								
7 Scope	-0.058	1.282	0.101	-0.150*	0.031	-0.030	0.688**	0.607**							
8 Stability	0.288	1.212	0.082	-0.121	0.039	-0.093	0.578**	0.634**	0.672**						
9 Particularism	0.313	1.209	0.088	-0.173**	0.098	0.000	0.602**	0.615**	0.730**	0.610**					
10 Focus	0.522	1.299	0.049	-0.107	0.031	-0.074	0.639**	0.739**	0.724**	0.668**	0.787**				
11 Loyalty	4.297	1.294	0.006	0.114	0.008	0.268**	-0.340**	-0.441**	-0.430**	-0.434**	-0.488**	-0.553**			
12 Obedience	4.996	0.676	0.012	-0.161*	-0.021	0.298**	0.053	0.034	0.118	0.053	0.148	0.083	0.082		
13 AdvocacyPart	4.411	1.045	0.003	0.062	0.010	0.716**	0.070	-0.050	0.020	0.021	0.013	-0.015	0.279**	0.354**	
14 Helping	4.370	1.022	-0.082	-0.026	-0.050	0.382**	0.086	-0.050	0.055	0.082	0.055	0.061	0.117	0.224**	0.381**

Pearson Correlations \*\*p<.01 (2-tailed) \*p<.05 (2-tailed)

Note: Values for age and tenure are expressed in years

Hypothesis 1 suggested that lower discrepancies between the employee's perceived employer obligations and the fulfillment of their employer's obligations of the psychological contract would be positively related to higher levels of the IT professional's organizational citizenship behaviors. Here, MANOVA was used in order to address the four organizational citizenship behaviors simultaneously as dependent variables in the model. The correlations for OCB dependent variables, loyalty, obedience, advocacy participation, and helping, ranged from .082 to .381. Age, gender, and tenure were not entered as covariates in the MANOVA as their correlations with the dependent variables were minimal ranging from .003 to -.161, which was the greatest correlation between gender and obedience.

The discrepancy scores of the psychological contract variables were entered as independent variables, time frame, tangibility, scope, stability, particularism, and focus, to explain the levels of IT professional's organizational citizenship behaviors. Only main effects of the variables were placed in the model, as neither full factorial design, nor any type of interaction between the independent variables, was possible. Levene's Test of Equality of Error Variances was insignificant at  $\alpha = .05$  for all dependent variables. The four omnibus MANOVA test statistics were generated and all were significant with an F-Statistic = 95.126 and Sig. = .000, signifying support for Hypothesis 1. At  $\alpha = .05$  cut-off, Roy's Greatest Root test statistic was significant for the five of the discrepancy psychological contract variables representing lower levels of discrepancy between level of the fulfillment and their employer's obligations, time frame (F-Statistic 2.217 and Sig. = .004), tangibility (F-Statistic = 1.776 and Sig. = .037), scope (F-Statistic = 2.001 and Sig. = .010), particularism (F-Statistic = 3.311 and Sig. = .000), and focus (F-Statistic = 2.031 and Sig. = .012), but not for variable stability (F-Statistic = 1.483 and Sig. = .131).

As for the tests of between- subjects effects, independent variables, time frame (F-Statistic = 2.193, Sig. = .004) and scope (F-Statistic = 1.853, Sig. = .019), were significant at  $\alpha = .05$  with the dependent variable, loyalty. Independent variable, particularism (F-Statistic = 1.482, Sig. = .055), was significant at  $\alpha = .10$  with the dependent variables, loyalty. No further analysis of separate univariate tests or post hoc analyses was possible for the EA characteristic variables.

Researchers often look at each organizational citizenship dimension separately (Coyle-Shapiro, 2002), accordingly, it was alternatively proposed that lower discrepancies between the employee's perceived employer obligations and the fulfillment of their employer's obligations of the psychological contract would be positively related to higher levels of each of the IT professional's organizational citizenship behavior dimensions – helping, loyalty, obedience, and advocacy participation, representing Hypotheses 1a – 1d.

Regression analyses were conducted for each of the four dimensions of OCB as the dependent variable and the six psychological contract discrepancy variables, time frame, tangibility, scope, stability, particularism, and focus. Age, gender and tenure were also entered into the equation. Because of possible multicollinearity issues with the independent variables (correlations ranged from .006 to .787), no interaction was investigated in any of the models, only main effects were assessed.

Hypothesis 1a – helping. The model using the six psychological contract discrepancy variables, time frame, tangibility, scope, stability, particularism, and focus, along with age, gender, and tenure as the independent variables to explain the dependent variable, helping citizenship behavior, was not significant at  $\alpha = .10$  cutoff with an F-Statistic of 1.326 and Sig. = .225. Hypothesis 1a was not supported.

Hypothesis 1b – loyalty. The model using the same 9 independent variables as Hypothesis 1a to explain the dependent variable, OCB\_loyalty (Loy), was significant at  $\alpha = .05$  with an F-Statistic of 12.328 and Sig. = .000, as shown in Table x. Hypothesis 1b was supported with an Adjusted  $R^2 = .34$ . The regression coefficients in order of significance are presented in Table 2.

**Table 2. Regression coefficients of Hypothesis 1b - Loyalty**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	S.E.	Beta		
(Constant)	4.305	.358		12.033	.000
Focus	-.376	.110	-.370	-3.414	.001
Particularism	-.147	.106	-.134	-1.391	.166
Stability	-.121	.088	-.112	-1.375	.170
Time frame	.076	.079	.078	.952	.342
Tangibility	-.090	.103	-.076	-.874	.383
Age	.006	.010	.041	.627	.531
Gender	.086	.152	.032	.567	.571
Tenure	.033	.013	.015	.237	.813
Scope	-.006	.098	-.006	-.059	.953

Hypothesis 1c – obedience. The model using same independent variables to explain the dependent variable, obedience, was not significant at  $\alpha = .10$  with an F-Statistic of 1.333 and Sig. = .221. Hypothesis 1c was not supported.

Hypothesis 1d – advocacy participation. The model using the same previous independent variables to explain the dependent variable, advocacy participation, was not significant at  $\alpha = .10$  with an F-Statistic of .658 and Sig. = .747. Hypothesis 1d was not supported.

Hypothesis 2 – innovative work behavior. Hypothesis 2 theorizes that lower discrepancies between the employee's perceived employer obligations and the 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. Regression analysis was again conducted using innovative work behavior as the dependent variable and the six psychological contract discrepancy variables, as well as age, gender, and tenure as the independent variables.

The model using the nine independent variables to explain the dependent variable, innovative work behavior, was significant at  $\alpha = .10$  with an F-Statistic of 1.728 and Sig. = .084, signifying support for Hypothesis 2 with a low Adjusted  $R^2 = .03$ . The regression coefficients in order of significance are presented in Table 3.

**Table 3. Regression coefficients of Hypothesis 2 – Innovative Work Behavior**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	S.E.	Beta			
1	(Constant)	4.645	.295		15.747	.000
	Age	-.014	.008	-.134	-1.727	.086
	Tangibility	-.146	.085	-.178	-1.719	.087
	Time frame	.105	.065	.156	1.610	.109
	Gender	.186	.125	.100	1.488	.138
	Particularism	.122	.087	.161	1.403	.162
	Tenure	.013	.011	.089	1.148	.252
	Stability	-.069	.073	-.091	-.945	.346
	Focus	-.075	.091	-.107	-.828	.408
	Scope	.010	.081	.014	.126	.900

## Discussion

The current investigation examined how the difference between the IT professional's perceptions of their organization's obligations and the level of fulfillment of those obligations affected their innovative work behavior and organizational citizenship behaviors, specifically loyalty, obedience, advocacy participation and helping. Innovative work and citizenship are two qualities deemed central for many IT professional's work behavior (Kanter, 2006; Varon, 2005). It's also central for employers to understand the essence of the psychological contract from the employee's point of view. IT professionals, whose relationship with their employer is not where they'd like it to be, meaning the discrepancy is larger than it could be, may not participate as actively as they could within the job or project, e.g., not help others, not defend the organization, may not go that "extra mile." And even though organizational citizenship behaviors don't fall in line with the traditional job performance requirements, these behaviors are often expected by supervisors (Ang & Slaughter, 2001). But how is a manager to determine when an employee is holding back, and not going that "extra mile?" This study provides empirical evidence demonstrating that lower discrepancies between the employee's perceived employer obligations and the fulfillment of their employer's obligations of the psychological contract dimensions, specifically time frame, tangibility, scope, stability, particularism, and focus, are positively related to higher levels of the IT professional's organizational citizenship behaviors as a collective. Examined independently, lower discrepancies significantly impact loyalty and innovative work behavior. IT professionals in this study were willing to perform more innovatively and exhibit citizenship behaviors for the good of their organizations when perceptions of their employer's obligations were fulfilled in such a manner that the discrepancy was low.

The IT professionals' citizenship behaviors, especially loyalty, were strongly affected by the lower discrepancies with the time frame, scope and particularism dimensions of the psychological contract. Time frame refers to job security, commitment, and doing everything in the employer's power to keep them on the job. Scope refers to support, appreciation of one's work, consideration of personal effort, and their treatment on the job. Particularism refers to

acceptance of importance of their skills, realization that special skills are needed, and recognition that specific knowledge is necessary. It was the lower discrepancies of the time frame, scope, and particularism dimension that were positively related to higher levels of organizational citizenship behaviors and specifically the higher the IT professional's intended level of loyalty to the employer.

Employers can never have too many loyal employees. IT professionals in this study indicated that they would be willing to tell outsiders that their organization is a good place to work; they would defend the organization when others criticize, and they would represent the organization favorably to outsiders.

Market and economic challenges of an organization do not affect IT professionals, in that they are still expected to bring forth innovation and creativity (Christensen, 2006). Therefore, IT professionals were found to be more willing to make suggestions, generate original solutions for problems, and share ideas, when their employer had fulfilled their perceived obligations in the employment relationship. In today's IT labor market, it's paramount that employer's are clear about the employee's obligations within the organization. West and Farr (1990a) recognize innovative work behavior can be an intentional act, which can be withheld, as easily as it can be performed.

## **Conclusion**

This study investigated innovative work behavior of IT professionals and used the dimensional approach to the psychological contract, both under-researched. This study found an IT professional's innovative work may be influenced by the level of discrepancy between the employer's obligations and the levels of fulfillment of those obligations, dimensional aspects of their psychological contract. Because there can be a very complex employer-employee relationship of those in the IT industry, the dimensional approach offered greater understanding of the psychological contract and the motivations behind the IT professional.

For practitioners, the results indicate that the IT professional's perceptions are very relevant in the employee-employer relationship. There was a strong relationship found between the citizenship behavior – loyalty and low discrepancy between the employer's obligations and level of fulfillment of the IT professional's psychological contract. Management should continue to recognize that clear communication between the employer and employee is critical.

Management can always improve the employer-employee relationship. They can identify specific items within the dimensions of the IT professionals' psychological contract that could improve the relationship easily. If managers are willing to make simple gestures, such as expressing appreciation to their IT professionals, researchers have found that this can improve a situation considerably (Motti, 2006). Check the moral of the company. Improving communications about opportunities for advancement and professional development, or investigating ways to show appreciation for work performance, these are changes that can be accomplished with minimal effort within any organization.

Understanding the diversity of the IT professional's psychological contract can be key when organizations are trying to reassess their human resource strategies (Rousseau, 2000). If only for this reason, it is important for organizations to recognize the subtle differences found in the psychological contracts of those IT professionals. Organizations might want to clarify aspects of the employment relationship in order to build clear expectations for their IT professionals. Clear and ongoing communication from management about work expectations and rewards is

essential for building employee loyalty. Loyal employees are the organization's "good will" ambassadors, bringing in other talented workers and perhaps, new business. If an organization follows through on its commitments to its employees, it is investing in the long-term health of the employee-employer relationship and conceivably even the bottom-line.

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