

# IMPACT OF EMPLOYMENT STATUS ON INFORMATION SECURITY POLICY COMPLIANCE

## ABSTRACT

*One of the challenging tasks that an organization faces is to ensure the security of its information system. Prior IS research has identified strategies for motivating employees compliance with information security. The present study investigates the impact of employment status on organizational commitment and perceived organizational support of employees, and how that affects behavioral intention to comply with Information Security Policy (ISP). Employment status was found to impact the level of organizational commitment and perceived organizational support which, in turn, affects behavioral intention to comply with ISP. The present study supports the notion that the effect of organizational commitment and perceived organizational support on behavioral intention to comply with ISP is stronger among permanently employed individuals. However, this research did not find evidence that perceived response cost of performing a behavior would negatively impact organizational commitment.*

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**Keywords:** *Permanent and temporary employees, Organizational Commitment, Perceived Organizational Support, information security policy compliance*

## INTRODUCTION

Over recent decades, the reliance of organizations on information technology has increased. The increasingly global and inter-connected institutions have led to heavy reliance on information system (IS) and internet based mechanisms. This dependence on computerized information systems to combat globalization and competitive economic environment has also brought attention to the probable security threats. The threat to IS security can be categorized as external threat that includes both human and non-human factors and internal threat that includes both human and non-human factors (Loch et al. 1992). However, the greatest amount of threat of all comes from the organizational member who is a 'trusted agent' inside the firewall (Im & Baskerville 2005; Stanton et al. 2005; Willison 2006; Warkentin & Willison 2009). The harm to the IS from the organizational member can be a deliberate effort or a passive noncompliance

with security policies (Warkentin & Willison 2009). There has been dramatic increase in security breaches through intentional and unintentional insider threats as 49% of the respondents experienced malicious insider attacks in 2007 as opposed to 36% in 2004 (CSO 2004 and 2007). This statistic may underestimate the problem of security threat as only a fraction of security incidents are actually discovered (Whitman 2003), and only fraction of it is disclosed fearing negative publicity (Richardson 2007).

While IS security risk has often been seen by computer engineers as a technology problem that can be addressed through hardware and software solutions, MIS researchers have focused on human perpetrators of IS security threat that are behind the firewall of the organization (Warkentin & Willison 2009; Mitnick and Simon 2002). To this end, research has identified behavioral aspects of IS security that are critical to employee compliance with ISP (Warkentin & Willison 2009), applying Protection Motivation Theory (PMT) (e.g., Johnston and Warkentin 2010), General Deterrence Theory (e. g. D'Arcy, et al. 2009), and organizational security cycles (e.g. Straub and Welke 1998; Willison and Warkentin 2010). The present study applies a unique perspective on the issue of organizational information security by relating it to the common work attitude variable known as organization commitment (OC) and perceived organizational support (POS) among contractual employees hired through temporary work agencies. With the existence of different forms of employment in an organization, it would be beneficial for an organization to look at the differences in the compliance of the security policies from the perspective of organizational commitment and perceived organizational support of temporary and permanent employees. This present study evaluates the impact of two different forms of employment, namely permanent and temporary, on the impact of organizational commitment and perceived organizational on behavioral intention to comply with information security policies and procedures.

## **LITERATURE REVIEW**

The nonstandard work arrangements such as that of temporary (“temp”) employees through temp agencies involve the externalization of administrative control and responsibility (Pfeffer & Baron 1988). This nonstandard relationship creates "detached" workers (Summers 1997) or "triangular" employment relations where an employee establishes connections with several employers (Bronstein 1991; Vosko 1997). This brings three different issues to the focus: the organizational

commitment of these temp employees (hired from the agency), their perceived organizational support and the perceived contribution (perceived employee effectiveness). The Reciprocity Norms Theory and Social Exchange Theory propose that contingent workers such as temp employees will have less encouraging exchange relationships than regular employees because of the different inducements these two types of employees receive from organizations (Rousseau 1997; Sherer 1996). In the condition of voluntary temporary employment, where workers individuals have the luxury to choose their work status, contingent workers exhibit less organizational citizenship behavior, perceived fewer employer obligations to be part of their psychological contracts, and had lower affective commitment (Dyne and Ang 1998). The more the temp employees feel that they have no choice but to work as temporary employees, the more committed they are to the temporary agency, but not to the client-manager and are less likely to gain variety and skills (Hippel et al. 1997). Also, the involuntary contingent employees will tend to have lower levels of perceived organization support than voluntary contingent workers and regular workers (Eisenberger et al. 2004). The permanent employees working in the organization have a higher investment in the organization and thus, they are more committed to the organization than temporary workers (Sverke et al. 1999; Coyle-Shapiro and Kessler 2002). With the labor market having dual or even multiple labor types in the same organization, the issues of employment relations, social comparison and organizational commitment have been raised (Rousseau 1997). Thus, the status of the employment will affect the security compliance by the employees.

There has been very limited research on organization commitment and perceived organizational support (POS) as a direct antecedent of IS security compliance. Except for Shropshire, et al. (2012), the research has been limited to using commitment, organizational support, perceived expectation, etc. as control variables. Also, there has been limited research that analyzes IS security compliance from the view point of temp employees. Organizational commitment of employees has a positive linkages to job performance, citizenship behavior, and enactment of beneficial information security behaviors such as changing passwords and negative linkages to counterproductive workplace behaviors such as computer abuse, data theft, etc. (Stanton et al. 2003). The level of organizational commitment positively affects the intentions to follow security policies (Herath and Rao 2009).

As per the Organizational Support Theory, POS raises the affective commitment of the employees towards the organization and encourages employees in achieving the organizational goals (Eisenberger et al. 1986; Rhoades & Eisenberger 2002). These studies have stated that employees who receive support from the organization believe it as a commitment of the organization towards them and pay it through commitment towards the organization. Greene and D'Arcy (2010) have examined the influence of security related and employee-organization relationship factors such as POS on users' IS security compliance decisions. Security culture which implies commitment from top level for computer security, employees' job satisfaction and perceived organizational support by employees all have positive impact on security compliance intention (D'Arcy and Greene 2009).

While deciding whether to comply or not comply with the organization's ISP, the employee considers the costs or effort of doing so and this perceived response cost may negatively influence his attitude (Bulgurcu et al. 2010). The perceived response cost of performing security behavior has been widely studied in IS field. When an employee believes that there are costs of performing an activity or complying with a policy, he may decide against it which otherwise in absence of any response cost, he would have performed or complied with. People are willing to perform an activity as long as it doesn't cost them additional time, money or effort. In IS field, the cost such as time, money, and effort that incurs during the security practices is often noted as the reason employee put lower emphasis on security policy (Herath and Rao 2009).

## **THEORY AND HYPOTHESES**

### **Research Questions/Scope of Study**

The temp employees hired through temporary work agencies find it difficult to satisfy their obligations simultaneously to two employers – the agency and the client. With absence of better pay, benefits and promotions, temporary employees are generally looking for a better opportunity outside the company they are currently working for. This raises the question of temp employees' organizational commitment and loyalty and presents conflicts and contradiction with respect to lines of authority and workload (Geary 1992; Rogers 1995). A major challenge within an organization is to encourage its diverse employees to comply with IS security policies. Previous research shows that employees may violate security policies with malicious intention or to expedite their work process. However, there has been little mention about the security

compliance of temp agency employees who the organization hires from these agents for a short term purpose. The present research analyzes if there is any difference in the IS security compliance of temp employees to that of permanent employees within the organization.

This present study investigates the role of organizational commitment and perceived organizational support affects information systems policy compliance, as moderated by employment status.. The research questions that will be answered in this study are as follows:

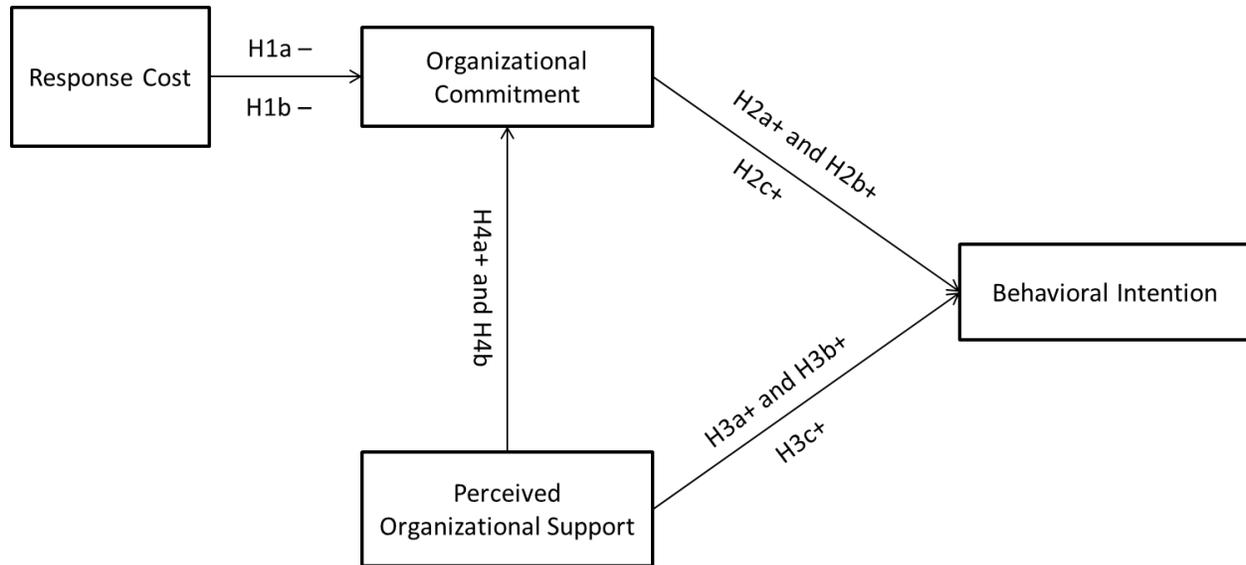
***RQ1:*** *How does the organizational commitment and perceived organizational support of temp employee differ from that of permanent employees?*

***RQ2:*** *How does the organizational commitment and perceived organizational support affect behavioral intention to comply with ISP?*

***RQ3:*** *How does the presence of perceived response cost affect the relationship between organizational commitment and behavioral intention?*

Figure 1 illustrates the conceptual model for the present study, which focuses on how status of employment (i.e. permanent employment vs. temporary employment) would affect perceived organizational support (POS) and organizational commitment (OC) of employees which in turn would impact behavioral intention of employees to comply with ISP. This paper also looks at the impact of perceived response cost on OC.

**Figure 1: Research Model**



### **Perceived Response Cost**

Perceived response costs are any costs (e.g., monetary, personal, time, effort) associated with taking the adaptive coping response (Floyd et al., 2000). Complying with the security policies requires time and effort that could have been used in other primary tasks of the employees and this is often perceived as perceived response cost that is a barrier to productivity (Siponen and Vance 2010; Warkentin et al. 2004). Similarly, end users and employees are more likely to perceive an IT threat as avoidable by taking a safeguarding measure when the costs associated with this measure decrease (Liang and Xue 2009). The perceived response cost of complying with security policies will negatively influence employees' attitude towards security policies (Herath and Rao 2009). Higher perceived response cost of security compliance would affect the relationship between organizational commitment and behavioral intention to comply with IS security. Accordingly,

***H1a:** The perceived response cost will negatively influence organizational commitment of permanent employees.*

***H1b:** The perceived response cost will negatively influence organizational commitment of temporary employees.*

## **Organizational Commitment**

Organizational commitment (OC) is a state of mind that compels employees to a positive behavior (Souris et al. 2004) that engages them to contribute to their firm's mission (Meyer et al. 2002). In the present study, OC is defined as stabilizing and obliging force that gives direction to behavior and binds a person (Meyer and Herscovitch 2001) to comply with ISP. OC predicts a range of security-related behaviors, as people in an organization may be less likely to enact counterproductive computer behaviors that put company systems at risk if their organizational commitment is high (Stanton et al. 2003). An employee's level of commitment towards an organization will determine their intentions to follow security policies (Herath and Rao 2009). Therefore, we suggest that

*H2a: The level of organizational commitment will positively affect the intentions to follow security policies in permanent employees.*

*H2b: The level of organizational commitment will positively affect the intentions to follow security policies in temporary employees.*

The form of employment generally reflects an important attitude of work situation and explains variance of organizational outcomes over and above organizational commitment (Felfe et al. 2008). Coyle-Shapiro and Kessler (2002) found that temporary and permanent workers in the same organization have variance in the level of their organizational commitment as the study found out that permanent workers are more committed to the organization than temporary workers. Permanent employees have higher investment in the organization and thus, have higher commitment (Sverke et al. 1999). There have also been studies which haven't found any differences in commitment between permanent and non-permanent employees (Guest and Clinton 2006). This research paper studies the effect of temporary status of employment and permanent status of employment into the relationship of organizational commitment with behavioral intention to comply security policies.

*H2c: The effect of organizational commitment on behavioral intention to comply with ISP will be stronger in permanent employees (than in temporarily employees).*

## **Perceived Organizational Support (POS)**

POS refers to the degree to which employees perceive their employer to be committed and concerned about their well-being and values their contributions to the organization (Eisenberger et al. 1986). POS strengthens the belief that the organization recognizes and rewards expected behavior, which in return encourages employees to be dedicated and loyal to the organization and its goal. (Rhoades and Eisenberger 2002). There have been numerous studies that have found a positive relationship between perceived organizational support and employees' willingness to fulfill conventional job responsibilities as stated in corporate rules (Settoon et al. 1996). In IS field, POS has been found to have a positive impact on security compliance intention of the employees (D'Arcy and Greene 2009). However, Greene and D'Arcy (2010) stated that their study didn't find a positive effect of perceived organizational support on IS security compliance intentions.

***H3a:** The level of perceived organizational support will positively affect the intentions to follow security policies in permanent employees.*

***H3b:** The level of perceived organizational support will positively affect the intentions to follow security policies in temporary employees.*

The development of POS in an employee occurs with the existence of promotional opportunities and job security (Allen, et al. 2000) in an organization. The contingent employees receive lower salary and lower benefits than the permanent employees. Thus, the contingent employees in an organization will report comparatively a lower POS than permanent employees (Coyle-Shapiro, et al. 2002a).

***H3c:** The effect of perceived organizational support on behavioral intention to comply with ISP will be stronger in permanent employees (than in temporarily employees).*

Organizational Support Theory states that the presence of POS among employees enhances their belief that better performance will be noticed and produces generalized obligation among employees to assist the organization in achieving its goals by raising an affective commitment towards the organization (Eisenberger et al. 1986; Rhoades & Eisenberger 2002; Settoon et al. 1996). However, it has been found that while POS influences organizational commitment, organizational commitment doesn't influence POS (Eisenberger and Armeli 2001). Based on the

previous studies, the current study looks into the effect of POS on OC and how it impacts behavioral intention to comply with ISP.

*H4a: Higher levels of perceived organizational support will lead to greater organizational commitment in permanent employees.*

*H4b: Higher levels of perceived organizational support will lead to greater organizational commitment in temporary employees.*

## **RESEARCH METHOD**

### **Instrumentation**

Validated scales used in prior research were adapted to measure the constructs of the study through a five-point Likert scale. Organizational Commitment (OC) scales were used from Allen and Meyer (1990) and Herath and Rao (2009). Allen and Meyer (1990) have used 8 item scales to measure Organizational Commitment while Herath and Rao (2009) have used 3 items scale. A 5 item scales have been developed by combining two items from Herath and Rao (2009) and three items from Allen and Meyer (1990). The Perceived Organizational Support (POS) was measured using the 8 item scale used by Rhoades and Eisenberger (2002) which were originally taken from 32 item scale developed from Eisenberger et al. (1986). Perceived response cost (RC) was adapted from three item scales used in Bulgurcu et al. (2010). Behavioral intention (BINT) to use the system was measured using a three-item scale adapted from Venkatesh et al. (1989) and extensively used in other research such as Johnston and Warkentin (2010). All constructs were measured with multiple items.

The four constructs OC, POS, RC and BINT that are used in this study were measured using sixteen different scenarios. Each construct has high and low orthogonal values embedded in the scenario for two job positions, permanent and temporary. The use of hypothetical scenarios to consider the measurement of IS policy compliance is widely in use in IS literature (Weber 1992; Moores and Chang, 2006; D'Arcy et al., 2009; Siponen & Vance, 2010). The scenario-based method of data collection is a common means of evaluating antisocial and unethical behavioral intention (Pogarsky, 2004) in a unthreatening way for sensitive issues (Nagin and Pogarsky, 2001). The realism of decision making situations increases through scenario-based method as it

can provide contextual detail by maintaining uniformity across respondents (Alexander and Becker, 1978). Also, scenario-based method have been shown to result in improved internal validity (Kerlinger, 1996).

The selection of the scenario and the development of the various scenario versions is conducted in a manner that would capture different aspects of the four constructs. Scenarios should be perceived by subjects as realistic and not too extreme. An expert panel review consisting of IS faculty and Ph.D. students was conducted twice to ensure scenario realism and clarity, with subsequent scenarios and instrument revisions implemented after each round of review. The scenarios were also pretested on a group of 15 students from an undergraduate class at a large Southern U.S. university. The feedback provided by the group showed a great amount of clarity of scenarios and instrument and showed that the scenarios were perceived to be realistic with no significant ambiguities. Minor changes were made in wordings as per the feedback from the pretest of the scenario and instrument to maximize content validity.

### **Sample and procedure**

To perform an empirical test of the relationship implied by the research model and the research hypothesis, this study used a field study using survey instrument for data collection. The data was gathered from 130 undergraduate students studying in a large Southern U.S. university. Out of these, 28 of data set were incomplete or unusable and were discarded. Several more participants completed the survey twice, while a few others completed it in insufficient time, so were discarded. Each participant assessed a total of four scenario versions which yielded a total of 408 responses for the study (at the vignette level). The demographic data set is presented in Table 1 below:

<b>Table 1: Respondent Demographic Characteristics</b>			
		<b>Participants (n =102)</b>	
<b>Gender</b>	Male	40	39%
	Female	62	61%
<b>Age</b>			0%
	18-21	74	73%
	22-25	25	25%
	26-30	3	3%
<b>Classification</b>			
	Freshman	52	51%
	Sophomore	30	29%
	Junior	15	15%
	Senior	5	5%

The participants in the study were provided with a survey website to complete the survey. Precautionary measures were taken to ensure the anonymity of the participants of the study. As undergraduate students who come from different backgrounds were considered for the survey, the data ensures robustness and generalizability of the results. Also, the use of different scenarios for each of the constructs increases the generalizability (Siponen and Vance, 2010).

The participants played the role of permanent employee and/or temporary employee depending on which scenario they received. The scenario which provided the role of a permanent employee had 8 types of scenarios while the scenario with the temporary employee had another 8 scenario versions, which yielded a total of 16 vignette versions. The scenarios were designed to capture all the aspects of the four construct (See Appendix C). Each participants of the survey were assigned four scenarios randomly (with each scenarios evenly presented to the respondents). The design of multiple scenarios per respondent was chosen because of the few number of survey items associated with each scenario (Jasso, 2006).

## DATA ANALYSIS

### **Instrument Validation**

To measure the instrument validation and test the structural model, the present study applied Partial Least Squares (PLS) through WarpPLS and SPSS. The data were divided into two set based on status of employment. One set of data represented the scenarios with permanent employment while the other set of data represented the scenarios with temporary employment. To assess the reflective constructs in the measurement model for both data sets, a test of individual item reliability, convergent validity, discriminant validity and construct reliability was performed.

The data (for both form of status of employment) were first analyzed to ensure individual item reliability to see if the items are free from random error and yields consistent results (Herath and Rao, 2009). The instrument used in this study included reflective scales only and the exploratory factor analysis was conducted on the reflective scales to view the items loadings, cross-loadings and AVEs. To assess the consistency across multiple items, a convergent validity test was performed. Convergent validity was confirmed by evaluating the higher loadings of the items among the hypothesized constructs than on other factors (Loch et al., 2003; Hearth and Rao, 2009). For both form of employment, all the measurement item loadings displayed convergent validity as they have item loadings greater than 0.70 on respective constructs (see Table 2a and 2b). Also, the values for AVEs for all constructs (as shown in Table 2a and 2b) were greater than the required minimum threshold of 0.5 which implies the convergent validity of the model (Gefen and Straub, 2005).

<b>Table 2a: Loadings, Cross-Loadings, and AVEs for Multi-Item Constructs (Permanent form of Employment)</b>					
	<b>BINT</b>	<b>OC</b>	<b>POS</b>	<b>RC</b>	<b>AVE</b>
BINT1	0.763	0.217	0.045	0.053	0.676
BINT2	0.894	0.202	0.033	-0.038	
BINT3	0.721	-0.108	0.011	0.056	
OC1	0.026	0.841	0.287	0.39	0.621
OC2	0.31	0.719	0.291	0.21	
OC3	0.03	0.867	-0.194	0.068	
OC4	0.43	0.75	-0.086	0.085	
OC5	0.245	0.709	0.391	0.174	
POS1	0.46	0.48	0.808	-0.208	0.530
POS2	-0.003	0.147	0.614	-0.117	
POS3	0.111	0.511	0.78	0.42	
POS4	0.085	0.47	0.697	0.515	
POS5	-0.039	0.204	0.774	-0.209	
POS6	0.126	0.409	0.695	0.16	
POS7	0.42	0.31	0.702	0.245	
POS8	0.04	0.134	0.717	0.081	
RC1	-0.16	-0.201	-0.011	0.788	0.601
RC2	0.04	-0.265	0.115	0.671	
RC3	0.602	0.214	-0.051	0.708	

<b>Table 2b: Loadings, Cross-Loadings, and AVEs for Multi-Item Constructs (Temporary form of Employment)</b>					
	<b>BINT</b>	<b>OC</b>	<b>POS</b>	<b>RC</b>	<b>AVE</b>
BINT1	0.747	0.41	0.106	0.201	0.544
BINT2	0.761	0.31	0.11	-0.106	
BINT3	0.790	-0.08	0.09	0.170	
OC1	0.70	0.852	0.45	0.230	0.612
OC2	0.005	0.781	0.19	0.030	
OC3	0.146	0.768	0.241	0.168	
OC4	0.412	0.591	0.54	0.04	
OC5	0.201	0.748	0.262	0.244	
POS1	0.08	-0.021	0.798	-0.154	0.718
POS2	0.12	0.211	0.704	-0.201	
POS3	0.313	0.54	0.81	0.04	
POS4	0.223	0.421	0.67	0.12	
POS5	0.115	0.45	0.715	-0.209	
POS6	0.501	0.505	0.661	0.006	
POS7	0.240	0.201	0.801	0.245	
POS8	-0.10	0.310	0.797	0.081	
RC1	-0.36	-0.201	-0.011	0.731	0.571
RC2	0.08	0.310	0.115	0.785	
RC3	-0.04	0.015	-0.051	0.819	

The square root of the average variance extracted (AVE) for each construct as shown in the diagonal of the correlation construct matrix in Table 3a and 3b were greater than the inter-construct correlation corresponding off-diagonal correlations of the constructs to their latent variables. The existence of discriminant validity shows that scores on a test of a concept do not highly correlate with scores from other tests designed to measure theoretically different concepts (Campbell and Fiske 1959). Both the tables show that the square root of AVE of the multi-item reflective constructs is greater than the correlations between each construct. This shows the presence of discriminant validity for the research model for both form of status of employment.

	BINT	OC	POS	RC
PEOU	0.822			
OC	0.677	0.788		
POS	0.549	0.616	0.728	
RC	0.427	0.532	0.612	0.775

	BINT	OC	POS	RC
BINT	0.737			
OC	0.504	0.782		
POS	0.581	0.691	0.847	
RC	0.421	0.496	0.684	0.755

A composite reliability and Cronbach's alpha which measure the internal consistency of the scales are analyzed for both form of status of employment. While Cronbach's alpha provides a lower bound estimate of the internal consistency, the composite reliability is a more demanding estimate for the reliability (Chin and Gopal 1995). The recommended values for Cronbach's alpha and Composite reliability are both 0.70 and above (George and Mallery 2003; Gefen et al. 2000). The Cronbach alpha coefficient and Composite reliability coefficient for both form of status of employment are presented in Table 4. For both the Cronbach alpha and Composite reliability, each of the data in this model has scored greater than 0.7.

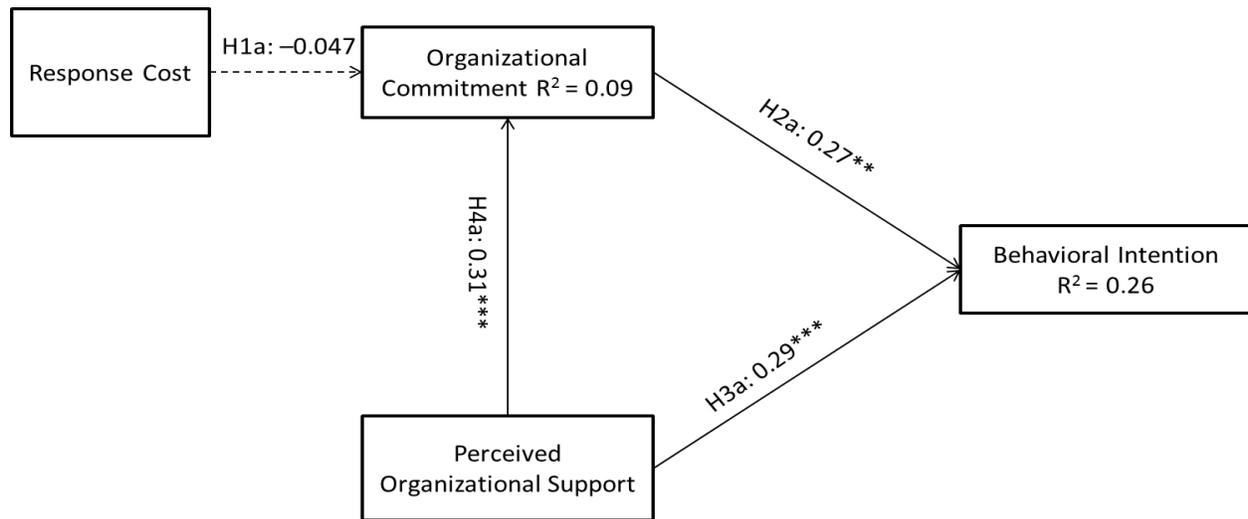
<b>Table 4: Reliability Statistics</b>				
	<b>Permanent form of Employment</b>		<b>Temporary form of Employment</b>	
<b>Construct</b>	<b>Cronbach's Alpha</b>	<b>Composite Reliability</b>	<b>Cronbach's Alpha</b>	<b>Composite Reliability</b>
BINT	0.710	0.815	0.798	0.867
OC	0.721	0.841	0.741	0.812
POS	0.781	0.890	0.769	0.832
RC	0.814	0.801	0.849	0.854
BINT	0.748	0.754	0.778	0.821

### **Testing of Structural Model**

The hypotheses for the research model for the different status of employment were tested by examining the structural model and the standardized PLS path coefficients for the model is shown in Table 5 below. The path coefficient presented in the structural model represents the strength of the relationship between the independent variables and the dependent variables of the research model while the R-square value (Chin 1998). All the constructs have R-square greater than 0.10 except Perceived response cost (for both form of status of employment) which means the research model is satisfactory and substantive (Falk and Miller 1992).

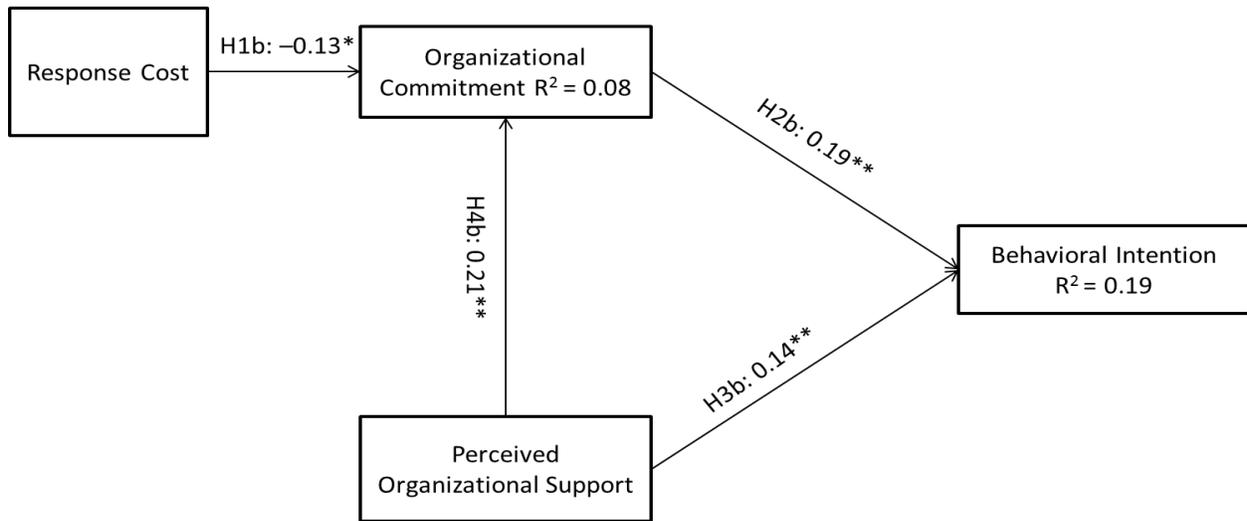
Table 5: Summary of Findings					
	Dependent Variable	Independent Variable	Path Coefficient ( $\beta$ )	p-value	R-square
Permanent Employee	OC	RC	-0.047	Not significant	.09
		POS	0.31	$p < 0.001$	
	BINT	OC	0.27	$p < 0.01$	.26
		POS	0.29	$p < 0.001$	
Temporary Employee	OC	RC	-0.13	$p < 0.05$	.08
		POS	0.21	$p < 0.01$	
	BINT	OC	0.19	$p < 0.05$	.19
		POS	0.14	$p < 0.05$	

**Figure 2: Supported Hypotheses (for Permanent form of Employment)**



Note: significant at \* $p < 0.05$ , significant at \*\* $p < 0.01$ , significant at \*\*\* $p < 0.001$   
 ----> Not supported

**Figure 3: Supported Hypotheses (for Temporary form of Employment)**



Note: significant at \* $p < 0.05$ , significant at \*\* $p < 0.01$ , significant at \*\*\* $p < 0.001$

Perceived response cost was found not to have a significant impact on Organizational Commitment for Permanent employee while for temporary employee, Perceived response cost was found to have significant impact on Organizational Commitment; therefore H1a is not supported while H1b is supported. The perceived organizational support was found to have significant effect on Organizational Commitment on both permanent ( $\beta = 0.31$ ,  $p < 0.001$ ) and temporary ( $\beta = 0.21$ ,  $p < 0.01$ ) form of employment status, which support H4a and H4b. Also, the perceived organizational support was found significant effect on Behavioral Intention on both permanent ( $\beta = 0.29$ ,  $p < 0.001$ ) and temporary ( $\beta = 0.14$ ,  $p < 0.05$ ) form of employment status, which support H3a and H3b. The beta of the path from perceived organizational support to behavioral intention for permanent form of employment, representing H3a, is significantly bigger than the path in temporary form of employment status, supporting H3b. This supports our hypothesis H3c which implies that the effect of POS on behavioral intention to follow ISP is stronger in permanent employees than in temporary employees. Supporting H2a and H2b, the organizational commitment was found significant effect on Behavioral intention on both permanent ( $\beta = 0.27$ ,  $p < 0.01$ ) and temporary ( $\beta = 0.19$ ,  $p < 0.01$ ) form of employment status. The beta of the path from organizational commitment to behavioral intention for permanent form of employment, representing H2a, is significantly larger than the path in temporary form of employment status, supporting H2b. This supports our hypothesis of H2c which implies that the

effect of OC on behavioral intention to follow ISP is stronger in permanent employees than in temporary employees.

## **DISCUSSION AND CONCLUSION**

### **Key Findings**

Comparing different forms of status of employment such as permanent with temporary provides researchers with the opportunity to understand the difference in level of organizational commitment and perceived organizational support and their effect on behavioral intention to comply with information security policies. The present study found out that in both permanent form of status and temporary form of employment status, there is a positive impact of organizational commitment perceived organizational support on behavioral intention. In the field of Organizational Behavior, POS and organizational commitment have been found to be the major factors that encourage employees to fulfill conventional job responsibilities such as following organizational rules and guidelines. Based on our study, POS and OC seem to be important factors in determining behavioral intention to comply with ISP.

Our result indicates that the effect of organizational commitment on behavioral intention would be stronger in permanent employees than in temporary employees. Also, the perceived organizational commitment on behavioral intention would be stronger in permanent employees than in temporary employees. This implies that the permanent employees are highly willing to comply with ISP than the temporary employees for varying reasons. The organizational behavior literature provides empirical support of both the hypothesis discussed.

Our findings suggest that perceived organizational support will positively affect organizational commitment of both permanent and temporary employees. POS increases the obligation in employees to reciprocate a better commitment towards the organization they are working for. Employees who believe they are receiving support from their organization are motivated to remain committed to it. Interestingly, the perceived response cost has no significant impact on Organizational commitment for permanent employees. This research shows that the perceived response cost and organizational commitment for temporary employees has a significant relationship while the perceived response cost and organizational commitment for permanent employees doesn't have a significant relationship. One reason that could be thought is the

willingness of permanent employees to go beyond the regular cost such as time and complexity to perform a task and get it done. The permanent employees show higher organizational citizenship behaviors than the contingent workers as the later receive fewer tangible and intangible benefits from their employers (Van Dyne and Ang 1998).

### **Limitations and Future Research**

One limitation of this study is the use of students as the participants of this survey and the use of scenario based method for this. A scenario based method is an unthreatening way for data collection of sensitive issues (Nagin and Pogarsky 2001) and improves internal validity (Kerlinger 1996). However, collection of data from individuals who have some form of employment could have given a realistic picture about their organizational commitment and perceived organizational support. Future research could incorporate data collection from temporary employees hired through temporary work agencies. This could provide more generalized findings for broader demographic characteristics.

The study is limited to only permanent and temporary form of employment. There could be many different forms of employment which might affect organizational commitment and perceived organizational support in different ways. A detail research on different other forms of employment is required to understand such effects.

This study focuses on behavioral intention rather than the actual behaviors. Although it has been a common trend in IS research field to measure behavioral intention rather than the actual behavior, many factors such as habits, time and other factors might need to be considered. The inclusion of any other facilitating conditions such as managerial or technical support to enhance security culture of the organization as construct or mediator may provide a comprehensive research model. Furthermore, the data sample of this study is limited and a larger sample representing various sectors might increase the validity of the research.

### **Conclusion**

IT security research has focused on strategies that could understand and enhance IS compliance. While a lot of attention has been given to employees, we still do not fully understand why an individual employee does or does not comply with security policies. This paper studies the IS compliance from the aspect of status of employment. This paper presents how the organizational

commitment and perceived organizational support differs among temporary employees and permanent employees and how this will impact the behavioral intention of employees to comply with ISP. The results of the study shows that permanent employees have a stronger impact of organizational commitment and perceived organizational support on the behavioral intention to comply with ISPas compared to temporary employees. From a research perspective, this study provides something new to look at as the form of employment is often ignored when studying the IS policies and security.

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## Appendix A: Instrument

Consider yourself to be in the scenario provided to you. After reading the scenario, please answer each of the following questions honestly. Your responses are anonymous.

### Section 1: Behavioral Intention (Venkatesh et al. 2003; Johnston & Warkentin, 2010)

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
1. I see myself taking the unencrypted data with me for this business trip (BINT1).					
2. For this business trip, I would take the unencrypted data with me (BINT2).					
3. I plan to take the unencrypted data for this business trip (BINT3).					

### Section 2: Organizational Commitment (Allen and Meyer, 1990 and Herath and Rao, 2009)

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
1. I am willing to put in a great deal of effort beyond that normally expected in order to help this company be successful (OCM1).					
2. I really care about the fate of this company (OCM2).					
3. I really feel as if this company's problems are my own (OCM3).					
4. I could see myself 'emotionally attached' to this company (OCM4).					
5. I would feel a strong sense of belonging to this company (OCM5).					

**Section3: Perceived Organizational Support (Eisenberger et al., 1986, Rhoades and Eisenberger, 2002)**

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
1. I believe that this company values my contribution to its well-being (POS1).					
2. This company would appreciate any extra effort from me (POS2).					
3. I believe that this company would acknowledge any complaint from me (POS3).					
4. I believe that this company really cares about my well-being (POS4).					
5. I believe that if I do the best job possible, this company would notice it (POS5).					
6. I believe that this company cares about my general satisfaction at work (POS6).					
7. I believe that this company would show concern for me (POS7).					
8. I believe that this company takes pride in my accomplishments at work (POS8).					

**Section 4: Perceived response cost (Bulgurcu et al. 2010)**

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
1. Complying with the requirements of the data encryption policy would not be easy for me in this scenario (COST1).					
2. In this scenario, I would find it burdensome to encrypt the data to comply with the requirements of the data protection policy (COST2).					
3. In this scenario, it would be difficult to comply with the data encryption policy (COST3).					

### Section 5: Demographic Information

The demographic information provided for this study will not be used to identify individual respondents. Please be assured that your demographic information will be anonymous.

<b>Gender</b>	<b>Age</b>	<b>College Year</b>
<input type="checkbox"/> male	<input type="checkbox"/> 18 to 21	<input type="checkbox"/> Freshman
<input type="checkbox"/> female	<input type="checkbox"/> 22 to 25	<input type="checkbox"/> Sophomore
	<input type="checkbox"/> 26 to 30	<input type="checkbox"/> Junior
	<input type="checkbox"/> 31 and over	<input type="checkbox"/> Senior

Thank you for participating in this study.

## Appendix B: Source of Scale Items for Research Constructs

Construct	Adapted Scale Items	Original Scale Items	Source
Behavioral Intention (BINT)	<p>1.I see myself taking the unencrypted data with me for this business trip.</p> <p>2.For this business trip, I would take the unencrypted data with me</p> <p>3.I plan to take the unencrypted data for this business trip .</p>	<p>1.I intend to use the system in the next &lt;n&gt; months.</p> <p>2.I predict I would use the system in the net &lt;n&gt; months.</p> <p>3.I plan to use the system in the next &lt;n&gt; months.</p>	Venkatesh et al. (2003)
Organizational commitment (OCM)	<p>1.I am willing to put in a great deal of effort beyond that normally expected in order to help this company be successful.</p> <p>2.I really care about the fate of this company.</p> <p>3.I really feel as if this company's problems are my own.</p> <p>4.I could see myself 'emotionally attached' to this company.</p> <p>5.I would feel a strong sense of belonging to this company.</p>	<p>1.I am willing to put in a great deal of effort beyond that normally expected in order to help this company be successful.</p> <p>2.I really care about the fate of this company.</p> <p>3.I really feel as if this company's problems are my own</p> <p>4.I do not feel 'emotionally attached' to this company (R)</p> <p>5.I do not feel a strong sense of belonging to my company (R)</p>	Herath and Rao, (2009) for 1 & 2, and Allen and Meyer, (1990) for 3, 4 & 5.

<p>Perceived Organizational Support (POS)</p>	<p>1.I believe that this company values my contribution to its well-being.  2.This company would appreciate any extra effort from me.  3.I believe that this company would acknowledge any complaint from me .  4.I believe that that this company really cares about my well-being.  5.I believe that if I do the best job possible, this company would notice it.  6.I believe that this company cares about my general satisfaction at work.  7.I believe that this company would show concern for me.  8.I believe that this company takes pride in my accomplishments at work.</p>	<p>1.The company values my contribution to its well-being.  2.The company fails to appreciate any extra effort from me. (R)  3.The company would ignore any complaint from me. (R)  4.The company really cares about my well-being.  5.Even if I did the best job possible, the company would fail to notice. (R)  6.The company cares about general satisfaction at work.  7.The company shows very little concern for me. (R)  8.The company takes pride in my accomplishments at work.</p>	<p>Eisenberger et al. (1986), Rhoades and Eisenberger (2002)</p>
<p>Perceived response cost (COST)</p>	<p>1.Complying with the requirements of the data encryption policy would not be easy in this scenario.  2.In this scenario, I would find it burdensome to encrypt the data to comply with the requirements of the data protection policy.  3.In this scenario, it would be difficult to comply with the data encryption policy.</p>	<p>1.Complying with the requirements of the ISP is time consuming for me.  2.Complying with the requirements of the ISP is burdensome for me.  3.Complying with the requirements of the ISP is costly for me.</p>	<p>Bulgurcu et al. (2010)</p>

## Appendix C: Scenarios (Examples of 4 Scenarios out of 16)

Please read the following scenario carefully. After you complete reading the scenario, please answer the questions that follow the scenario. Please remember that each scenario may look similar but are different in nature and implication. After you read all the scenarios assigned to you and complete all the related questions, you will be asked to complete your demographic information at the end. It should not take more than 20 minutes to complete the entire survey.

### Version 1: Organizational Commitment, POS, Response Cost (H-H-H)

Assume that you are a recent graduate and you have been hired for a temporary position in a mid-sized company (through a temporary work agency). The company **has a positive** history of job satisfaction, job security, pay raise, respect for employees' value and work environment. Also, management seems *concerned about* your career and *appreciates* your contribution. The company has a strong policy that the corporate data has to be strictly protected and prohibits it from being copied to any unencrypted portable media. You learned that the company often provides a very short notice for a business trip to meet and attract new clients and this gives you no time to evaluate the data to prepare for this kind of business trip. You are planning to store the corporate data on a flash drive, but it is **extremely difficult and time consuming to encrypt and decrypt** the data. You are aware that you may risk losing the client unless you keep a copy of corporate data with you on your portable media while travelling. You are considering taking the unencrypted data with you.

### Version 2: Organizational Commitment, POS, Response Cost (L-L-L)

Assume that you are a recent graduate and you have been hired for a temporary position in a mid-sized company (through a temporary work agency). The company **does not have a positive** history of job satisfaction, job security, pay raise, respect for employees' value and work environment. Also, management *doesn't seem concerned* about your career and *doesn't seem to appreciate* your contribution. The company has a strong policy that the corporate data has to be strictly protected and prohibits it from being copied to any unencrypted portable media. You learned that the company often provides a very short notice for a business trip to meet and attract new clients and this gives you no time to evaluate the data to prepare for this kind of business trip. You are planning to store the corporate data on a flash drive, but it is **somewhat difficult**

**and time consuming to encrypt and decrypt** the data. You are aware that you may risk losing the client unless you keep a copy of corporate data with you on your portable media while travelling. You are considering taking the unencrypted data with you.

**Version 9: Organizational Commitment, POS, Response Cost (H-H-H)**

Assume that you are a recent graduate and you have been hired for a permanent position in a mid-sized company. The company **has a positive** history of job satisfaction, job security, pay raise, respect for employees' value and work environment. Also, management *seems concerned* about your career and *appreciates* your contribution. The company has a strong policy that the corporate data has to be strictly protected and prohibits it from being copied to any unencrypted portable media. You learned that the company often provides a very short notice for a business trip to meet and attract new clients and this gives you no time to evaluate the data to prepare for this kind of business trip. You are planning to store the corporate data on a flash drive, but it is **extremely difficult and time consuming to encrypt and decrypt** the data. You are aware that you may risk losing the client unless you keep a copy of corporate data with you on your portable media while travelling. You are considering taking the unencrypted data with you.

**Version 10: Organizational Commitment, POS, Response Cost (L-L-L)**

Assume that you are a recent graduate and you have been hired for a permanent position in a mid-sized company. The company **does not have a positive** history of job satisfaction, job security, pay raise, respect for employees' value and work environment. Also, management *doesn't seem concerned* about your career and *doesn't seem to appreciate* your contribution. The company has a strong policy that the corporate data has to be strictly protected and prohibits it from being copied to any unencrypted portable media. You learned that the company often provides a very short notice for a business trip to meet and attract new clients and this gives you no time to evaluate the data to prepare for this kind of business trip. You are planning to store the corporate data on a flash drive, but it is **somewhat difficult and time consuming to encrypt and decrypt** the data. You are aware that you may risk losing the client unless you keep a copy of corporate data with you on your portable media while travelling. You are considering taking the unencrypted data with you.