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Testing a model of the antecedents and consequences of IT employees' trust of software development business in Thailand

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Although the research of trust in leadership has increasingly gain attention in past two decades, existing research do not provide a sufficiently clear picture of the relationships among trust in different leadership referents and its antecedents and consequences. To fill this gap, this study aim to test the relationships among different dimensions of organizational justices, which are treated as the antecedents, trust in two leadership referents (supervisor and organization), and three work-related outcomes (innovative goal commitment, organizational citizenship behaviors (OCBs) and in-role performance). Our hypotheses are tested on data collected from 157 information technology (IT) employees of software development companies in Thailand. Linear structural relations (LISREL) results revealed that procedural and distributive justices positively affect trust in organization, whereas the interactional justice positively affects trust in supervisor. The innovative goal commitment and OCBs are the proximal outcomes, while the in-role performance is the distal outcome of trust in organization. In contrast, trust in supervisor has no direct impact on all outcomes variables, but it has an indirect effect through trust in organization. Discussion and recommendation are presented.

Key words: Organizational justice, trust in leadership, innovative goal commitment, organizational citizenship behaviors, in-role performance.

INTRODUCTION

Numerous organizational management scholars claimed that an individual's trust as predictor of working attitudes and behaviors, which have influence on organizational effectiveness (Burke et al., 2007; Dirks and Ferrin, 2002). Accordingly, much of recent researches have focused on

understanding the antecedents and consequences of trust. Regarding antecedents, organizational justice is one of the prerequisites of trust that have received the most attention from researchers (Aryee et al., 2002; Hubbell and Chory-Assad, 2005). Organizational justice refers to perceptions of the fairness and evaluations regarding the appropriateness of workplace outcomes or processes (Cropanzano and Greenberg, 1997). This definition implied the existence of three types of organizational justices: distributive, procedural, and interactional justice. The equity or fairness of rewards with respect to person inputs and fairness of the procedures used in allocating rewards as the key components of distributive and procedural justice, respectively. Whereas fairness of interpersonal treatment received from authorities is the key component of interactional justice.

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Abbreviations: OCBs, Organizational citizenship behaviors; IT, Information technology; LISREL, linear structural relations; CFA, confirmatory factor analysis; AVE, average variance extracted; CFR, composite factor reliability; SEM, structural equation modeling; RMSEA, root mean square error of approximation; SRMR, standardized root mean square residual; NNFI, non-normed fit index; CFI, comparative fit index.

As noted by Hubbell and Chory-Assad (2005), the three types of justice above may relate to trust in different referents in unique ways. With regard to referents of trust, Dirks and Ferrin (2002) noticed that most studies examining trust in leadership have focused one of two different referents: the direct leader (e.g. supervisor, work group leader) or organizational leadership (e.g. executive leadership). To date, however, there has been little research directed at understanding the distinction effect of three types of justice on trust in direct leaders and in organizational leadership. Particularly, existing literature and empirical evidences also show the mixed results. According to Choi (2011), interactional justice is more strongly related to trust in employees' immediate supervisors than the other forms of organizational justice perceptions. While the work of Wong et al., (2006) shows that an interactional justice is not only strongly correlated with trust in supervisor but also strongly related to trust in organization. Some studies reveal that distributive and procedural justices are much stronger correlate with trust in organization than interactional justice (Aryee et al., 2002). In contrast some studies show that distributive justice is not correlated with either trust in supervisor or in organization (Hubbell and Chory-Assad, 2005). These mixed results suggest the need for more research to find the best conclusion.

Underlying social exchange theory, trust provide the basis for relational contracts and social exchange that encourage employees to behave in ways that promote organizational success (Konovsky and Pugh, 1994). Dirks and Skarlicki (2004) have argued that beside trust, indifferent referents might be associated with different antecedents, it also might be related to different consequences because the distinction in the roles of the different leadership referents. Based on meta-analysis, Colquitt et al. (2007) and Dirks and Ferrin (2002) consistently found that trust in direct leaders has a stronger effect on citizenship behavior and in-role performance than trust in organizational leadership, which may likely have a greater impact on the organization-outcomes such as organizational commitment. However, Colquitt et al. (2007) also noticed that there are number of studies that revealed the opposite pattern of relationship among trust and these outcomes. Hence, future research should continue to explore such differences. Consistent with our review found that some studies (Nyhan, 1999; Huang et al., 2010; Wong et al., 2006) do not support the argument of Dirks and Skarlicki (2004).

As previously argued, trust in different leadership referents show systematically different relationships with antecedents and work outcomes. However, due to the mixed results of prior studies, it is necessary for more research in order to provide a much clearer picture about this issue. Thus, the present study attempts to explore the antecedents (that is, three types of organizational justices) and consequences (that is, innovative goal commitment, organizational citizenship behaviors (OCBs),

and in-role performance) of trust (in supervisor and in organization) of employees in software development companies in Thailand. Simultaneously, in the aforementioned, our study differs from prior research by relating trust in each of two referents to the three types of justices and three variables of job-related outcomes because, past research tend to focused one of two different referents of trust and only one outcome variable (Huang et al., 2010; Ning et al., 2007; Wong et al., 2006). Therefore, this study contributes to the existing literature on trust by providing a clearer picture of the mediating process of trust, which there is still little research, have explored explicitly how trust in each of these two different referents is related to three type of organizational justice and work outcomes (Dirks and Skarlicki, 2004), particularly in Thai business context.

Theoretical background and hypotheses

Definition of trust

The concept of trust has been defined in different ways. From a different, but widely referenced within the organizational literature is Rotter's (1967) definition. Rotter defined trust as an expectancy held by an individual or a group that a word, promise, verbal or written statement of another individual or group can be relied upon. Underlying this definition, to be trustworthy, trustee must follow through and keep their word and/or promise. Several authors (Carnevale and Wechsler, 1992; Matthai, 1989; Nyhan, 1999) extend the definition of Rotter by defining trust as feeling of confidence and expectation that the person or organization will continue to act in an ethical, fair, and non-threatening way. According to Burke et al. (2007), the key three components of trust are, willingness to be vulnerable, positive expectations that interests will be protected and promoted when monitoring is not possible, and assessment of others, intention, sincerity, motivations, character, reliability, and integrity. In all of the aforementioned definitions, the present study define trust as employees' confidence and expectation in the intention and actions of a supervisor or organization that will always act in a ethical, fair, and non-threatening manners. By this definition, trust is predicted on personal experience with authority.

Luhmann (1979) has argued that an individual's degree of trust varies between their supervisors and the organization as a whole. Employees carry images of the organization based on the decisions and action of the executive group. The images of the organization as an entity are separate from those, which are formed based on the immediate contact the employee has on a daily bases with his or her supervisor (Nyhan, 1999). Thus, currently, much of the trust studies classified the type of trust based on the exact referent of trust such as subordinate, supervisor, and organization. Because of trust in

different referents might be associated with different antecedents and consequences (Dirk and Skarlicki, 2004). Hence, in this study we focus on the trust in supervisor and trust in organization. The details of the antecedents and consequences of the both type of trust are presented in the next sections.

Antecedents of trust

Organizational justice is considered as one important antecedents of trust. It refers to the employee's perception of fairness of treatment received from an organization (James, 1993). In justice literatures, organizational justice has been divided into three dimensions. They are distributive justice, procedural justice, and interactional justice. However, most of the existing studies tend to focus on the distributive and procedural justices. Distributive justice refers to the perceived fairness of the amounts of compensation employees receive, whereas procedural justice refers to the perceived fairness of the processes used to allocate resources (Folger and Konovsky, 1989). Underlying equity theory, Cropanzano and Greenberg (1997) have argued that individuals assess distributive justice by evaluating and comparing the outcome they received to a standard or rule and/or to the outcome, received by a referent, such as one's co-workers or past experiences. The distributive justice is high when an employees' ratio of outcomes (e.g. pay or promotions) to inputs (e.g. education or effort) matches these of some comparison other. While employee evaluate procedural justice base on whether or not the processes (e.g. formal rules and policies) used to arrive at the outcomes was consistently applied across people and overtime, including whether or not the authorities making the decision did not insert his or her own biases.

The present study also focuses on the interactional justice. In contrast with distributive and procedural justice, which concentrated on outcomes and process, interactional justice concerned with the role of social interactions as the base of fairness judgments (Bies and Moag, 1986). Employees evaluate interactional justice on whether or not the authorities treat them with polite and respectful manner and with belonging to the in-group members. Burke et al. (2007) argued that when employees perceive fairness in the outcomes (distributive justice) and process of allocating resources (procedural justice), they can be assured that certain behaviors will lead to certain outcomes regardless of personal opinions or biases that may be held within the organizational setting. This reduces ambiguity in the relationship between the subordinate and leadership and increases the levels of trust. The underlying notion of social exchange theory which theorizing about procedural and interactional justice, trust is a key element in the emergence and maintenance of social exchange relationships

(Konovsky, 2000). In opposite with economic exchange that occurs on a quid pro quo or calculated basis, social exchange relationships occurs based on individual trusting that the other parties to the exchange will fairly discharge their obligations in the long run (Konovsky, 2000). According to Aryee et al. (2002), an exchange partner's fair treatment (supervisor or organization) of the other (employee) references a social exchange relationship with partner. Therefore, the engagements in procedural and interactional justice promote the trustworthiness of the supervisor and organization.

Some empirical evidence has revealed that different types of organizational justice perceptions associated with employees' trust in different ways. Distributive and procedural justice is stronger associated with trust in organization rather than with trust in supervisor. On the other hand, interactional justice has influence trust in supervisor rather than in an organization (Aryee et al., 2002; Choi, 2011; Cropanzano and Prehar, 1999; Hubbell and Chory-Assad, 2005). May be because distributive and procedural justice generally are viewed as organizational acts, they are more likely to be controlled by the larger organizational system (th supervisors may not be able to deviate from an organizations evaluation criteria even if they want to). Whereas interactional justice involves perceptions related to the communication of the individual supervisor, which is likely to originate from the person (that is, the organization cannot reasonably control how sensitive or respectful the supervisor is) (Hubbell and Chory-Assad, 2005).

Consequences of trust

Organization citizenship behaviors

The concept of OCBs is first proposed by Organ and his colleagues (Bateman and Organ, 1983). Organ (1988) defined OCBs as the discretionary behavior, not directly or explicitly recognized by the formal reward system, and that in the aggregate promotes the effective functioning of the organization. This original definition of OCBs is refined in the next time by Organ and other researchers. One definition that is widely accepted by current organization researchers is that proposed by Graham (1991) and van Dyne et al. (1994). They proposed and tested a conceptualization of OCBs based on three dimensions. First, obedience refers to respect for rules and instructions, punctuality in attendance and task completion, and stewardship of organizational resources. Second, organizational loyalty refers to identification with and allegiance to an organization, demonstrated by defending the organization against threats, conducting to its good reputation, and cooperating with others to serve the interest of the whole. Finally, organization participant is defined as interest in organizational affairs full and responsible involvement in organizational governance,

demonstrated by attending no required meeting, obtaining informed opinions and new ideas with others (van Dyne et al., 1994). In this study, we measured OCBs based on these dimensions.

Several trust researchers (Dirks and Ferrin, 2002; Dirks and Skarlicski, 2004) have shown a direct relationship between trust and OCBs. However, they also suggest that OCBs tend to be associated with trust in supervisor rather than trust in organization because of the distinction in the role of the supervisor and top management. Supervisors tend to perform actions such as managing performance and day-to-day activities on the job. In contrast, top management perform more strategic functions such as setting strategic plan, allocating the resources to departments, communicating the goals of organization, and so on. According to social exchange relationship, they believe that reciprocating trust in a supervisor would tend to involve job-related outcomes such as increasing in-role performance or engaging in OCBs. Whereas trust in organization, may be associated with the organization-related outcomes, such as organizational commitment (Dirks and Ferrin, 2002; Dirks and Skarlicski, 2004). For OCBs, Dirks and Ferrin (2002) suggested that if individual feel that their supervisor has or will demonstrate care, trust is established, and they are willing to go above or beyond their job role. However, prior research revealed mixed results with regard to this association. Our review found that OCBs is stronger related to trust in supervisor rather than to trust in organization (Aryee et al., 2002; Wong et al., 2006), support to the previous argument. While meta analysis findings of Dirks and Ferrin (2002) indicated that trust in direct leader did not significantly correlated with OCBs. The study of Wong et al. (2006) show that the OCBs of employees is affected by their trust in organization in both joint venture and state-owned enterprises sample. Whereas trust in supervisor show does not influence on employees' OCBs in state-owned enterprises sample. Similarly, Huang et al. (2010) found that trust in supervisor does not affects OCBs in the managerial subordinate sample. Therefore, in this study we are testing both the effects of trust in supervisor and trust in organization on OCBs.

In-role performance

In-role performance is defined as an employee's action to fulfill the formal requirements of his or her job (William and Anderson, 1991). As Mayer and Gravin (1999) have argued, when employee believe their leader cannot be trusted, they will divert energy toward "covering their backs," which detracts from their work performance. Consistently, previous researchers have found out that if once employees have built trust in their immediate supervisors, they are more willing to accept job assignment from these supervisors and have a higher level of commitment on the quantity and quality of his or her job (Ning

et al., 2007; Tan and Tan, 2000). That is, trust in supervisor has positive influence on employees' in-role performance. However, prior studies also show that when employees have trust in organization, they are more willing to work harder and spend more time and energy in their job (Aryee et al., 2002). With the aforementioned mixed results, we examine the influence of both type of trust on in-role performance.

Innovative goal commitment

Meyer and Allen (1991) classified organizational commitment into three dimensions: affective, continuance, and normative. Affective commitment is defined as the employees' positive attachment to the organization. An employee who is affectively committed strongly identifies with the goals of the organization and desires to remain a part of organization. Continuance commitment refers to the continued membership in an organization due to awareness of the costs associated with leaving the organization (e.g. reduction in pay). Normative commitment refers to a feeling of obligation to continue employment because of the socially accepted norm. Meyer et al. (2004) recently applied this dimensional conceptualization to goal commitment. Affective goal commitment means the individual's attachment to the organizational goal. Employees who have a strong affective goal commitment will pursue a goal because they want to. In contrast, employees who have a strong continuance and normative will pursue a goal because they think about cost and they think they should or must. Regarding the antecedents of commitment, Meyer and Allen (1991) have argued that work experiences such as employee/supervisor relations direct affect affective commitment. Literature review by Meyer et al. (2002) showed that affective commitment to organization has strongest positive correlations with desirable work behaviors such as OCBs and job performance. Thus, the present study applied the concept of affective goal commitment to define innovative goal commitment, which is the outcome of trust. Innovative goal commitment is defined as the employees' positive attachment to the innovation development goals of organization.

Dirks and Ferrin (2002) provided a model proposing that having a low level of trust in leader is likely to be psychologically distressing when leader has power over important aspects of one's job, and this distress is likely to affect one's attitudes about the workplace. The implication of this idea is that trust in supervisor and trust in organization should be associated with higher levels of innovative goal commitment. Underlying social exchange theory, Yang (2005) explain that when employees believe that an organization intends to seek their interests, they are more willing to accept organizations' goals and values including a strong desire to main membership in the organization. As we presented in the previous section,

several authors (Dirks and Ferrin, 2002; Dirks and Skarlicki, 2005) proposed that organizational commitment would tend to be associated with trust in organization, rather than trust in supervisor. This proposition is confirmed by many recent studies (Aryee et al., 2002; Tan and Tan, 2001; Whitener, 2001). Nevertheless, Nyhans' (1999) study has been found that trust in supervisor is a significantly stronger correlate of organizational commitment. This result was unexpected. Therefore, we are testing the relationships between both type of trust and innovative goal commitment.

The mediating role of trust

Base on meta-analysis finding, Dirk and Ferrin (2002) advocate conceiving trust as a distinct construct and mediates the relationship between leader behaviors (that is, organizational justice) and followers' responses to those behaviors (that is, OCBs, goal commitment, and performance). That is, organizational justices as one important source of trust which is the basis of relational exchange between leaders and employees. The emergent trust will encourage employees more to behave in the positive ways. Consistent with our review presented in the prior sections, Dirk and Ferrin also proposed that the different leadership referents of trust (supervisor and organization) would show systematically different relationships with antecedents and work outcomes. Trust in supervisor tends to mediate the relationship between interactional justice and the employee work-related behaviors (e.g. OCBs and in-role performance). While trust in organization, tends to mediate the relationship between distributive and procedural justices and organization-referenced work outcomes (e.g. organizational goal commitment). Our review found that several studies (Aryee et al., 2002; Wong et al., 2006) support to these arguments. In addition, Wong et al. (2006) have argued that in the workplace, supervisors are responsible for directing the daily work of their subordinate, implementing the organization's policies, and cooperating with their subordinates to achieve the organization's goals. It is possibility that subordinates' trust in supervisor may have a positive effect on their trust in organization. Consistent with Whitener (1997) has stated that supervisors build relational contacts with employees and fulfill their perceptions of an organization's obligation, thus, employee's trust in organization will be greater if they also trust their supervisors. From all the aforementioned theoretical view and evidences presented, the following hypotheses were tested:

- H₁: Trust in organization mediated the relationship between distributive justice and OCBs.
 H₂: Trust in organization mediated the relationship between procedural justice and OCBs.
 H₃: Trust in supervisor mediated the relationship between

interactional justice and OCBs.

- H₄: Trust in organization mediated the relationship between distributive justice and innovative goal commitment.
 H₅: trust in organization mediated the relationship between procedural justice and innovative goal commitment.
 H₆: trust in supervisor mediated the relationship between interactional justice and innovative goal commitment.
 H₇: trust in organization mediated the relationship between distributive justice and in-role performance
 H₈: trust in organization mediated the relationship between procedural justice and in-role performance.
 H₉: trust in supervisor mediated the relationship between interactional justice and in-role performance.
 H₁₀: trust in supervisor positively affects trust in organization.

MATERIALS AND METHODS

The sample of this study consisted of 157 information technology (IT) employees of software development companies in Thailand. The 385 questionnaires were distributed and 157 completed questionnaires were returned, a response rate of about 41%. The majority of the participants (57.3%) were male. 75% of the sample was less than or equal the age of 30. 71% of the respondents indicated a bachelor's degree as their highest level of educational achievement. 54% having less than or equal 5 years of organizational tenure and 35% having 6 to 10 years of organizational tenure. 53% having salary less than \$645 per month and 22% having salary \$645 to \$968 per month.

Prior to testing the model of the antecedents and consequences of employees' trust, we first evaluated the psychometric properties of the constructs developed for our study. To assess the unidimensionality, convergent, and discriminant validities, we conducted confirmatory factor analysis (CFA). If measurement model does fit the data acceptably, all factor loadings are well above 0.70, and the average variance extracted (AVE) has recommended value of 0.50 or higher, these provide evidence for convergent validity (Segars, 1997). Unidimensionality was assessed through examination of modification indices and the standardized residual matrix. If modification indices do not suggest that chi-square statistics can be reduced greater than 5.0, evidence of cross-loading items, and low standardized residual value (that is, less than 3.50) between items and other indicators, these seem to suggest that there is only one construct underlying a set of items. Our examination shows that all measurement models do fit the data perfectly and no residual value suggesting all constructs exhibits properties of both convergent validity and unidimensionality. The detailed of standardized factor loadings and AVE values based on CFA are presented in the section below.

Discriminant validity among constructs was evaluated by comparing AVE value relative to construct correlation. Our examinations show that all possible pairs of constructs passed this test, suggesting the discriminant validity of the constructs in our study. The correlations range from 0.14 to 0.78. The squared correlations range from 0.02-0.61. The Cronbach's alpha coefficients, composite factor reliability (CFR > 0.70), and AVE (>0.50) were used to assess construct reliability.

Trust in supervisor

We selected 5 items from the work of Posakoff et al. (1990), 3 items from the work of McAllister (1995), and 2 items from the work of Yang (2005) to construct a scale to determine trust in supervisor (items used to measure the main constructs are presented in

Appendix). All items in the measure were rated from (1) “nearly zero” to (10) “nearly 100%” confidence and trust in my supervisor. Given the small sample size relative to the measurement items, we adopted partial disaggregation procedures recommended by Bagozzi and Heatherton (1994) to reduce the number of items. 10 items were randomly grouped into three components (indicators). For measurement model of this construct, scores for each indicator were then computed as the mean of the scores on the items that constituted each indicator. Based on CFA, the scale shown high validity (factor loading ranged from 0.90 to 1.00, $p < 0.05$) and reliability ($\alpha = 0.93$, $CFR = 0.95$, and $AVE = 0.82$).

Trust in organization

Our literature review found that many authors consider and measure trust in top management and trust in organization to be equivalent (Wong et al., 2006; Yang, 2005). Additionally, scale of trust in supervisor can be adapted to construct a scale of trust in organization (Vest et al., 2000). Therefore, we asked respondents to evaluate how confident and trust in their top management and organization can determine trust in organization. The measure were rated from (1) “nearly zero” to (10) “nearly 100%” confidence and trust in organization. Likewise, the scale of trust in supervisor, we reduced the number of items (10 items) by the partial disaggregation method into three indicators. The CFA results showed that all three indicators had factor loading more than 0.70 (ranged from 0.87 to 1.00, $p < 0.05$) and high reliability ($\alpha = 0.95$, $CFR = 0.85$, and $AVE = 0.87$).

Innovative goal commitment

We selected 4 items from the work of Meyer and Allen (1997) to construct the scale to determine innovative goal commitment. Each individual were used as four indicators of construct. All items in the measure were rated from (1) “not at all true” to (5) “very true”. CFA results revealed that the scale had relative high validity (factor loading ranged from 0.62 to 0.86, $p < 0.05$) and high reliability ($\alpha = 0.82$, $CFR = 0.81$, and $AVE = 0.53$).

Organization citizenship behavior

We assessed OCBs by using a scale developed by van Dyne et al. (1994). The scale consists of 12 items designed to reflect three dimensions: loyalty, obedience, and participant. However, in this study we measured OCBs construct with only two dimensions (indicators). Because the exploratory factor analysis result show that there is only two dimensions underlying a set of 12 items. CFA results show that two dimensions model fit the data well more than three dimensions model. All items in the measure were rated from (1) “not at all true” to (5) “very true”. Based on CFA, the two indicators had factor loading 1 and 0.95, $p < 0.05$. The scale show high reliability ($\alpha = 0.97$, $CFR = 0.79$, and $AVE = 0.95$). Additionally, because there are some concern associated with using a self-reported OCBs measure such as employees tend to over report their OCBs under the influence of social desirability bias, resulting in a restriction of range in this variable. To validate our OCBs measure, we also asked supervisors to judge employees’ OCBs using an identical measure. Supervisor rating of OCBs correlated significantly with employees’ self-reporting, $r = 0.654$, $p < 0.01$. This strengthens our confidence that employees’ self-rating of OCBs is rooted in reality.

In-role performance

We selected 5 items from the work of Williams and Anderson

(1991) to construct a scale to determine in-role performance. The rating scale ranged from from (1) “not at all true” to (5) “very true”. 5 items were randomly grouped into two indicators. CFA results show that the scale had relative high validity (factor loading ranged from 0.78 to 1.00, $p < 0.05$) and high reliability ($\alpha = 0.89$, $CFR = 0.89$, and $AVE = 0.80$). To evaluate our in-role performance measure, we asked supervisors to judge employees’ in-role performance using an identical measure. Supervisor rating of in-role performance correlated significantly with employees’ self-reporting, $r = 0.601$, $p < 0.01$. This strengthens our confidence that employees’ self-rating of in-role performance is rooted in reality.

Distributive justice

We selected 3 items that were developed by Price and Mueller (1986) to measure distributive justice. Each individual item was used as three indicators of construct. All items in the measure were rated from (1) “not at all true” to (7) “very true”. CFA indicated that the scale had high validity (factor loading ranged from 0.86 to 0.93, $p < 0.05$) and high reliability ($\alpha = 0.92$, $CFR = 0.82$, and $AVE = 0.80$).

Procedural justice

We selected 3 items that were developed by Niehoff and Moorman (1993) to measure procedural justice. Each individual item was used as three indicators of construct. All items in the measure were rated from (1) “not at all true” to (7) “very true”. CFA indicated that the scale had high validity (factor loading ranged from 0.80 to 0.84, $p < 0.05$) and high reliability ($\alpha = 0.86$, $CFR = 0.76$, and $AVE = 0.68$).

Interactional justice

We selected 3 items that were developed by Niehoff and Moorman (1993) to measure interactional justice. Each individual item was used as three indicators of construct. All items in the measure were rated from (1) “not at all true” to (7) “very true”. CFA indicated that the scale had high validity (factor loading ranged from 0.83 to 0.90, $p < 0.05$) and high reliability ($\alpha = 0.91$, $CFR = 0.80$, and $AVE = 0.76$).

RESULTS

Table 1 presents the descriptive statistics and zero-order correlations of the latent variables studies. As show in that table, distributive justice, procedural justice, interactional justice, trust in organization, and trust in supervisor were related to the outcome variables in the expected direction.

To test the hypothesized model, we performed structural equation modeling (SEM) to estimate direct and indirect effects by using linear structural relations (LISREL) program. SEM allowed for the analysis of direct and indirect effects among multiple constructs simultaneously. It also could correct estimates of measurement errors. These errors introduce bias in regression coefficients (Jaccard and Wan, 1996). Results of overall fit indices of the hypothesized model revealed a poor fit to the data ($\chi^2 = 722.52$, $p < .01$, χ^2/df ratio = 3.30, root mean square error of approximation (RMSEA) = 0.121, standardized root mean square residual (SRMR) = 0.095, comparative fit index (CFI) = 0.93, non-normed fit

Table 1. Descriptive statistics and zero-order correlation matrix for latent variables.

	Mean	SD	1	2	3	4	5	6	7
1.Trust in supervisor	6.68	1.84							
2.Trust in organization	6.58	1.76	0.76*						
3.Organization citizenship behavior	3.60	0.59	0.50*	0.66*					
4.In-role performance	3.59	0.56	0.21*	0.27*	0.41*				
5.Innovative goal commitment	3.63	0.80	0.45*	0.59*	0.39*	0.16*			
6.Distributive justice	3.81	1.09	0.39*	0.51*	0.34*	0.14*	0.30*		
7.Procedural justice	4.11	1.20	0.65*	0.74*	0.49*	0.20*	0.44*	0.49*	
8.Interactional justice	4.50	1.04	0.78*	0.74*	0.49*	0.20*	0.44*	0.50*	0.84*

index (NNFI) = 0.91). When we look at the standardized parameter estimates, the findings show that trust in organization was not a significantly and directly affects an in-role performance. Thus, the mediating H_7 and H_8 were not supported. Trust in supervisor was not a significantly and directly affects all outcomes variables, thus mediating H_3 , H_6 , and H_9 were not supported. All of the modification indices for the beta pathways between major constructs were large suggesting that adding additional paths would significantly improve the fit. Based on these results and theoretical reasonable, we decided modifying the hypothesized model by deleting all non significant paths and added the paths from distributive justice and innovative goal commitment to OCBs, and from OCBs to in-role performance. In addition, twenty-two paths of error co-variance among indicators also were added in the modified model.

Figure 1 shows the standardized structural coefficients of modified model, the overall fit indices show that the modified model provided a better fit relative to the hypothesized model (Chi-square= 333.09, $p < .01$, chi-square/df ratio= 1.68, RMSEA= 0.066, SRMR= 0.062, CFI= 0.98, NNFI= 0.97). Table 2 presents the standardized direct and indirect effects of predictors in the modified model. Results show that distributive justice and procedural justice have a significant direct effect on the trust in organization and interactional justice has a significant direct effect on the trust in supervisor. This pattern of results satisfied the first condition of mediation (Baron and Kenny, 1986). Trust in organization has a significant direct effect on OCBs and innovative goal commitment and trust in supervisor has a significant direct effect on the trust in organization, thus, met for the second condition of mediation. For the third condition, results show that the direct effect of procedural justice on OCBs, procedural justice and distributive justice on innovative goal commitment and interactional justice on trust in organization drops to zero. These results suggest that the trust in organization fully mediate the effect of procedural justice on OCBs and on innovative goal commitment, and the effect of distributive justice on innovative goal commitment providing support for H_2 , H_4 , and H_5 respectively. Trust in supervisor fully mediates the effect of

interactional justice on trust in organization, thus supports H_{10} . While results show a significant direct effect of distributive justice on OCBs suggesting that trust in organization partially mediated, which supports H_1 .

Considering the magnitudes of total effects indicates that interactional justice (beta= 0.78, $p < 0.01$) has the greatest influence on trust in supervisor (beta= 0.47, $p < 0.01$) which has the greatest influence on trust in organization. OCBs (beta= 0.52, $p < 0.01$) and innovative goal commitment are the greatest influenced by trust in organization (beta= 0.58, $p < 0.01$). OCBs (beta= 0.41, $p < 0.01$) has the greatest influence on in-role performance.

DISCUSSION AND RECOMMENDATION

The purpose of this research was to test the antecedents and consequences of employees' trust of software development companies in Thailand. Regarding the antecedents, our finding show that distributive and procedural justices are positively and directly affect trust in organization. Interactional justice is positively and directly affects trust in supervisor. These results consistent with prior studies (Aryee et al., 2002; Hubbell and Chory-Assad, 2005; Wong et al., 2006) and several scholars (Dirks and Ferrin, 2002; Dirks and Skarlicki, 2004) proposed that different types of justice might associate with trust in organization and trust in supervisor in unique ways. Because distributive and procedural justices reflect employees' assessments of the organization's thinking and values, then it is more likely to be a predictor of employees' reaction toward the organization such as trust in organization. Whereas interactional justice reflects employees' assessment of the specific supervisor (that is, communication and interpersonal treatment), then it is more likely to be a stronger predictor of trust in supervisor than they will of organization trust (Hubbell and Chory-Assad, 2005). For the consequences of trust, our empirical results show that trust in organization was positively and directly affects innovative goal commitment and OCBs, but indirectly affects in-role performance through OCBs. These results were not consistent with our expectations and the past evidences (Aryee et al., 2002;

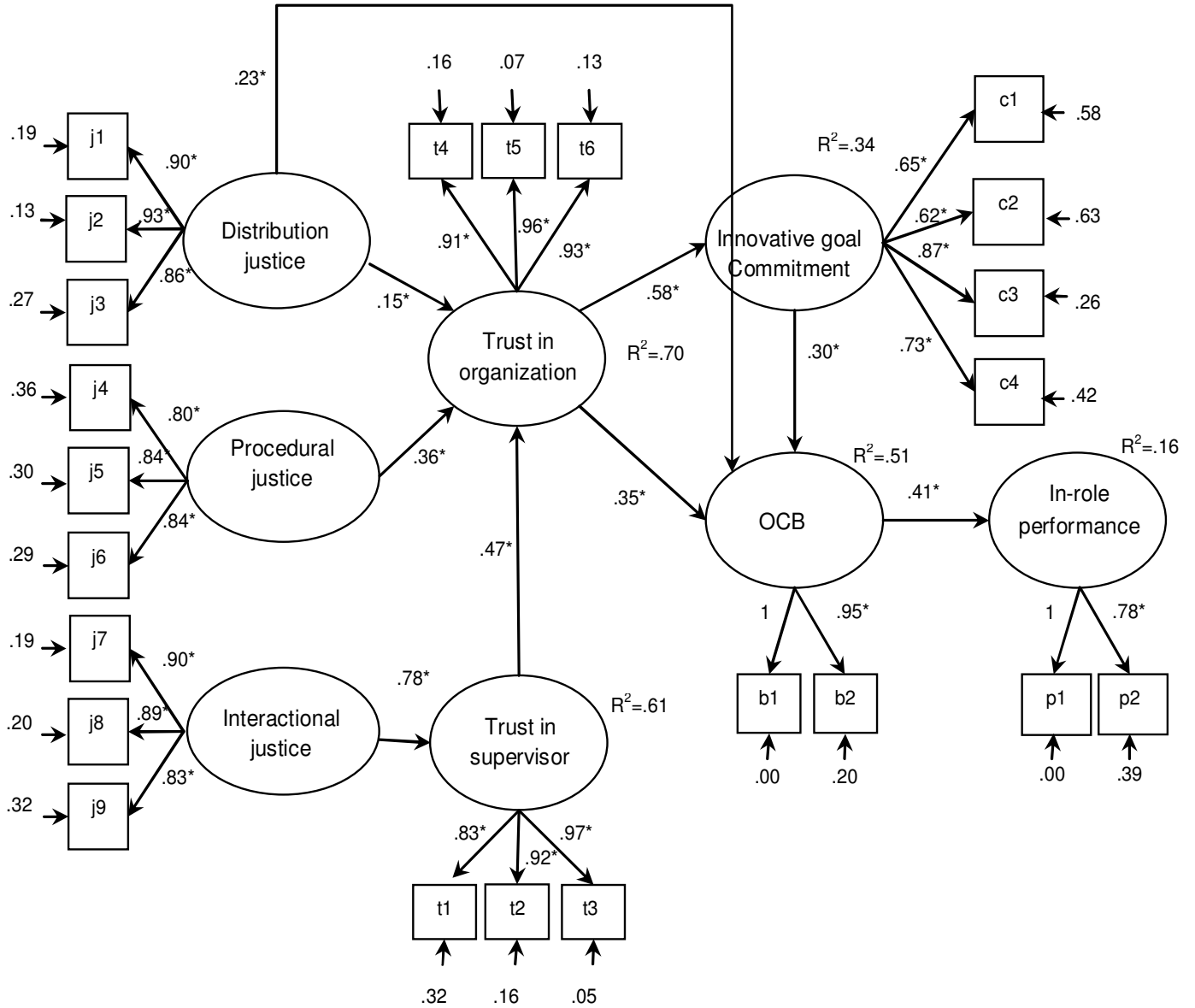


Figure 1. The standardized structural coefficients of modified model.

Table 2. Standardized direct and indirect effects of predictor on outcome variables.

Predictor variable	Outcome variable									
	TRL		TRO		OCB		IGC		IRP	
	DE	IE	DE	IE	DE	IE	DE	IE	DE	IE
TRL	-	-	.47*	-	-	.25*	-	.27*	-	.10*
TRO	-	-	-	-	.35*	.19*	.58*	-	-	.21*
OCB	-	-	-	-	-	-	-	-	.41*	-
IGC	-	-	-	-	.30*	-	-	-	-	.12*
DJ	-	-	.15*	-	.23*	.08*	-	.09*	-	.13*
PJ	-	-	.36*	-	-	.19*	-	.21*	-	.08*
IJ	.78*	-	-	.36*	-	.19*	-	.21*	-	.08*

TRL, Trust in supervisor; TRO, trust in organization; OCB, organization citizenship behavior; IGC, innovative goal commitment; DJ, distributive justice; PJ, procedural justice; IJ, interactional justice; IRP, in-role performance.

Konovsky and Pugh, 1994). However, our results support the integrative model of Burke et al. (2007). Based on a multilevel review and integration, Burke et al. (2007) provided a model proposing that perceived distributive and procedural justices lead to reduce ambiguity in the relationship between the subordinate and leadership and increases the perception of trust. When trust in organization is established, employees are more willing to go above and beyond the required task that is naturally engage in OCBs. All of OCBs is proximal outcomes that will assist in removing barrier to employees' performance, which is a distal outcome. Therefore, increased OCBs are likely to improve the quality and quantity of the employee's in-role performance.

In addition, results also revealed that innovative goal commitment mediated the trust in organization OCBs links. Consistent with previous empirical evidence of Rifai (2005) found that employee with strong affective commitment will demonstrate a higher OCBs. Similarly, Choi (2011) has argued that when employee perceive unfairness in the outcomes received and the process of allocating resources, they are likely to develop negative attitudinal reactions such as lower trust and decreased commitment toward the organization and act against the organization. Base on the same logic, when employees believe that an organization intends to decision and treat them in a fair manner, they are likely to develop trust in organization, which in turn makes them more willing to accept organizations' innovation development goals. Consequently, the employee's OCBs is encouraged.

Contrary to our expectations, trust in supervisor was not directly affects all work-related outcome. The possible explanation may be that the consequences of trust in supervisor may vary according to organizational context such as firm size (Wong et al., 2006). In Thai context, the majority of software development companies are typically small organization (having less than 50 employees) (Karun and Pilaipan, 2011). With small size and simple organization structure, it is possibility that employees may view their supervisor as belong to the management team and as being the representatives of the organization. Underlying this context, trust in supervisor may have the largest correlations with trust in organization, rather than attitudinal and performance outcomes. As our result, trust in supervisor as the best predictor of trust in organization and mediated the relationship between interactional justice and trust in organization. Consistent with the work of Wong et al. (2006) and Whitener (1997) has explained that when supervisors build relational contacts with employees and fulfill their perceptions of an organization's obligations, trust in supervisor that is established may in turn lead to increase trust in organization.

As a results the aforementioned, present study contribute to the trust literatures by filling the gap and adding the understanding of the antecedents and consequences of employees' trust, particularly in software development companies and in Thai context. Because a shortcoming

of existing trust research is the tendency to focus on just one type of trust (in supervisor or in organization) and testing the hypothesis based on trust is directly affects all outcomes variables in the model. As noted by trust scholars (Burke et al., 2007; Dirks and Ferrin, 2002), the consequences of trust can be divided into two groups based on the theoretical view and magnitude of correlation: proximal and distal outcomes. Organizational commitment and OCBs are classified as proximal outcomes that are likely to be stronger affected by trust, which is an identical attitudinal variables, whereas in-role performance is classified as distal outcomes. Because it is usually a function of numerous other contextual determinants and constrained by individuals' abilities, hence the relationship is likely to be smaller. Their arguments reflect the complex causal relationship between trust and its outcomes. In order to validate the results of this study and scholars' claims that was previously cited. Future research should examine the sequence of path from both type of trust to each of three consequences in other industry contexts.

From a practical perspective, the findings support the notions of trust as the factor that positively affects the work-related outcomes including employees' innovative goal commitment, OCBs, and in-role performance. Distributive and procedural justices were the important antecedents of trust in organization. While interactional justice was the important antecedent of trust in supervisor, which in turn positively affect trust in organization. According to Folger et al. (1992), procedural justice can be established by organization present the three elements in performance appraisal including adequate notices, fair hearing, and judgment based on evidence. Distributive justice perception can developed through effective organizational communication regarding pay differentials and pay levels to all employees. In order to building and maintaining trust in supervisor, organization should train supervisors in the fair enactment that impact trust. As Dirks and Skarlicki (2004) have recommended, five types of behavior should train supervisors including behavioral consistency, behavioral integrity, participative decision-making, communication, and demonstrating concern.

Although we have achieved some useful results, we never forget about important limitation of this study. First, this study employed a cross-sectional design and tested hypothesis in which we assumed a causal relationships based on the past research and conceptual literature. In order to confirm a causal relationship among all constructs in this research, an experimental study or longitudinal study in the same and other samples needed to replicate. Nevertheless, such studies are extremely costly and timely to implementation. Second, another limitation of the present analysis is its relatively small sample size ($n=157$) and the resultant lack of statistical power to detect any true effects. The small sample size also limited the ability to generalize the findings, and interpretation of the study results was done within the context of this

limitation.

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APPENDIX

Trust in supervisor and organization

I have faith in my supervisor (top management) because I feel s(he) would make sacrifices for me if I were in need.
 I have complete faith in the integrity of my supervisor (top management).
 I feel a strong loyalty to my supervisor (top management).
 If I shared my problems with my supervisor (top management), I know s(he) would respond with care.
 I would support my supervisor (top management) in almost any emergency.
 I feel quite confident that my supervisor (top management) will always try to treat me fairly.
 My supervisor (top management) would never try to gain an advantage by deceiving subordinate.
 I am confident in my supervisor (top management) because s(he) approaches work with professionalism.
 Given my supervisor's (top management) track record, I see no reason to doubt his/her competence.
 When my supervisor (top management) tells me something, I can rely on what s(he) tells me.

Distributive justice

I am fairly paid or rewarded considering my job responsibilities.
 I am fairly paid or rewarded considering the stresses and strains of my job.
 I am fairly paid or rewarded considering the work schedule of my job.

Procedural justice

My organization has procedures designed to provide opportunities to appeal or challenge a decision.
 My organization has procedure designed to allow for requests for clarification or additional information about a decision.
 Job decisions are made by my organization in unbiased manner.

Interactional justice

When decisions are made about my job, my supervisor treats me with kindness and consideration.
 When decisions are made about my job, my supervisor shows concern for my rights as an employee.
 When decisions are made about my job, my supervisor treats me with respect and dignity.

OCB

This employee represents organization favorably to outsiders.
 This employee tells outsiders this is a good place to work.
 This employee defends organization when other employees criticize it.
 This employee actively promotes organization's products and services.
 This employee rarely waste time while at work.
 This employee produce as much as s(he) capable of at all times.
 This employee always comes to work on time.
 Regardless of circumstances, this employee produces high-quality work.
 This employee share ideas for new projects or improvement.
 This employee frequently makes creative suggestions to co-workers.
 This employee use professional judgment to assess right/wrong for organization.
 This employee pursues additional training to improve his/her job performance.

Task performance

This employee's quantity of work is higher than average.
 This employee strives for higher quality work than required.
 This employee adequately completes assigned duties.
 This employee fulfills the responsibilities specified in his or her job description.
 This employee performs the tasks that are expected as part of the job.

Innovative goal commitment

I would be very happy to spend the time with IT innovation development.
 I enjoy discussing my IT new ideas with other people.
 I really feel as if this organization's IT innovation problems are my own.
 I really feel that the IT innovation development of company is my duty.