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RESEARCH PAPER

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User Resistance to the Implementation of Information Systems: A Psychological Contract Breach Perspective

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Abstract

The current study proposes an exploratory model to examine the antecedents of user resistance in information system (IS) implementations from the perspective of a psychological contract breach (PCB). The purpose of this study is to investigate PCBs between users and IS providers (ISPs), which extends IS theory in two ways: by elaborating on why some users psychologically resist the IS, and by more deeply exploring the social-psychological determinants of user resistance. Our results show that user-perceived PCBs can lead to user resistance and feelings of violation via reneging, high user vigilance, and incongruence between the users' and the ISP's understandings of the obligations. Our results also show that users' interpretations—i.e., causal attribution of the breach and perceived fairness after the breach—moderate the relationship between user-perceived PCBs and feelings of violation. We discuss our findings and their academic and practical implications, and suggest directions for future research.

Keywords: IS Implementation, Psychological Contract Breach, Feelings of Violation, User Resistance

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1 Introduction

Information systems (IS) have become an important competitive element in many industries. However, IS implementations remain challenging, costly, and time-intensive (Davies, 2009; Bernroider, Pilkington, & Cordoba, 2013). User resistance has been acknowledged as an important reason for IS implementation failures (Jiang, Muhanna, & Klein, 2000; Barker & Frolick, 2003; Kim & Kankanhalli, 2009). The 2014 ERP Report released by Panorama Consulting Solutions further indicated that user resistance is the most overwhelming reason for IS implementation failure (Kimberling, 2014).

Researchers have recognized the importance of activators in driving user resistance to an IS implementation (Joshi, 1991; Lapointe & Rivard, 2005; Kim & Kankanhalli, 2009). Studies investigating the determinants of user resistance have attempted to resolve user problems from various viewpoints (Joseph, 2010). Although previous studies have investigated many inherent characteristics of IS implementations, the problem of user resistance to change remains (Besson & Rowe, 2001, 2012). While there is a large body of literature on user resistance, little of it has addressed user resistance from the perspectives of the relationship between users and IS providers (ISPs), or users' perceptions of past promises and their feelings of violation (Koh & Straub, 2004; Klaus & Blanton, 2010).

Many organizational behavior researchers have used the concept of the psychological contract breach (PCB) to understand employees' attitudes and behaviors. Robinson and Morrison (2000) proposed a notable model of PCB based on longitudinal research. They proposed that three dimensions drive individuals' perceptions of such a breach: reneging,

incongruence and vigilance. The perception of a PCB has been found to reduce employees' trust, job satisfaction, intentions to remain with the organization, sense of obligation, and in-role and extra-role performance. Because of the potential for these negative effects, it is vital to understand the effect of PCBs on user resistance and the conditions under which perceptions of PCBs arise in the context of IS implementations. Authors of IS studies have begun to recognize how PCBs impact such things as trust in virtual teams (Piccoli & Ives, 2003), IT outsourcing success (Koh & Straub, 2004), and transaction intentions in online marketplaces (Pavlou & Gefen, 2005). A case study by Klaus and Blanton (2010) used the PCB concept to explain user resistance to enterprise systems. The PCB is premised on the notion that the relationship between users and ISPs involved in IS implementations may be a type of reciprocal relationship in which each group promises to do something for the other(s) for the sake of future benefits. Klaus and Blanton's (2010) qualitative study constitutes the initial step toward bringing psychological contract theory into the understanding of user resistance. Our study develops a quantitative model based on Robinson and Morrison's (2000) PCB model to explain the relationships between reneging, incongruence, vigilance factors and user-perceived PCBs, as well as the relationships between PCBs, feelings of violation, and user resistance. Thus, we can systematically and statistically examine the effect of PCBs on user resistance and provide more objective findings. PCB's origins in organizational behavior research suggest that a PCB-focused exploratory model of user resistance to IS implementations in organizations is worthy of further development.

This study focuses on users who participate in an IS implementation. During an IS implementation, the ISP promises future rewards, such as recognition, influence, better system fit, favorable conflict resolution, and increased effectiveness without explicit agreements (Gefen & Keil, 1998; Gefen & Ridings, 2002). Thus, a psychological contract is created when the ISP promises to do something for the users for the sake of future benefits. The purposes of this study are: (1) to understand the importance of user-ISP psychological contracts and user-perceived PCBs in IS project implementations by examining their impact on user resistance, (2) to explore the critical role of characteristics inherent in IS implementation that affect users' perceptions of a PCB, and (3) to examine the mechanism of cognition-affect transfer from users' perceptions of a PCB to feelings of violation, through the lens of the moderating roles of causal attribution and perceived fairness. By studying user-perceived PCBs as experienced during an IS project implementation, we can learn more about the antecedents of user resistance, and can better understand its mechanism as it proceeds from cognition, via affect, to behavioral intention.

2 Literature Review

2.1 User Resistance Research

User resistance was first recognized in the late 1950s in the field of human behavior, and researchers in management adopted the concept in the 1970s to study the reasons for and consequences of resistance. It remains a central topic in the IS implementation literature (Joshi, 1991; Kim & Kankanhalli, 2009). *User resistance* has been conceptualized as the opposition to perceived change related to a new IS implementation by the users who are expected to operate it (Lapointe & Rivard, 2005). Other authors have defined user resistance as behavioral reactions that express reservations in the face of pressure exerted by change supporters seeking to alter the status quo (Waddell & Sohal, 1998; Kim & Kankanhalli, 2009; Meissonier & Houzé, 2010). User resistance becomes particularly significant in IS implementations because of the multifarious social and technical changes involved. Research on this topic has used a variety of perspectives to gain a better understanding of the antecedents of user resistance (see Table 1).

Table 1. User Resistance Research

Perspective	Factor	References
Technical factors: Inherent in the system design	The lack of realization of requirements, low system reliability, and low quality of information	Lucas (1978); Bailey, & Pearson (1983)
	Incompatibility	Lapointe & Rivard (2005); Bhattacherjee & Hikmet (2007)
Personal factors: Internal to end users	Individual characteristics, and self-efficacy	Martinko, Zmud, & Henry (1996); Venkatesh, Morris, Davis, & Davis (2003)
Political factors	Job insecurity	DeSanctis & Courtney (1983); Smith & McKeen (1992); Lin (1994)

Table 1. User Resistance Research

	Loss of power/status	Keen (1981); Jiang et al. (2000); Lapointe & Rivard (2005); Selander & Henfridsson (2012)
	Uncertainty	Hirschheim & Newman (1988); Smith & McKeen (1992); Jiang et al. (2000)
	Perceived inequity	Joshi (1991)
Loss aversion	Inertia	Markus (1983); Hirschheim & Newman (1988)
	Status quo bias	Kim & Kankanhalli (2009); Kim (2011)
Social factors	Social influence	Martinko et al. (1996); Venkatesh et al. (2003)
Implementers' response	Implementers' inaction, acknowledgment, and noncongruent rectification	Rivard & Lapointe (2012)
User adaptation	The expected consequences of an IT event are appraised as an threat, users feel that they have limited control over the situation, and the circumstances are perceived as too demanding and overwhelming	Beaudry & Pinsonneault (2005)

Since user resistance is intuitively undesirable, many researchers have adapted theories or models from other fields to help understand it. The most cited user resistance models are interaction theory (Markus, 1983), equity theory (Joshi, 1991), and the more recent multilevel theory of resistance to IT (Lapointe & Rivard, 2005). The authors of these models have identified a number of reasons for user resistance, including job insecurity, loss of power, and uncertainty. Markus (1983) explained user resistance in terms of the interaction between system characteristics and the social context of the system's use. More recently, Lapointe & Rivard (2005) proposed a five-dimension process model of resistance to IS implementation based on user initial conditions, interaction, threats, and behavior.

Recent literature on user resistance explores the relationship between resistance and psychological contracts among groups, a concept introduced from the field of organizational behavior. For example, Klaus and Blanton (2010) interpreted resistance as resulting from the violation of the psychological contract between employees and their employer. Such a violation occurs when employees do not perceive their employer as meeting its obligations, regardless of whether or not the employer knowingly failed to fulfill the perceived promises. The authors used a focus-group approach and semistructured interviews of employees to categorize types of user resistance related to the violation of psychological contracts in enterprise-wide system implementations. With its emphasis on the relational nature of resistance, the qualitative research above provides insight into user resistance in general, connecting to and building on social-psychological and sociological work (Van Offenbeek, Boonstra, & Seo, 2013).

2.2 Psychological Contract

The concepts of the psychological contract and the PCB emerged in the psychology literature in the 1990s in the fields of organizational behavior and management (Lucero & Allen, 1994; Parks and Schmedemann, 1994; Robinson, Kraatz, & Rousseau, 1994; Robinson & Morrison, 1995; Coyle-Shapiro, 2002). Distinct from a formal contract, a *psychological contract* is not an agreement with specific terms or a legal object, but a compound of reciprocal obligations into which individuals enter voluntarily. As defined by organizational behavior research, a psychological contract is a set of beliefs about the reciprocal obligations between an employee and his or her employer (Morrison & Robinson, 1997). A *psychological contract breach* is defined as an individual's perception of the extent to which the top manager has failed to fulfill one or more of these obligations (Robinson & Morrison, 1995; Robinson & Morrison, 2000; Conway & Briner, 2002). Prior studies have explored both the processes that influence individuals' reactions to PCBs, and the negative consequences of PCBs (Epitropaki, 2013). The literature has also established a strong, empirically validated correlation between perceived PCBs and the work-related attitudes of employees (Coyle-Shapiro & Parzefall, 2008; Restubog, Zagenczyk, Bordia, Bordia, & Chapman, 2012). Restubog et al. (2012) suggested that a perceived PCB can damage an individual's attitude and

behavior. Accordingly, organizations attempting IS implementations—which by their nature can arouse user-perceived PCBs through the organization failing to achieve its reciprocal obligations—will benefit from a better understanding of how a PCB can lead to user resistance.

Most researchers have cited Robinson and Morrison's (2000) PCB model, which noted the consequences of PCBs and defined three drivers of perceived PCBs: reneging, incongruence, and vigilance. *Reneging* refers to situations in which the employee considers the employer as unable or unwilling to fulfill the psychological contract. *Incongruence* refers to situations where the employee and employer have divergent schemata. *Vigilance* is identified as a state of alert that increases individuals' desire and ability to monitor the fulfillment of their psychological contracts.

Several IS studies have focused on PCBs in e-commerce, ERP, and IT outsourcing. Pavlou and Gefen (2005) suggested PCB as an antecedent of buyer-seller relationship breakdown in the online marketplace. Their results supported the notion that a PCB with a seller reduces buyers' transaction intentions. Klaus and Blanton (2010) reported that promises that are perceived as unmet may lead to a perceived PCB in ERP implementations. Users' perceptions and interpretations of PCBs have an interaction effect on resistance behavior. Koh and Straub (2004) demonstrated the existence of a psychological contract between outsourcing customers and suppliers, and showed that fulfilling the obligations of that contract accounted for a significant amount of the variance in outsourcing success.

IS implementations are complex processes involving a combination of technological, social, and organizational interactions. In practice, large numbers of IS users rely on such systems in order to complete their tasks and to work efficiently. ISPs, on the other hand, need user participation and cooperation in order to achieve the goals and objectives of their IS implementations. We proceed from the assumption that the user-ISP relationship implies a set of reciprocal obligations constituting a psychological contract related to the project activities required of both sides. Further, we propose that once this psychological contract has been breached, users will perceive PCBs on a cognitive level, which could result in a feeling of violation as an affective response, which, in turn, results in user resistance to the IS.

Social exchange theory (Blau, 1964) is arguably one of the most influential frameworks for understanding human and organizational behavior. *Social exchange* has been defined as cooperation between two or more individuals or groups for their mutual benefit, and it depends on the *norm of reciprocity* (Cropanzano & Mitchell, 2005). The major difference between a social and an economic exchange is that a social exchange offers no guarantee that there will be a reciprocal reward in return for the costs invested, because there are no rules or agreements that govern the interaction (Gefen & Ridings, 2002). User-ISP interaction during an IS implementation can be viewed as a social exchange. This is because the nature of the interaction between users and the ISP often does not involve any explicit rules of conduct guaranteeing that the users will receive the expected reward in return for their invested costs (Gefen & Keil, 1998; Gefen & Ridings, 2002). In the context of IS implementations, users and ISPs can be considered to be two distinct working groups; therefore, obligations embedded in this two-group social exchange constitute the psychological contract (Rousseau, 1989). Since obligations include *promises* and *norms* for either or both sides (Rousseau, 1989; Robinson et al., 1994; Robinson & Morrison, 1995; van der Smissen, Schalk, & Freese, 2013), we suggest that the user-ISP psychological contract is a set of beliefs about these parties' reciprocal obligations. Also, the relationship between users and ISPs is a type of social exchange governed by a type of psychological contract under which the two parties exchange their obligations and duties.

3 Research Model and Hypothesis Development

Our study's proposed model, shown in Figure 1, is based on Robinson and Morrison's (2000) framework. The model comprises the characteristics of IS project implementation that could cause an individual user to perceive a breach of the psychological contract (i.e., user-perceived PCB). These characteristics are categorized into the factors of reneging and incongruence. User vigilance represents the alert system through which the user monitors the ISP's fulfillment of the psychological contract. Once the IS provider fails to meet the contract, the user will perceive a breach, and that perception will cause a feeling of violation that will increase the user's resistance. The moderating role of the user's interpretation is also examined in this model.

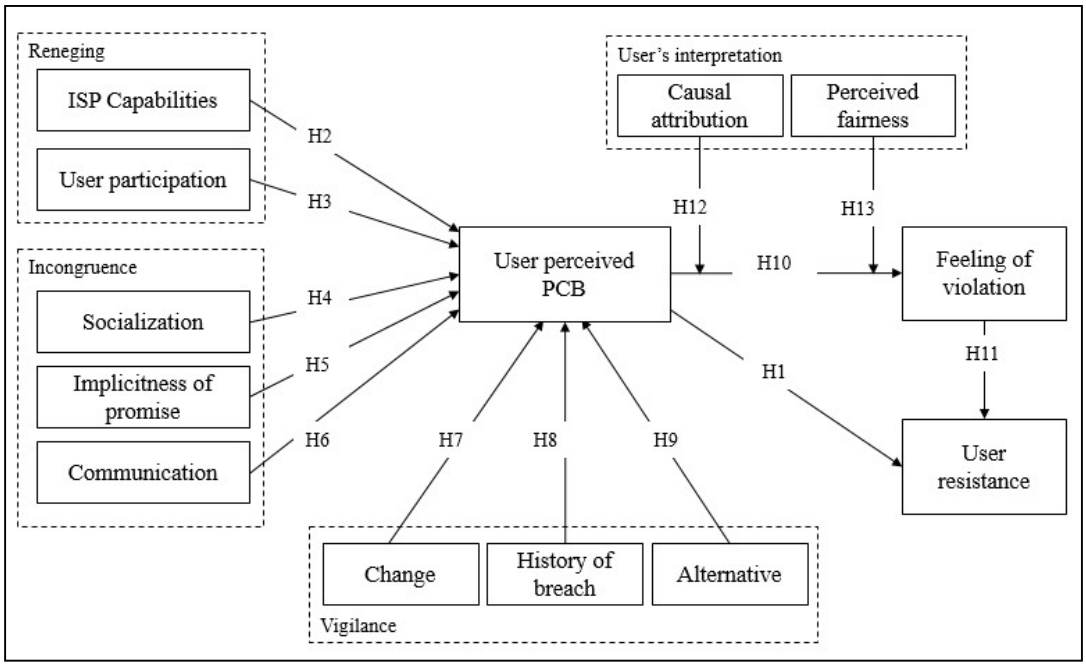


Figure 1. Research Model

3.1 User Resistance as a Type of Deviant Behavior in the Workplace

We define a *user-perceived* PCB in the IS-implementation context as a user's perception of the extent to which the ISP has failed to fulfill one or more obligations under the user-ISP psychological contract. A PCB is likely to make employees question their organizations' abilities or motives, and, therefore, some severely deviant employee behaviors might occur after the breach (Selander & Henfridsson, 2012). Deviant behavior in the workplace is voluntary behavior that infringes on significant organizational norms and threatens the well-being of the organization or its members (Coyle-Shapiro & Parzefall, 2008). Agboola & Salawu (2011) found that resistance may be expressed through deviant behaviors in order to truncate the process of implementation or even prevent it entirely.

User-perceived PCBs can evoke negative behavioral responses (Morrison & Robinson, 1997). We conceive of user resistance to an IS implementation as a form of negative reciprocation of deviant behavior. In addition, prior studies have reported that PCBs have a negative impact on the kinds of employee behaviors that promote organizational effectiveness (Robinson & Morrison, 1995; Coyle-Shapiro & Kessler, 2000; Turnley, Bolino, Lester, & Bloodgood, 2003). Robinson and Morrison (1995) offer two potential explanations. The first explanation is violation—the violation of a promise generates a sense of betrayal or unfair treatment that leads to the erosion of trust, and hence, to negative behavioral responses. The second explanation is equity—employees strive to maintain an equitable balance between what they contribute to the organization and what they receive in return. If an organization does not fulfil its obligations, thereby creating an inequity, employees may withhold their discretionary inputs. Joshi (1991) argued that a user is likely to compare changes in his or her relative outcomes with those of the employer when new technologies or systems are introduced. If the user feels that the employer's gains are relatively greater than his or her own, the user is likely to resist the change. From the perspective of equity, user-perceived PCBs could have a direct effect on user resistance. Raja, Johns, & Ntalianis (2004) also found that PCBs can directly influence deviant employee behaviors, and indirectly influence deviant behaviors via violation. Thus, we hypothesize that users who perceive a breach are more likely than other users to respond with resistance behavior.

H1: User-perceived PCBs increase user resistance.

3.2 Reneging

Reneging occurs when an ISP recognizes that an obligation exists but knowingly fails to follow through on that obligation. The inability to fulfill a particular obligation is considered to be one reason why reneging may occur (Morrison & Robinson, 1997). *ISP capabilities* refer to the ability of an ISP to leverage its resources to provide an accurate, timely, and reliable IS to users (Ravichandran &

Lertwongsatien, 2005). Ravichandran and Lertwongsatien (2005) offer four constructs for conceptualizing ISP capabilities that facilitate performance: IS planning sophistication, systems development capability, IS support maturity, and IS operations capability. Markus and Benjamin (1996) reported that effective ISPs are better able to fulfill their obligations, and that ISPs can use their powers of persuasion to ensure organizational adoption of the system.

Many studies have found that the level of ISP capabilities is a critical factor contributing to the success of IS implementations (Goh, Pan, & Zuo, 2013; Gu & Jung, 2013; Hung, Chen, & Wang, 2014). ISPs must deal with the risk generated by uncertain project requirements, changing circumstances, and the urgency surrounding project completion (Goh et al., 2013). The ISP must be capable of understanding the business processes and project needs. Communication, problem solving, and decision-making are also important capabilities required for effective IS implementation (Hung et al., 2014). In the context of this idea, we hypothesize that an ISP with greater capabilities will be less likely to break its promises or fail to fulfill its obligations under the user-ISP psychological contract, and that the user is therefore less likely to perceive a contract breach.

H2: Greater ISP capabilities decrease user-perceived PCBs.

User participation refers to the IS project objective-related behavior and activities of users or their representatives, and the extent to which users and their representatives engage in assignments, activities and behaviors during the IS implementation process (Barki & Hartwick, 1989). Prior studies on user participation in IS implementations have illustrated a link between this concept and success in systems implementations (Hartwick & Barki, 1994; McKeen, Guimaraes, & Wetherbe, 1994; Spears & Barki, 2010).

Reneging occurs because the organization is either unable to fulfill a promise or unwilling to do so (Robinson & Morrison, 2000). Positive user-participation activities might include users' routine review and approval of work done by the ISP during system implementation, or their contribution of a perspective to IT regarding how the business manages information. Thus, user participation can lead to a better communication of users' needs and make the ISP able to satisfy user requirements and fulfill obligations (Hartwick & Barki, 1994; Wixom and Watson, 2001).

Another reason reneging may occur is that the ISP is unwilling to fulfil a particular obligation. If an employee is perceived to have inadequately fulfilled his or her obligations, organization agents may view reneging as justified and be unwilling to fulfill their promised obligations (Robinson & Morrison, 2000). The user-ISP relationship is based on reciprocal obligations. The ISP provides benefits to the users in return for user participation and contributions. However, if users do not attend training sessions or required meetings, the ISP may assume that users do not consider mutual obligations to be important. The ISP may then opportunistically break certain obligations of its own, increasing the likelihood of a user-perceived PCB.

Moreover, from the user perspective, prior studies have found that user participation can lead to favorable attitudes toward the system and feelings of satisfaction about the development process because users who participate will likely influence system attributes in accordance with their personal needs and desires (Hartwick & Barki, 1994; Wu & Marakas, 2006). Users who participate tend to align their beliefs and attitudes, resulting in higher levels of involvement and more positive attitudes toward the system. Thus, they are less likely to perceive a PCB. Based on the above logic, we posit that when user participation in an IS implementation project is less than expected, the incidence of reneging will be greater. The following hypothesis is proposed.

H3: An increase in user participation decreases user-perceived PCBs.

3.3 Incongruence

In some cases, the perception of a contract breach may be rooted in *incongruence* that occurs when users hold beliefs about a given obligation or set of obligations that differ from those held by agents of the ISP (Robinson & Morrison, 2000). The three primary factors that contribute to incongruence are organizational socialization, the complexity and ambiguity of the perceived obligations, and communication between the employee and organizational agents (Morrison & Robinson, 1997).

Socialization is defined as a set of objectives, goals and values that have been taught and shared between the user and the ISP for the purpose of fulfilling the psychological contract concerning the IS implementation (Oshri, Kotlarsky, & Willcocks, 2007). Socialization and other activities to enhance knowledge integration between team members enable the effective sharing of schemata in both physical and virtual teams (Ahuja & Galvin, 2003; Bigliardi, Petroni, & Dormio, 2005). Research has consistently shown that organizational socialization is positively associated with organization-level project effectiveness, interfunctional coordination capabilities, and team performance (Wooldbridge & Minsky, 2002).

According to Morrison and Robinson (1997), organizational socialization may affect how an employee's cognitive schema (a set of beliefs and assumptions) differs from that of an organizational agent. Socialization is a process whereby employees learn the values, beliefs, and assumptions appropriate for a chosen profession or organization, and socialization enables organization members to share knowledge and learn their roles over time. ISPs must master technical skills, understand business processes, develop appropriate information systems, and convince users to accept and use the systems. Socialization can help IT professionals adjust to their sometimes unstructured roles (King, Xia, W., Quick, J. C., & Sethi, 2005). During the IS project implementation process, the ISP can also deploy a number of approaches or strategies to foster socialization between users and the ISP, including user-training programs and workshops (Lee, Kim, & Lee, 1996). Thus, it would seem logical that when an IS project's IS-related mutual obligations, objectives, and values are aligned within a well-socialized user-ISP relationship, incongruence would be less likely to occur, and the project would be less likely to suffer from PCBs. Thus, we propose the following hypothesis.

H4: More effective socialization within the user-ISP relationship decreases user-perceived PCBs.

Implicitness of promise is defined as the degree to which the ISP communicates its obligations to users using fuzzy and ambiguous statements (Robinson & Morrison, 2000). ISPs implementing an IS project may make various promises regarding the benefits or positive impact of the IS to intended users before they actually implement it, even in cases where no similar IS has existed before. For instance, an ISP may make implicit promises that they will build a better system than other benchmarking enterprises, or increase the quality of users' working lives (Markus & Mao, 2004). However, some implicit promises conveyed through organizational actions or indirect statements may also cause incongruence.

Perceived contract breach via incongruence is more likely when the promises comprising the psychological contract are complex and ambiguous in nature. Individuals engage in a construal process to interpret ambiguous stimuli; this process may cause two people to perceive the same stimulus very differently (Griffin & Ross, 1991; Robinson & Morrison, 2000). Implicit promises are particularly vulnerable to this construal process because their ambiguity allows users and the ISP to make assumptions that differ significantly. Thus, we hypothesize that users are more likely to perceive a PCB when there is a higher level of implicitness in the ISP's promises regarding the intended outcome of the system.

H5: Increasing promise implicitness increases user-perceived PCBs.

The IS implementation literature has identified communication between users and ISPs as a key ingredient of system success (Lee & Xia, 2011; Appan & Browne, 2012). While communication can be measured by frequency and quality, the present paper focuses primarily on the latter because the increased emphasis on the IT service client has necessitated a move toward quality measurements. Pursuant to the definition proposed by Chiu. Hsu, & Wang (2006), *communication* here refers to the degree to which the ISP and users have a shared language for understanding their mutual obligations in an IS project. Such communication in the context of an implementation process should promote a shared understanding of contextual knowledge (Smith & Rupp, 2002; Patnayakuni, Rai, & Tiwana, 2007). As a bond between users and the ISP, communication has a direct impact on users' perceptions of PCBs.

The more that an employee talks and interacts with organizational agents, the more likely they are to minimize inconsistent perceptions of their promised mutual obligations (Morrison & Robinson, 1997). While ISPs are responsible for communication dedicated to providing guidance and help to users, users are responsible for appropriately communicating their needs; a good overall level of communication quality in an IS implementation therefore implies cognitive knowledge augmentation between the two parties. Szajna and Scamell (1993) reported that communication between users and the ISP can ensure that users get an accurate picture of what the information system offers prior to its implementation and can further improve satisfaction with the system over time. Accordingly, we hypothesize that through communication, users will be more likely to form a set of beliefs and assumptions that are similar to those held by their ISP. As a result, the users will be less likely to subsequently perceive that their psychological contract has been breached.

H6: An increase in the quality of communication decreases user-perceived PCBs.

3.4 User Vigilance

A user who is highly vigilant may be more likely to perceive that the ISP has breached the psychological contract. Vigilance is related to three factors: uncertainty, past experience of a psychological contract breach, and the existence of alternatives (Robinson & Morrison, 2000).

Organizational change can create uncertainty regarding the fulfillment of psychological contracts. In this study, we adopt the definition of *change* proposed by Xia and Lee (2003): the degree to which

the uncertainty inherent in a given IS project may impact its users' current status. The significance of the degree of change is recognized mainly by how those who are affected by it perceive and react to it (Carr, Hard, & Trahant, 1996). Many IS implementations inherently imply multifarious changes which impact users' current status, such as change of job content, workforce reductions, loss of power, reductions in benefits, etc. (Jiang et al., 2000).

Almost any IS project has the potential to introduce uncertainty or imply changes that may adversely affect the IS provider's competencies, resources and abilities (Aladwani, 2002; Juna, Qiuzhen, & Qingguo, 2011). Also, certain types of changes tend to cause users to be more vigilant so that they can detect and respond to any PCB (Robinson & Morrison, 2000). Thus, we propose the following hypothesis.

H7: An increase in the extent of change increases user-perceived PCBs.

The importance of previous experience has been widely recognized in IS research (Hackbarth, Grover, & Yi, 2003). *History of breach* refers to a user's past PCB experiences with the ISP (Robinson & Morrison, 2000). The frequency and intensity of such negative past experiences will affect the likelihood of a user-perceived PCB in the present. Past experience is considered a vital factor affecting one's confidence in others (Grover, Cheon, & Teng, 1994) and the amount of trust underlying the employee-organization relationship (Robinson & Morrison, 2000). The lower an employee's trust, the more likely he or she will be to expect that promises will be broken. The employee will be likely to vigilantly monitor how well the organization is fulfilling its promised obligations to prevent such reneging. Therefore, a history of ISP breaches would aggravate the mechanism of user-perceived PCBs regarding the ISP by increasing users' alertness to and likeliness to monitor the fulfillment of the user-ISP psychological contract. Thus, we posit that the degree to which users perceive PCBs will be affected by the history of breaches associated with the ISP.

H8: A higher incidence of PCBs in the user's past (history of breach) increases the likelihood that the user will perceive a PCB in the present.

In this study, the term *alternative*s refers to the user's options for working without the intended IS (Robinson & Morrison, 2000). Employees with many alternatives will feel less threatened by the perception of a breach, because they have the option to stop working with the new IS without changing companies or jobs, or experiencing other negative repercussions (Morrison & Robinson, 1997; Robinson & Morrison, 2000; Deery, Iverson, & Walsh, 2006). Users who have realistic alternatives to using the intended system tend to feel that the ISP's PCBs are of relatively little concern, so they are less vigilant in monitoring the ISPs and care less about the fulfillment of the psychological contract than do users who have fewer options. Conversely, users who expect to have no other systems or methods for completing their work are more vigilant and hence more likely to perceive breaches. If employees must use the system and have no other alternatives, the system is critically important for performing their jobs (Brown, Massey, Montoya-Weiss, & Burkman, 2002). Users may be more highly motivated to think carefully about the messages from the ISP when the system is highly important or relevant to them (Petty & Cacioppo, 1986). Thus, we hypothesize that users will be more likely to perceive PCBs if they feel they have no option but to use the intended IS.

H9: Users' lack of alternatives increases their likelihood of perceiving a PCB.

3.5 Violations

Violation is defined as a feeling of betrayal and deep psychological distress (Rousseau, 1989; Robinson & Morrison, 2000). We adopt Robinson and Morrison's perspective of violation as going far beyond the cognitive process that we call the recognition of a breach; instead, violation entails a strong affective response. Cognitive appraisal could lead to an emotional response that, in turn, drives behavior (Bagozzi, 1992). Robinson and Morrison proposed the PCB framework and argued that the perception of a PCB easily leads to the type of intense affective response associated with violation. The cognitive recognition of a PCB can be deeply distressing for users, and can lead to a sense of violation. Several studies have confirmed the positive relationship between a PCB and this feeling of violation (Raja et al., 2004; Dulac, Coyle-Shapiro, Henderson, & Wayne, 2008; Suazo & Stone-Romero, 2011). Thus, we propose the following hypothesis.

H10: User-perceived PCBs increase feelings of violation.

IS researchers have suggested that affective factors contribute to technology acceptance, and that forming expectations involves nonrational inputs, including feelings, awareness of satisfaction, and other affective or emotion-related concepts (Guinea & Markus, 2009). The feeling of violation can push the employee to make deliberate judgments about his or her job and take undesirable actions. Violations have been found to be negatively related to trust, organizational commitment, and organizational citizenship behaviors, and positively related to cynicism and withdrawal behaviors (Pate, Martin, & Staines, 2000; Zhao, Wayne, Glibkowski, & Bravo, 2007; Chiang, Liao, Jiang, & Klein, 2012). Pate et al. (2000) also found that employees' perceptions of a contract

violation can increase their unwillingness to cooperate in organizational change. Thus, we posit that IS users' feelings of violation are positively related to their resistance.

H11: Feelings of violation increase user resistance.

3.6 Moderating Variables: User Interpretation

Morrison and Robinson (1997) argued that, following the perception of a contract breach, employees engage in a cognitive sense-making process through which they attempt to attach meaning to the event. This interpretation process is comprised of two important components: attributions and perceived fairness. This interpretation process moderates the relationship between the perceived PCB and the feeling of violation.

In this study, *causal attribution* refers to a user's blaming of the ISP for unfulfilled promises (Rousseau, 1995; Robinson & Morrison, 2000). Attribution theory provides a framework for explaining the way people interpret the causes of incidents (Turnley et al., 2003). System users—i.e., the consumers of IT products and services during an IS implementation—will tend to experience more intense feelings of violation following a perceived PCB if they make a causal attribution of the breach to the ISP. When faced with unfavorable or unexpected outcomes, people tend to search for explanations that allow them to assign responsibility. One of the most important factors affecting the attribution of responsibility is perceived intentionality (Bell & Tetlock, 1989). If the employee perceives that an organizational agent was aware that an agreement was being broken and that the breach of contract was a purposeful act, feelings of violation will be intensified. In other words, if users attribute the breach to reneging (i.e., the ISP's lack of ability or willingness) rather than to incongruence (i.e., a misunderstanding), they experience stronger feelings of violation. The former attribution will cause the user to blame the ISP; the latter will mitigate blame and thereby weaken the relationship between the perceived PCB and the feelings of violation (Robinson & Morrison, 2000), reducing the intensity of that sense of violation. Thus, we propose that the relationship between the PCB and feelings of violation will be stronger to the extent that the user attributes the situation to reneging rather than incongruence.

H12: Causal attribution of the breach to reneging increases the influence of a PCB on feelings of violation.

Perceived fairness refers to the user's assessment of the evenhandedness of the interactional and procedural treatment the user has received from the ISP during the IS project implementation (Bettencourt, Brown, & MacKenzie, 2005; Karatepe, 2006). Joshi used equity theory to compare user resistance in different firms, and found that users tend to resist more when they perceive their personal outcomes from the IS implementation to be inequitable or unfair (Joshi, 1991). In addition, several empirical studies have found that how fairly an employee was treated impacted the extent of his or her feelings of violation after a perceived PCB (Rousseau, 1989; Brockner & Wiesenfeld, 1996; Morrison & Robinson, 1997). Our study considers both interactional and procedural fairness (Walumbwa, Cropanzano, & Hartnell, 2009).

Interactional fairness (e.g., honesty, respect/considerateness, the offering of adequate explanations) and procedural fairness (e.g., an adequate decision-making process) imply the extent to which the ISP values or respects the user-ISP psychological contract. Unfair interpersonal treatment signals to a user that he or she is not valued or respected in the relationship, which intensifies feelings of anger and betrayal (Brockner & Wiesenfeld, 1996; Robinson & Morrison, 2000). Users' perceptions and judgments regarding the fairness of the ISP might seriously moderate the consequences of a perceived PCB. Thus, we hypothesize that a higher level of fairness in the interactional and procedural treatment of users in an IS project implementation will decrease the strength of the relationship between user-perceived PCB and users' feelings of violation.

H13: A high degree of perceived fairness reduces the influence of a PCB on feelings of violation.

3.7 Control Variables

Our research model incorporates three control variables: tenure, system type, and project duration. Prior research has indicated that senior users are likely to build up more explicit psychological contracts, and tend to react differently than do their junior colleagues when these contracts are broken (Bal, Lange, Jansen, & Velde, 2008). In this study, we measured users' tenure by years of service.

Different types of ISs tend to be associated with different functions and classes of users, and, thus, may be resisted for different reasons (Smissen et al., 2013). This study examines the effect of IS types, including transaction processing systems, management information systems, and strategy planning systems.

A longer IS project duration typically implies greater coordination costs and more complexity, which results in difficulties in communication and interactions with stakeholders (Patnayakuni et al., 2007). Therefore, a longer IS project duration is likely to be associated with higher levels of user resistance.

4 Research Methodology

4.1 Procedure and Sample

This research utilized empirical data collected from a survey conducted in January, 2014. The target participants for this study were required to have a full-time job related to IS usage at work, and to have participated in the implementation of that IS. To ensure that a respondent had interacted with an ISP during the implementation and that the ISP had implicitly or explicitly promised them something during this interaction, the survey instructions informed all participants about the two qualifications for participating in the survey. After reading the survey instructions, the respondent was asked to confirm that he or she agreed to participate in the study with full knowledge of everything noted in the survey instructions. In the data collection phase, we used convenience sampling and also drew from the social network of the researcher. We asked MIS graduates and students enrolled in a master-level MIS program in Taiwan to help us deliver the questionnaire to their colleagues and clients who use IS in the workplace. In the data analysis phase, we used SmartPLS for hypothesis validation, and assessed the structural relationships between the variables.

We received 249 completed surveys. After eliminating responses with missing values, 230 valid surveys were retained for hypothesis testing. The demographic information is shown in Table 2. Most respondents were male, 85% of the respondents were from 21 to 40 years old, and tenure ranging from 1 to 10 years constituted 60% of the sample. These distributions are similar to those of a recent study on user resistance (Kim & Kankanhalli, 2009). A chi-square test was used to compare the demographic attributes of the first and fourth quartiles of the respondents. The results showed that respondents and nonrespondents did not differ significantly with respect to gender (p=0.193), age (p=0.564), and tenure (p=0.376), suggesting no substantive nonresponse bias. The results indicate that the sample is representative.

Table 2. Sample Demographics

Measure	Categories	#	%	Measure	Categories	#	%
Gender	Male	129	56.1	System	Transaction	103	44.8
	Female	101	43.9	type	Management	66	28.7
					Strategy planning	27	11.7
					Other*	34	14.8
Age	21-30	90	39.1	Project	In-house	122	53.0
	31-40	107	46.5	method	Outsourcing**	108	47.0
	41-50	29	12.6				
	More than 51	4	1.7				
Tenure	Less than 1 year	13	5.7	Project	Less than 3 months	30	13.0
	1-5 year(s)	74	32.2	duration	3-6 months	65	28.3
	6-10 years	65	28.3		6-12 months	53	23.0
	10-15 years	54	23.5		12-18 months	31	13.5
	More than 15 years	24	10.4		More than 18 months	51	22.2
Department	Manufacturing	34	14.8				
	Sales & Marketing	30	13.0				
	Human Resources	22	9.6				
	R & D	38	16.5				
	Finance	7	3.0				
	Customer Service	14	6.1				
	Administration	43	18.7				
	Information	42	18.3				

* E-commerce, mobile commerce system, portal website, and knowledge management system
** Include off-the-shelf software purchasing and cloud service subscription

4.2 Measurement

Table 3 shows the constructs and operational definitions. We adapted the measurement items from relevant research literature. To assess face validity and content validity, we first pretested the items with four experts, then we conducted a pilot test by administering questionnaires to MBA graduates of an academic institute in Taiwan in order to ensure that participants could understand the questions. We measured the items using seven-point Likert scales ranging from 1 (strongly disagree) to 7 (strongly agree).

Table 3. Operational Definitions of Constructs

Construct	Operational definition	Number of items	References
User resistance	The opposition to perceived change related to a new IS implementation by the users who were expected to operate it.	4	Kim & Kankanhalli (2009); Bovey & Hede (2001)
User perceived psychological contract breach	A user's perceptions of the extent to which the ISP failed to fulfill one or more obligations under the psychological contract in relation to an IS implementation.	3	Robinson & Morrison (2000); Conway & Briner (2002a, 2002b)
Feeling of violation	A user's experience of the feelings of betrayal and deeper psychological distress.	4	Robinson & Morrison (2000); Rousseau (1989)
ISP capabilities	The ability of an ISP to leverage its resources to provide an accurate, timely and reliable IS to the users.	4	Mithas et al. (2011); Ravichandran and Lertwongsatien (2005)
User participation	The behavior and activities related to the IS project objective which are performed by users and their representatives during the IS implementation.	3	Barki & Hartwick (1989)
Socialization	A set of objectives, goals, and values that have been taught and shared between the user and the ISP for the purpose of fulfilling the psychological contract concerning the IS implementation.	4	Chao, O'Leary-Kelly, Wolf, Klein, & Gardner (1994); Oshri et al. (2007a, 2007b)
Implicitness of promise	The degree to which the ISP indicates their obligations to users using fuzzy and ambiguous statements.	4	Robinson & Morrison (2000)
Communication	The degree to which the ISP and users have a shared language for understanding their mutual obligations in the IS implementation.	3	Chiu et al. (2006); Reich & Benbasat (1996)
Change	The degree of uncertainty inherent in the IS implementation.	3	Xia & Lee (2003)
History of breach	A user's past experiences of PCB by their IS providers.	3	Robinson & Morrison (2000)
Alternative	The options for a user to work without the intended IS.	3	Robinson & Morrison (2000)
Causal attribution	A user's blaming of the ISP for unfulfilled promises.	1	Rousseau (1995); Robinson & Morrison (2000)
Perceived fairness	A user's assessment of the evenhandedness of the interactional and procedural treatment he or she received from the ISP during the IS implementation.	8	Bettencourt et al. (2005); Karatepe (2006)

5 Data Analysis and Results

5.1 Measurement Model

The reliability of the scales can be ensured through examining composite reliability (CR), Cronbach's alpha, and average variance extracted (AVE). These three values should be greater than 0.7, 0.7, and 0.5, respectively (Nunnally, 1978). The results shown in Table 4 indicate that the scales have good reliability.

The item-total correlation (ITC) of all items range from 0.695 to 0.967, all factor loadings are above 0.7, and the AVE of constructs range from 0.806 to 0.986, supporting the convergent validity of the measurement items. Discriminant validity is ensured because the square root of AVE of any latent variable exceeds the correlation between it and any other latent variables (see Table A1, Appendix A) (Fornell & Larcker, 1981). The cross-factor loadings (see Table A2, Appendix A) also indicate acceptable discriminant validity because the loading of each measurement item on its assigned latent variable is larger than its loading on any other construct.

Table 4. Factor Analysis

Construct		Item	Factors	
			Loading	ITC
	Regarding the IS implementation, I believed that…			
User resistance (RST) CR=0.965, Alpha=0.939, AVE=0.846	1	I opposed the change to a new way to work with this system.	0.928	0.857
	2	I didn't comply with the new way of working with the system.	0.859	0.780
	3	I was uncooperative and did not use this system to do my work.	0.949	0.906
	4	I didn't agree with the change to the way we work with this system.	0.939	0.877
User perceived psychological contract breach (PCB) CR=0.984, Alpha=0.975, AVE=0.953	1	My ISP has NOT done an excellent job of meeting its promises so far.	0.965	0.923
	2	My ISP did NOT come through in fulfilling the promises it made.	0.986	0.967
	3	My ISP has broken many of its promises on this IS project.	0.977	0.949
Feeling of violation (FV) CR=0.956, Alpha=0.938, AVE=0.844	1	I felt a great deal of anger toward my ISP.	0.926	0.873
	2	I felt extremely disappointed by how I was treated by my ISP.	0.868	0.781
	3	I felt betrayed by my ISP.	0.952	0.903
	4	I felt that my ISP violated the promises between us.	0.927	0.857`
	During the IS implementation, I believed that…			
ISP capabilities (ISPC) CR=0.965, Alpha=0.952, AVE=0.875	1	My ISP's IS planning was sufficiently sophisticated.	0.934	0.878
	2	My ISP's IS development capabilities were adequate.	0.934	0.884
	3	My ISP's IS operational capabilities were adequate.	0.950	0.914
	4	My ISP's support for the IS was mature.	0.924	0.858
User participation (UP) CR=0.906, Alpha=0.850, AVE=0.762	1	I spent a great amount of time and effort on the development of this IS.	0.894	0.725
	2	I had responsibility for participating in the development of this IS.	0.915	0.737
	3	I materially participated in the decision-making activities of this IS development project.	0.806	0.695
Communication (COM) CR=0.967, Alpha=0.949, AVE=0.907	1	My ISP and I used an understandable communication pattern for discussion.	0.951	0.887
	2	My ISP and I used understandable narrative forms for communication.	0.971	0.932
	3	My ISP and I used common terms or jargon in our interactions.	0.935	0.858
Implicitness of promise (IMP) CR=0.961, Alpha=0.947, AVE=0.860	1	The nature of our obligations to the IS project was NOT clear.	0.889	0.805
	2	I was NOT explicit about the details of our obligations in this IS implementation.	0.955	0.910
	3	My ISP did NOT express the details of its obligations in the IS implementation.	0.943	0.893
	4	My ISP talked in only general terms about its obligations in the IS implementation	0.922	0.870
Socialization (SOC) CR=0.965, Alpha=0.951, AVE=0.873	1	The ISP's goals for this IS implementation were also mine.	0.927	0.862
	2	I understood the ISP's goals for this IS implementation.	0.948	0.899
	3	I supported the goals for this IS implementation set by my ISP.	0.921	0.870
	4	I agreed with the goals for this IS implementation set by my ISP.	0.941	0.897
Alternative (ALT) CR=0.968,	1	I couldn't complete my work without this IS.	0.909	0.931
	2	I had no alternatives but to work with this IS.	0.971	0.948

Alpha=0.969, AVE=0.911	3	I could only work with this IS.	0.982	0.918
Change (CHG) CR=0.913, Alpha=0.859, AVE=0.777	1	The environment was fraught with uncertainty.	0.882	0.750
	2	Many departments were involved, creating a high degree of complexity.	0.866	0.747
	3	Human capital, budget and related resources were insufficient.	0.895	0.702
History of breach (HIS) CR=0.966, Alpha=0.947, AVE=0.905	1	My ISP failed to fulfill the promises it made on record.	0.956	0.899
	2	My ISP broke its promises on more than one occasion.	0.967	0.920
	3	My ISP didn't always keep its promises in the past.	0.930	0.851
Causal attribution (CAT)	1	I believe my ISP must take the most of the responsibility for the breaches.	N/A	N/A
Perceived fairness (PF) CR=0.952, Alpha=0.943, AVE=0.712	1	My ISP was courteous to me.	0.824	0.762
	2	My ISP was honest with me.	0.851	0.774
	3	My ISP showed concern for me.	0.871	0.804
	4	My ISP put the proper effort into resolving my problems.	0.881	0.853
	5	Users affected by the IS implementation decisions had their concerns heard.	0.876	0.825
	6	Requests for clarification and additional information about the decisions were allowed.	0.783	0.770
	7	Opportunities were provided to appeal or challenge the decisions.	0.863	0.817
	8	Users' complaints were handled and resolved in a timely manner.	0.796	0.754

5.2 Common Method Variance

Common method variance (CMV) was a possible concern in this study since we used a self-reported survey. To assess CMV, we used the marker technique proposed by Richardson, Simmering, and Sturman (2009). We also followed certain steps of the marker variable technique employed by Malhotra et al. (2006) in a post hoc manner. We chose the second-smallest positive correlation between two manifest variables (0.002) as a conservative estimate (Venkatesh, Thong, & Xu, 2012). After the deduction of this value from all correlations, we reran our analysis for CMV-adjusted correlation. No significant differences were found between the original correlation estimates and the adjusted ones. Thus, CMV is unlikely to be of concern in this study.

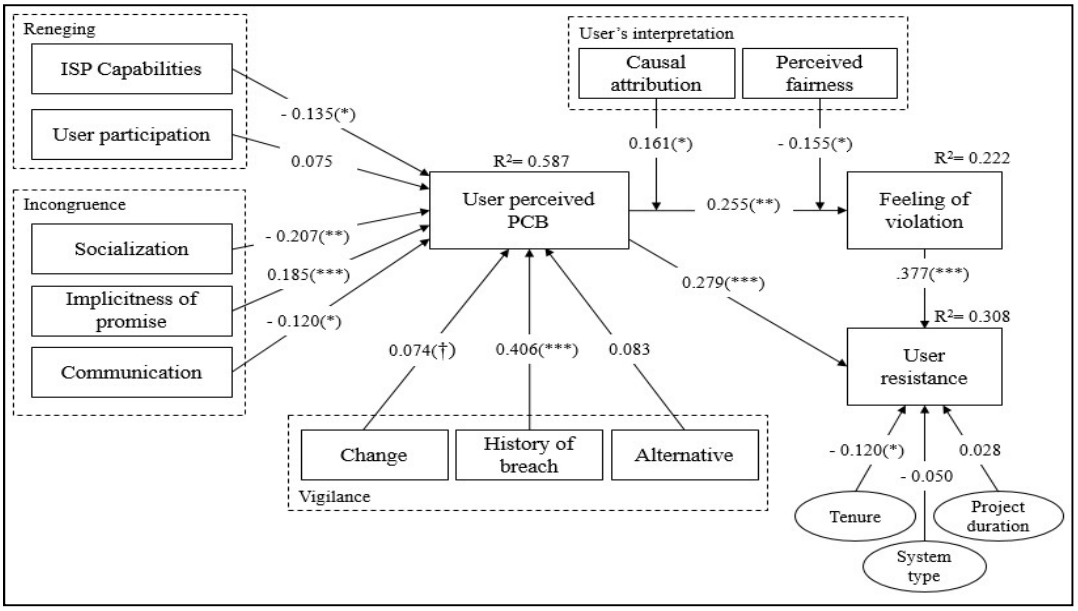
5.3 Structural Model

We tested the hypotheses via partial least squares (PLS) regression analyses using SmartPLS 2.0.M3 with a bootstrapping algorithm (resample 5,000). In order to determine whether each hypothesis was supported, we assessed a t-statistic of each standardized path coefficient. Figure 2 shows all path coefficients, significance levels, and R^2 values. As indicated, user-perceived PCB (β=0.255, $p<0.01$) significantly and positively affected user resistance. This result confirms our expectations and provides support for Hypothesis 1.

ISP capabilities (β=-0.135, $p<0.05$, t=2.103) affected user-perceived PCB negatively. This result confirms our expectations and provides support for Hypothesis 2. However, the effect of user participation (β=0.075, $p>0.1$, t=1.585) on user-perceived PCB was not significant, and thus Hypothesis 3 was not supported. The path coefficients from socialization (β=-0.207, $p<0.001$, t=2.977) and communication (β=-0.120, $p<0.05$, t=2.043) to user-perceived PCB were negative and highly significant, while implicitness of promise (β=0.185, $p<0.001$, t=3.367) affected user-perceived PCB positively, indicating support for Hypotheses 4, 5 and 6.

History of breach (β=0.406, $p<0.001$, t=6.251) and change (β=0.074, $p<0.1$, t=1.710) affected PCB positively, supporting Hypotheses 7 and 8. However, alternatives (β=0.083, $p>0.1$, t=1.579) did not affect PCB significantly. Thus, Hypothesis 9 was not supported.

Users' PCB (β=0.255, $p<0.01$, t=2.926) affected feelings of violation while feelings of violation (β=0.377, $p<0.001$, t=5.188) affected user resistance, indicating the important role of PCB for increasing users' feelings of violation and, in turn, user resistance (β=0.279, $p<0.001$, t=3.951). These results support Hypotheses 10 and 11.



Note: p < 0.1; * p < 0.05; ** p < 0.01; *** p < 0.00

Figure 2. Structural Model and Path Coefficients

We further classified the participants into two groups: high vs. low PCB. Participants with scores above the mean were classified as high in PCB, and those with scores below the mean were classified as low in PCB. The PCB scores of the participants ranged from 1 to 7, and the mean was 3.397. Of the 230 participants, 107 were high in PCB (mean=4.555, sd.=0.858) and 123 were low (mean=2.390, sd.=0.631). The t-test results shown in Table 5 validate the PLS result. High PCB led to feelings of violation (t=-4.433, p<0.001) and user resistance (t=-5.67, p<0.001). Participants who perceived high PCB also perceived lower ISP capabilities, user participation, socialization, communication, higher implicitness of promise, and history of breach than participants who perceived low PCB.

Table 5. Comparison Between High and Low PCB

Construct	Low PCB	High PCB	t-value
ISP capabilities	5.506 (0.883)	4.479 (1.232)	7.171***
User participation	5.154 (1.097)	4.664 (1.238)	3.190**
Socialization	5.234 (0.918)	4.220 (1.115)	7.561***
Implicitness of promise	3.419 (1.253)	4.586 (1.194)	-7.208***
Communication	5.222 (1.067)	4.315 (1.223)	6.011***
Change	4.683 (1.238)	4.801 (1.291)	-0.705
History of breach	3.041 (1.262)	4.548 (1.132)	-9.477***
Alternative	3.859 (1.684)	3.953 (1.524)	-0.445
Feeling of violation	3.957 (1.298)	4.673 (1.126)	-4.433***
User resistance	3.106 (1.247)	4.103 (1.420)	-5.670***
**: p<0.01; ***: p<0.001.			

5.4 Analysis of Moderating Effect

We used a moderated multiple regression (MMR) analysis to test the moderating effects of causal attribution and perceived fairness on the relationship between PCB and feelings of violation. This was done in accordance with Aiken and West's (1991) guidelines and Carte and Russell's (2003) argument. As shown in Table 6, we found that the interaction between breach and causal attribution resulted in a significant increase in the explained variance in predicting feelings of violation ($\triangle R^2$=0.048,

β=0.277, p<0.001). The interaction between PCB and perceived fairness resulted in a significant increase in the explained variance in predicting feelings of violation ($\triangle R^2$=0.045, β=-0.230, p<0.01). These interactions were plotted as shown in Figures 3 and 4. The effects of PCB on feelings of violation were stronger for those users who thought the ISP should take primary responsibility for unmet promises regarding implementation, as well as for those who perceived relatively low levels of fairness in either the interactional or procedural aspects of the implementation.

To summarize, the results show that the magnitude of the impact of PCB on feelings of violation is associated with both the level of causal attribution (β=0.161, p<0.05, t=2.152) and with perceived fairness (β=-0.155, p<0.05, t=2.042). Hence, Hypotheses 12 and 13 are supported. This suggests that feelings of violation were most likely to decrease when users believed that the ISP had not intentionally reneged on its commitments and/or had treated them with a higher degree of fairness.

Table 6. Interaction Effects

Variables	Direct effect	Interaction effect		
	Model 0	Model 1 PCB*CAT	Model 0 PCB*PF	Model 1 PCB*CAT, PCB*PF
User-perceived PCB (PCB)	0.276***	0.216*	0.309***	0.255**
Causal attribution (CAT)	0.212**	0.202**	0.220**	0.211**
Perceived fairness (PF)	0.081	0.059	0.181†	0.133
PCB*CAT	--	0.227***	--	0.161*
PCB*PF	--	--	-0.230**	-0.155*
R2	R_0^2= 0.157	R_1^2 = 0.205	R_2^2 = 0.202	R_3^2= 0.202
R2 difference	--	0.048***	0.045**	0.065***

Note: p<0.1; *: p<0.05; **: p<0.01; ***: p<0.001.
Dependent variable: Feeling of violation; Moderators: Causal attribution and perceived fairness.

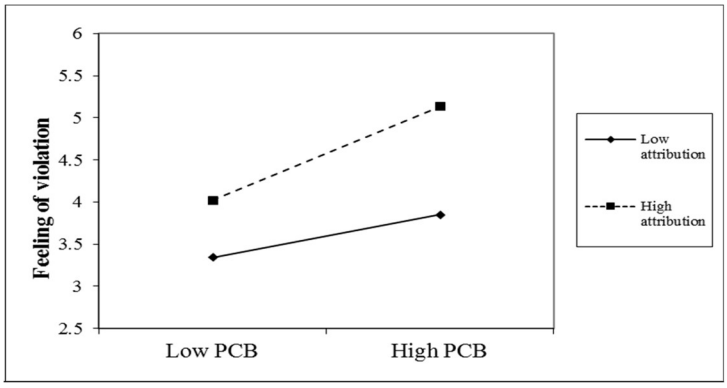


Figure 3. Interaction Effect of Casual Attribution

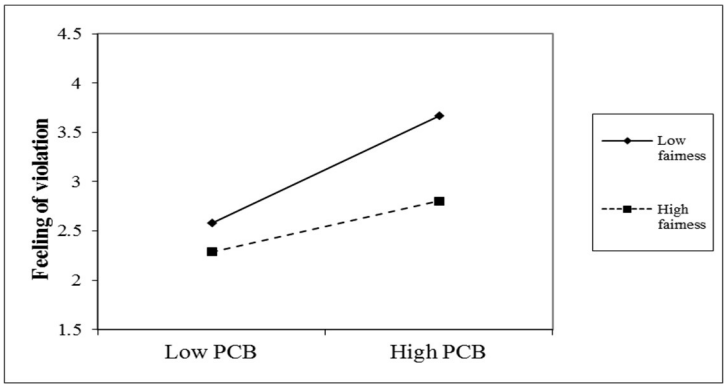


Figure 4. Interaction Effect of Perceived Fairness

6 Discussion

6.1 Impacts of User-Perceived PCB

The path coefficient between user-perceived PCB and user resistance was positive and significant. This result reinforces the findings of Chiu and Peng (2008) and Restubog et al. (2012), who examined the association between PCBs and deviant behaviors in the workplace. We have established PCB as an important variable that influence user resistance behaviors in the context of IS project implementation.

Feelings of violation were found to be a consequence of user-perceived PCB. Additionally, the path coefficient between feelings of violation and user resistance was positive and significant. Significant correlations exist between feelings of violation and both user-perceived PCB and resistance. This result is in line with prior studies (Cassar & Briner, 2011; Restubog et al., 2012), and supports the idea that PCBs could increase feelings of violation that then translate into resistance.

6.2 Antecedents of User-Perceived PCBs

In answering our research questions, we have identified the links between characteristics inherent to IS implementation and user-perceived PCB. This relationship comprises three dimensions: (1) reneging, which is caused by lack of capabilities; (2) incongruence, which is caused by poor communication, implicitness of promises, or poor socialization; and (3) vigilance, which is caused by a high degree of environmental change, or a history of breaches. The negative correlation between ISP capabilities and PCB was supported and was consistent with previous studies (Ravichandran & Lertwongsatien, 2005; Xu, Zhang, & Barkhi, 2010). By using the partial least squares (PLS) technique, we found that user participation has a positive and insignificant path coefficient with PCB; however, the correlation between these two variables was clearly negative (β=-0.220, $p<0.01$). A reasonable explanation would be that some factor suppresses the size of the effect of user participation on perceived PCB, relative to that of other variables in the structural model.

The significant negative correlation between socialization and PCB reinforces the findings of Azad and Faraj (2011) and Lawson, Peterson, Cousins, and Handfield (2009), who noted the importance of socialization in IS implementations. This finding supports related research by Cousins, Handfield, Lawson, and Petersen (2006), who found that socialization leads to the creation of user-ISP relationships. Our results show that enhanced socialization can help decrease the likelihood of a PCB, probably because IS implementation is a social activity between users and ISPs. Our results suggest that high levels of promise implicitness can contribute to user-perceived PCB. Jiang et al. (2006) found that incomplete, ambiguous, inconsistent, or frequently changing requirements can make it difficult for users to predict project outcomes, and hence make users more likely to resist change. Users and ISPs are both social actors in an IS implementation, the success of which evolves in part from the quantity of the communication and interaction between users and the ISP during the implementation process, and the high quality of those interactions. Our results support the idea that users will be more likely to accept change if they are well informed (Agboola & Salawu, 2011).

We found a relatively weak but significant relationship between change and user-perceived PCB. This result was consistent with previous work. Kwahk and Kim (2008) examined the effect of readiness for change on intention to use ERP systems, concluding that organizational members who have positive perceptions of organizational transformation and are ready for it are more likely to take part in the change, which can reduce user resistance after its

implementation. We also found that a high level of user perceived competence and commitment results from the lack of prior experiences of PCB, which is consistent with prior literature (Morrison & Robinson, 1997; Robinson & Morrison, 2000; Lo & Aryee, 2003). As Dulac et al. (2008) suggested, a prior history of unreciprocated exchanges leads to PCBs and plays a critical role in accounting for attitudes. We did not find a significant relationship between alternatives and PCB. One possible explanation is that in our data the population of respondents who reported mandatory use (66.5%) was twice as large as that reporting voluntary use (33.5%). Additionally, in our specific IS implementation context, we should consider not only the availability of system alternatives, but also the quality, cost, and performance of such alternatives.

6.3 Moderating Roles of Causal Attribution and Perceived Fairness

Our results revealed that user-perceived PCB and interpretation have an interaction effect on feelings of violation. The higher the level of causal attribution, i.e., ascribing greater levels of responsibility for a PCB to the ISP, the greater the magnitude of feelings of violation. Moreover, we found that a higher level of perceived fairness mitigates the effect of PCB on feelings of violation.

ISPs should pay considerable attention to negative affective responses from users once a PCB occurs, because this response could be reflected in users' resistant attitudes and behaviors (Suazo, Turnley, & Mai-Dalton, 2008). An ISP should take care to ensure a sense of fairness for users during IS implementations and keep users from causally attributing breaches to the ISP so that any feelings of violation can be mitigated.

7 Conclusion

This study extends our understanding of user resistance to IS implementations from the perspective of PCBs. The findings show that PCBs have significant impacts on user resistance. The factors of reneging, incongruence, and vigilance contribute to user perceptions of a psychological contract breach by an ISP. Moreover, our analysis shows that the effect of PCBs on negative affective responses is reduced by higher degrees of fairness, and increases when users ascribe the PCB to the ISP. This study also proposes that a user-perceived PCB in an IS implementation reflects profound damage to the user-ISP relationship and future cooperation, and those who experience a PCB may retaliate by reducing their involvement.

7.1 Academic Implications

Our findings have several theoretical implications. First, this study fills a gap in the user-resistance literature by considering psychological contracts between users and the ISP. The integration of user-perceived PCBs and resistance also results in a more predictive model that better explains users' feelings of violation and actual resistance behavior. This study also extends the PCB literature from employer-employee relationships to user-ISP relationships in IS project implementations. Second, this study sheds light on the underlying sources of user-perceived PCBs and their extension to the community of users as a social group within the organization. The research results allow us to better understand when and why users are most likely to experience PCBs and feelings of violation during IS implementations—researchers can use this information to identify ways to minimize the occurrence of user-perceived PCB and its destructive consequences. Third, our findings support the idea that an attributional explanation of PCBs can influence user attitudes and affective responses to the introduction of IS projects in organizations (Martinko et al., 1996). Users who assign the causes of a PCB to the ISP are more likely to feel violated. Fourth, our study clarifies how perceived fairness, both interactional and procedural, helps suppress the effect of user-perceived PCBs on feelings of violation and further relieves resistance. Finally, the present study transforms PCBs from a "hidden" element of IS user resistance to a central element, which highlights ISP accountability in IS implementations. A psychological contract is based on a user's beliefs about the reciprocal obligations between that user and the ISP; however, these obligations are not necessarily always recognized by the ISP. Along with the current PCB, the user's past experiences of PCB by the ISP also increase the user's reluctance to change to a new way of working involving a new system.

7.2 Practical Implications

This study suggests that ISPs should avoid engaging in specific behaviors that could trigger a breach, while ensuring that their project-related promises and obligations are fulfilled. Moreover, IT consultants and ISPs should ensure that all parties accurately understand their mutual obligations and maintain reasonable expectations. IT consultants and ISPs must define obligations and make their promises clear and explicit. ISPs should be more aware of the congruence of user-ISP psychological contracts, and avoid reneging on their implementation obligations through negligence or disregard. ISPs should reduce uncertainty about whether they will be able to maintain users' psychological contracts with them, and be particularly careful about managing the

perceptions held by users who have previously experienced breaches of the psychological contract. These users may be especially likely to perceive a breach of their current psychological contract. We recommend that the ISP monitor and guide the user's perceptions of the organization's obligations and how well the ISP is fulfilling those obligations.

Because a breach caused by an individual member of an ISP could have serious repercussions for the community of IT consultants and the ISP as a whole, all IT managers and ISP representatives should strive to prevent breaches. If a PCB happens, managers should know how to relieve users' feelings of violation. The ISP should manage user attributions for a perceived contract breach by offering adequate explanations, and ensure that users feel that they have been treated fairly.

7.3 Limitations and Suggestions for Future Research

The current study has some methodological constraints that could be addressed in future research. First, this was a typical IS study insofar as user participation was examined at an individual level of analysis via self-reporting. Future research may benefit from measuring user participation from multiple sources (supervisors, coworkers, etc.) so that the levels of user participation can be evaluated more accurately.

Second, legacy thinking, pseudo-participation, and different motivations have been reported as limiting user-ISP socialization during the initial phases of an IS project; however, ISPs could improve user engagement in the postimplementation environment (Wagner & Newell, 2007). A comparison of breaches that occur in different phases of IS implementations is a potentially fruitful topic for further study.

Our results support the argument that the user-ISP relationship is socially constructed. We expect that the results of this study will encourage future researchers of related topics to use the perspective of the psychological contract breach to consider other variables of user resistance, such as perceived organizational support and complementary assets.

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Appendix

Table A1. Descriptive Statistics and Correlation Matrix

	Mean	S.D.	Correlation Matrix[a]												
			RST	PCB	FV	ISPC	UP	SOC	IMP	COM	CHG	HIS	ALT	CAT	PF
RST	3.57	1.42	**0.920**												
PCB	3.40	1.31	0.411	**0.976**											
FV	4.29	1.27	0.474	0.349	**0.919**										
ISPC	5.03	1.18	-.253	-.475	-.073	**0.935**									
UP	4.93	1.19	-.194	-.220	-.013	0.298	**0.873**								
SOC	4.76	1.13	-.323	-.532	-.202	0.538	0.359	**0.934**							
IMP	3.96	1.36	0.288	0.532	0.163	-.313	-.226	-.401	**0.928**						
COM	4.80	1.23	-.244	-.419	-.057	0.418	0.462	0.469	-.265	**0.952**					
CHG	4.74	1.26	0.156	0.123	0.201	0.047	-.055	-.028	0.002	-.082	**0.881**				
HIS	3.74	1.42	0.342	0.657	0.347	-.365	-.211	-.383	0.506	-.313	0.120	**0.951**			
ALT	3.90	1.61	0.091	0.054	0.024	0.011	0.074	0.097	0.014	0.017	-.072	-.021	**0.955**		
CAT	3.73	1.58	0.409	0.518	0.329	-.301	-.220	-.318	0.462	-.296	0.217	0.462	0.031	**1.000**	
PF	5.24	1.01	-.259	-.453	-.114	0.583	0.415	0.639	-.372	0.447	0.028	-.353	-.080	-.330	**0.844**

[a] The diagonal line of correlation matrix represents the square root of AVE.

Table A2. Cross Factor Loading

	RST	PCB	FV	ISPC	UP	SOC	IMP	COM	CHG	HIS	ALT	CAT	PF
RST1	**0.928**	0.409	0.495	-.198	-.168	-.345	0.295	-.231	0.128	0.314	0.018	0.360	-.253
RST2	**0.859**	0.290	0.361	-.183	-.233	-.299	0.247	-.250	0.226	0.284	0.099	0.323	-.221
RST3	**0.949**	0.376	0.407	-.281	-.167	-.279	0.260	-.206	0.157	0.336	0.070	0.431	-.232
RST4	**0.939**	0.417	0.464	-.266	-.161	-.267	0.253	-.215	0.085	0.321	0.151	0.388	-.242
PCB1	0.374	**0.965**	0.335	-.465	-.198	-.518	0.516	-.387	0.143	0.641	0.024	0.473	-.433
PCB2	0.421	**0.986**	0.354	-.469	-.233	-.520	0.509	-.411	0.101	0.657	0.068	0.528	-.443
PCB3	0.406	**0.977**	0.334	-.458	-.213	-.521	0.533	-.430	0.115	0.627	0.065	0.515	-.449
FV1	0.429	0.326	**0.926**	-.075	-.040	-.199	0.144	-.087	0.201	0.283	-.023	0.260	-.139
FV2	0.367	0.332	**0.868**	-.120	-.062	-.221	0.186	-.069	0.213	0.390	-.041	0.329	-.132
FV3	0.477	0.311	**0.952**	-.040	0.022	-.188	0.133	-.045	0.156	0.301	0.058	0.311	-.083
FV4	0.462	0.319	**0.927**	-.040	0.023	-.140	0.142	-.015	0.175	0.309	0.082	0.309	-.072
ISPC1	-.207	-.461	-.108	**0.934**	0.273	0.509	-.311	0.411	0.038	-.339	0.048	-.243	0.530
ISPC2	-.278	-.433	-.018	**0.934**	0.308	0.527	-.306	0.374	0.078	-.336	0.014	-.283	0.550
ISPC3	-.253	-.410	-.035	**0.950**	0.310	0.501	-.277	0.376	0.069	-.333	-.022	-.281	0.557
ISPC4	-.214	-.470	-.103	**0.924**	0.230	0.475	-.277	0.401	-0.004	-0.356	-0.003	-0.318	0.546
UP2	-.161	-.202	0.017	0.252	**0.894**	0.339	-.242	0.418	-.058	-.186	0.097	-.195	0.371
UP3	-.178	-.228	-.050	0.273	**0.915**	0.317	-.192	0.417	-.048	-.204	0.073	-.228	0.387
UP4	-.179	-.113	0.016	0.267	**0.806**	0.278	-.141	0.376	-.031	-.152	-.007	-.124	0.320
SOC1	-.301	-.511	-.199	0.520	0.303	**0.927**	-.368	0.400	-.017	-.380	0.107	-.311	0.599
SOC2	0.318	-.522	-.220	0.500	0.313	**0.948**	-.364	0.449	-.042	-.418	0.090	-.340	0.626

Table A2. Cross Factor Loading

SOC3	-.299	-.436	-.146	0.452	0.365	**0.921**	-.380	0.444	-.031	-.283	0.093	-.241	0.567
SOC4	-.291	-.511	-.183	0.531	0.366	**0.941**	-.389	0.463	-.014	-.340	0.075	-.286	0.593
IMP1	0.239	0.485	0.183	-.288	-.200	-.335	**0.889**	-.246	-.001	0.468	-.019	0.268	-.308
IMP2	0.298	0.540	0.161	-.296	-.237	-.412	**0.955**	-.264	0.025	0.474	-.006	0.373	-.372
IMP3	0.250	0.506	0.112	-.289	-.210	-.397	**0.943**	-.239	0.007	0.469	0.022	0.360	-.333
IMP4	0.279	0.431	0.152	-.289	-.187	-.338	**0.922**	-.231	-.027	0.468	0.062	0.337	-.369
COM1	-.258	-.402	-.051	0.420	0.457	0.455	-.245	**0.951**	-.063	-.316	0.035	-.298	0.436
COM2	-.222	-.402	-.068	0.397	0.453	0.449	-.263	**0.971**	-.069	-.297	0.042	-.268	0.409
COM3	-.215	-.394	-.044	0.377	0.410	0.437	-.249	**0.935**	-.102	-.280	-.030	-.280	0.432
CHG1	0.090	0.101	0.135	0.084	-.045	0.020	-.030	-.125	**0.882**	0.069	-.062	0.140	0.055
CHG2	0.092	0.088	0.235	0.078	-.004	-.035	-.014	-.033	**0.866**	0.118	-.016	0.165	0.017
CHG3	0.206	0.128	0.172	-.018	-.081	-.052	0.039	-.057	**0.895**	0.127	-.099	0.251	0.007
HIS1	0.315	0.619	0.317	-.354	-.176	0.317	0.458	-.313	0.085	**0.956**	-.006	0.408	-.342
HIS2	0.368	0.659	0.349	-.359	-.206	0.349	0.498	-.297	0.121	**0.967**	-.007	0.472	-.340
HIS3	0.288	0.595	0.325	-.328	-.222	0.325	0.489	-.284	0.136	**0.930**	-.048	0.436	-.325
ALT1	0.063	-.012	0.051	0.041	0.127	0.172	-.051	0.081	-.067	-.021	**0.909**	-.011	-.011
ALT2	0.081	0.043	0.017	0.005	0.068	0.106	0.000	0.032	-.084	-.015	**0.971**	0.021	-.093
ALT3	0.091	0.047	0.037	0.023	0.091	0.106	0.010	0.018	-.059	-.026	**0.982**	0.029	-.049
CAT1	0.409	0.518	0.329	-.301	-.220	-.318	0.362	-.296	0.217	0.462	0.031	**1.000**	-.330
PF1	-.205	-.391	-.060	0.430	0.345	0.516	-.318	0.440	-.038	-.338	-.092	-.217	**0.824**
PF2	-.181	-.367	-.108	0.490	0.311	0.531	-.355	0.409	-.054	-.308	-.038	-.278	**0.851**
PF3	-.208	-.385	-.110	0.526	0.343	0.571	-.368	0.415	-.035	-.298	-.042	-.237	**0.871**
PF4	-.254	-.386	-.073	0.532	0.342	0.569	-.309	0.436	0.060	-.274	-.077	-.279	**0.881**
PF5	-.269	-.428	-.103	0.488	0.349	0.564	-.322	0.367	0.052	-.319	-.116	-.351	**0.876**
PF6	-.204	-.354	-.017	0.503	0.387	0.484	-.272	0.294	0.131	-.265	-.080	-.270	**0.783**
PF7	-.254	-.378	-.130	0.482	0.398	0.536	-.270	0.326	0.099	-.293	-.092	-.314	**0.863**
PF8	-.148	-.377	-.066	0.539	0.381	0.539	-.283	0.327	0.047	-.294	-.005	-.253	**0.796**

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