The Need of Leader–Subordinate Reciprocal Dyadic Trust to Build the Subordinate’s Trust in the Organization: The Case of Korean Air Pilots

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This article examines two-way trust (leader’s trust in subordinate and subordinate’s trust in his or her leader) in the context of the leader–subordinate dyad, and the relationship between the subordinate’s perception of this two-way trust and the subordinate’s trust in the organization. Based on a survey with a sample of 182 Korean Air pilots, the results show that a perceived leader’s trust in a subordinate is positively related to the subordinate’s trust in that leader, and that a subordinate’s trust in his or her leader mediates the relationship between the leader’s trust in subordinate and the subordinate’s trust in the organization. A summary of the contributions and implications of this research are discussed, as are suggestions for future research.

It has been argued that trust within an organization can reduce transaction costs, increase spontaneous sociability among organizational members, and facilitate appropriate forms of deference to organizational authorities (Kramer, 1999). Trust within an organization is thus an important resource that can contribute to establishing and sustaining competitive advantages (Alvarez, Barney, & Bosse, 2003). However, in view of the conceptual complexity of the notion of trust and the multidimensional nature of organizational relationships, building organizational trust is not an easy task. Trust is basically a psychological state that develops in the interdependent relationship between a trustor and a specific trustee (Mayer, Davis, & Schoorman, 1995; Rousseau, Sitkin, Burt, & Camerer, 1998).

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Because any of the entities associated with an organization (e.g., individual persons, groups of persons, or the organization as a whole) can be a trustor, a trustee, or both (Hosmer, 1995), trusting relationships are not confined to only the individual level, but can be viewed in light of multilevel or cross-level perspectives as well (Rousseau et al., 1998; Schoorman, Mayer, & Davis, 2007). That is, trust can be established between any two of those entities in such diverse forms as person-to-person, person-to-group, person-to-organization, group-to-group, group-to-organization, and organization-to-organization relationships. Building trust within an organization is therefore a managerial issue that requires the identification of a specific dyad (Mayer et al., 1995).

This study focuses on a specific dyad of two-way trust (a leader’s trust in a subordinate and the subordinate’s trust in the leader) as a determinant of the subordinate’s trust in the organization as a whole. Although trust in leader–subordinate relationships has been studied by many researchers, much less attention has been paid to the question of a connection between trust in leader–subordinate relationships and trust in organization–member relationships. The established models of interpersonal trust fundamentally assume that one party’s trust in another party reciprocally reinforces the latter’s trust in the former, and some studies showed the reciprocity in trust (Serva, Fuller, & Mayer, 2005; Yakovleva, Reilly, & Werko, 2010). However, those studies addressed the reciprocity of trust in light of relationships of only co-workers or interdependent teams. To date, despite significant research into the question of a subordinate’s trust in a leader, almost no attention has been paid to the reciprocity of trust in leader–subordinate dyads.

With social exchange theory and the norm of reciprocity frameworks, this study addresses the following research questions: (a) whether a subordinate develops greater trust in his or her leader as he or she perceives greater trust in him or her from the leader; (b) whether a subordinate develops greater trust in his or her organization as he or she develops greater trust in the leader or perceives greater trust from the leader, based on the perspective that subordinates think of leaders as representatives of the organization as a whole (Eisenberger, Huntington, Hutchison, & Sowa, 1986; Eisenberger, Stinglhamber, Vandenberghe, Sucharski, & Rhoades, 2002; Levinson, 1965); and (c) whether the subordinate’s trust in his or her leader mediates the relationship between the leader’s trust in the subordinates and the subordinate’s trust in the organization.

THEORETICAL BACKGROUND AND HYPOTHESES

Definition of Trust

Hosmer (1995) defined the concept of trust as “the optimistic expectation by one person, group, or firm of the behavior of another person, group, or firm” (p. 392).
But this is only one of many definitions. Researchers from a variety of disciplines have defined trust in various ways in accordance with the terminology of their own disciplines (Mayer et al., 1995). However, according to Rousseau et al. (1998), two common factors can be discerned in most of these definitions of the concept: (a) confident expectations, and (b) a willingness to be vulnerable. Moreover, two preconditions for trust can also be discerned in most discussions of the concept: (a) interdependence, and (b) relational risk between the trustor and trustee.

The constructs of trustor and trustee have also been operationally defined in various ways. Some researchers have operationalized the constructs in terms of entities above the individual level. In their studies, trustor, trustee, or both were defined in terms of a group (Costa, 2003; Huff & Kelley, 2003; Jarvenpaa, Knoll, & Leidner, 1998; Mayer & Davis, 1999) or in terms of an organization (Das & Teng, 1998; Walgenbach, 2001). In addition, Cummings and Bromiley (1996) developed a so-called organizational trust inventory, which purported to measure trust between individuals, between groups, and between organizations.

Any given individual within an organization will form various relationships with other individuals, with groups, and with the organization as a whole, and each of these relationships can influence the attitudes, behaviors, and performance of the individual concerned. The multidimensional nature of organizational relationships leads to the reasoning that building trust within an organization involves managing all these relationships.

Against this background, this study adopts a definition of trust that is largely derived from Hosmer (1995) and Rousseau et al. (1998). For the purposes of this study, trust is therefore generically defined as follows: Trust is a psychological state of one entity (person, group, or organization) involving a willingness to accept vulnerability based on positive expectations of the intentions or behavior of another entity (person, group, or organization).

Various terms have been used in the literature to describe the general concept of trust within organizations. For example, some authors have referred to organizational trust (Cummings & Bromiley, 1996; Huff & Kelley, 2003; Mayer et al., 1995), whereas others have referred to trust in organizations (Creed & Miles, 1996; Elangovan & Shapiro, 1998; Kramer, 1999), or trust within organizations (Lewicki, McAllister, & Bies, 1998). In addition, some authors have attempted to describe an overall trust climate within an organization by using such terms as internal trust of the organization (Huff & Kelley, 2003) or interpersonal trust at work (Cook & Wall, 1980). However, many of these terms can cause confusion because they often fail to identify the trustor and the trustee with any precision; for example, the term organizational trust has also been used to indicate the trust felt by members toward their organizations (Gilbert & Tang, 1998).

For the purposes of this study, the term trust (or trust in organizations) is taken to connote trust in all possible relationships within organizations generally,
whereas the term *member's trust in the organization* (or *subordinate's trust in the organization*) is taken to refer to the trust felt by members toward their organizations specifically.

**Dyadic Trust**

Current literature invokes trustworthiness and propensity to trust as antecedents of trust (Mayer et al., 1995). Trustworthiness is characteristic of the trustee and propensity to trust is that of the trustor. In one sense, such a frame seems pretty comprehensive because it deals with both entities simultaneously. However, we contend that, in addition to the trait of trustor and trustee, the attributes embedded in the dyadic relationship should be considered together because the nature of the link between the two entities (trustor and trustee) can have an independent and unique influence on the two actors (Granovetter, 1985).

Specifically, we attended to the reciprocity of trust in dyadic relations. If an actor trusts a partner, the trusting behavior itself can alter the relationship dramatically. In such cases, trustworthiness and propensity to trust do not change. It is the dyadic relationship that was changed. We posit that such a change in characteristics of a relationship can lead to a change in the trust level of the two entities. From this perspective, we look into the reciprocal effects of trust on the basis of the dyad.

**Benefits of Member's Trust in the Organization**

Kramer (1999) described three major benefits that accrue when trust exists within organizations. First, trust can reduce transaction costs by operating as a social heuristic that actors can utilize in making decisions in various dilemmas of choice (Allison & Messick, 1990). In a similar vein, Bradach and Eccles (1989) considered trust to be a general control mechanism that has a positive effect on all transactions and relationships.

Second, trust can engender spontaneous sociability among members of a community because it works as a form of social capital (Fukuyama, 1995). The term *spontaneous sociability* refers to cooperative, altruistic, and extra-role behaviors (Pew Research Center for the People and the Press, 1996). These behaviors include (a) contributing time and attention for the achievement of collective goals (Murnighan, Kim, & Metzger, 1994; Olson, 1965); (b) sharing useful information with other organizational members (Bonacich & Schneider, 1992); and (c) using valuable (but limited) organizational resources with a strong sense of responsibility (Messick et al., 1983; Tyler & Degoe, 1996a).

Third, trust can facilitate so-called voluntary deference within hierarchical relationships in an organization (Kramer, 1999). The term *voluntary deference* refers to the individual’s willingness to comply with directives and regulations
from the various hierarchical relationships that exist within organizations (e.g., leader–follower, manager–subordinate, employer–employee, and organization–member). If actors in the upper level of such hierarchical relationships are repeatedly required to explain and justify their actions to those in the lower level, management productivity will be seriously impaired (Tyler & Degoey, 1996b). The existence of voluntary deference in hierarchical relationships minimizes this problem.

In summary, members’ trust in their organization can reduce transaction costs within the organization, enhance spontaneous sociability among members, and promote their voluntary deference to organizational authorities.

Hypotheses

Many researchers have explored the phenomenon of trust in the leader–subordinate dyad (Ambrose & Schminke, 2003; Barnes, 1981; Bijlsma & van de Bunt, 2003; Boss, 1978; Brower, Schoorman, & Tan, 2000; Butler, 1983, 1986; Dirks, 2000; Dirks & Ferrin, 2002; Driscoll, 1978; Gillespie & Mann, 2004; Graen & Scandura, 1987; Korsgaard, Schweiger, & Sapienza, 1995; Lagace, 1991; Robinson, 1996; Sgro, Worchel, Pence, & Orban, 1980; Whitener, Brodt, Korsgaard, & Werner, 1998; Zand, 1972). The vast majority of these studies have focused on the subordinate’s trust in the leader, whereas few have addressed the leader’s trust in the subordinate. The studies that focus on a member’s trust in an organization or on the influence of the leader–subordinate relationship on the subordinate’s trust in the organization have been scarce either. This study tries to fill these deficiencies by proposing that two-way trust in the leader–subordinate dyad is a determinant of a subordinate’s trust in the organization.

Many studies on various forms of exchange in organizations have been based on social-exchange theory (Blau, 1964) and the norm of reciprocity (Gouldner, 1960). These two conceptual frameworks are also useful in understanding the phenomenon of trust in organizations. With regard to the first, a person in a social-exchange relationship voluntarily provides the other person with benefits on the expectation of a future return, even though he or she might not know when (and in what form) this return of benefit will occur (Blau, 1964). The exchanged benefits can be something beyond plain material or economic properties (Cropanzano & Mitchell, 2005). Foa and Foa’s (1974, 1980) resource theory presents six types of resources in exchange: love, status, information, money, goods, and services. Foa and Foa (1974, 1980) subdivided exchangeable resources into two forms: economic and socioemotional outcomes. In this vein, trust can be considered a possible socioemotional resource to be exchanged in social contexts. With regard to the second, the norm of reciprocity presupposes two assumptions that were expressed by Gouldner (1960) in the following terms: “people should help those who have helped them, and people should not injure those who have helped them.”
As mentioned before, trust consists of one’s willingness to be vulnerable based on the positive expectation of the good intention or helpful behaviors of another entity. In many cases, being vulnerable includes giving away valuable resources with no or relatively low cost. In this regard, being trusted can be interpreted as being helped or at least having good chances to be helped by a trustor in the future. According to the norm of reciprocity, it is highly likely that a trustee will try to reciprocate trust that was given by a trustor. Taking these two frameworks (social-exchange theory and the norm of reciprocity) together, one can notice that the former presents the reason why an actor takes initiatives in providing a favor (trust, in this case) and that the latter describes the reason why people tend to return that favor.

Beyond the relationship with the leader, every member of an organization can be said to maintain an exchange relationship with the organization (perceived as a substantial entity; Rousseau, 1990; Shore & Tetrick, 1994; Wayne, Shore, & Liden, 1997). Most of this exchange process between organization and member is executed through the leader–subordinate exchange process. The organizational activities that influence the organization’s members are composed of myriad individual activities and cultural factors (norms, values, structures)—most of which are transmitted to organizational members via the members’ leader. In other words, the leader might represent the organization to subordinates (Eisenberger et al., 1986; Eisenberger et al., 2002; Levinson, 1965), and subordinates can perceive their leader as a critical part of the organization (Wayne et al., 1997; Whitener et al., 1998).

It can thus be contended that subordinates identify their leader with the organization and that two-way trust within the leader–subordinate dyad is therefore likely to influence the subordinate’s trust in the organization. And the very two-way trust within the leader–subordinate dyad can be viewed through social-exchange theory and the norm of reciprocity. These can be formulated in formal hypotheses as proposed next.

Leader’s trust in subordinate and subordinate’s trust in the organization. According to Whitener et al. (1998), middle managers within organizations are typically entrusted with the responsibility of improving the quality of social-exchange relationships with subordinates. In this regard, Brower et al. (2000) argued that the core of such social-exchange relationships is the leader’s trust in his or her subordinates. If a leader trusts subordinates, the leader is more likely to take proactive risks in relationships with those subordinates (Mayer et al., 1995; Serva et al., 2005)—thus causing subordinates to perceive that their leader places greater trust in them (Serva et al., 2005). According to the norm of reciprocity, when a subordinate perceives a leader’s trust in the subordinate, the subordinate will reciprocate this trust from his or her leader by increasing
his or her level of trust in the organization (which is represented by the leader),
given that trust can constitute a socioemotional outcome that can be socially
exchanged.

On the basis of the preceding discussion, the following hypothesis is proposed
with regard to members’ trust in the organization and the first aspect of the two-
way relationship of trust in the leader–subordinate dyad.

Hypothesis 1: Perceived leader’s trust in a subordinate is positively related to
the subordinate’s trust in the organization.

Subordinates trust their leader on the basis of their perceptions
of the leader’s trustworthy attributes (e.g., ability, benevolence, and integrity;
Brower et al., 2000; Mayer et al., 1995). In this regard, Whitener et al. (1998)
argued that managers should make efforts to demonstrate trustworthy (and trust-
ing) behaviors to receive trust from subordinates; such trustworthy behaviors
include consistency, integrity, sharing, delegation of control, effective commu-
nication, and demonstration of concern. By extension, such demonstrations of
a leader’s trust can induce subordinates to perceive the trustworthiness of their
organization, because, to subordinates, a leader can represent the organization as
a whole as mentioned before (Eisenberger et al., 1986; Eisenberger et al., 2002;
Levinson, 1965). Along this line, at least in part, both the subordinate’s trust in
his or her leader and the subordinate’s trust in an organization can be originated
from a common factor: the leader’s trustworthy behavior.

On the basis of the preceding discussion, the following hypothesis is proposed
with regard to trust in the organization and the second aspect of the two-way
relationship of trust in the leader–subordinate dyad.

Hypothesis 2: A subordinate’s trust in his or her leader is positively related
to the subordinate’s trust in the organization.

Leader’s trust in subordinate and subordinate’s trust in leader. Several
researchers described that interpersonal trust develops in a recursive reinforce-
ment process (Butler, 1991; Serva et al., 2005; Yakovleva et al., 2010; Zand,
1972). According to the models of Brower et al. (2000) and Mayer et al. (1995), a
leader’s trust in a subordinate follows a reinforcing feedback process that can be
expressed as follows:

\[
\text{subordinate’s trustworthiness} \rightarrow \text{leader’s trust in subordinate} \rightarrow \text{leader’s risk-taking}
\text{behaviors} \rightarrow \text{subordinate’s performance} \rightarrow \text{subordinate’s trustworthiness}
\]
In a similar way, a subordinate’s trust in the leader follows a feedback process that can be expressed as follows:

leader’s trustworthiness → subordinate’s trust in leader → subordinate’s risk-taking behaviors → leader’s performance → leader’s trustworthiness

These reinforcement models are interesting and helpful. However, considered in isolation, they provide little insight into how a leader’s trust in a subordinate influences the subordinate’s trust in the leader (and vice versa) in terms of a recursive reinforcement process. Schoorman et al. (2007) revisited their 1995 publication (i.e., Mayer et al., 1995) and identified some critical issues. They also recognized:

One of the limitations of our model . . . was that our conceptualization was unidirectional. We did not explore the reciprocity in trusting relationships. This is a particularly salient issue in the area of leader–subordinate relationships. . . . We feel that this presents a fruitful area for future research. (Schoorman et al., 2007, p. 347)

To resolve this problem, it should be noted that, according to the models already outlined, a leader’s trustworthy behaviors are antecedent to the subordinate’s trust in the leader, whereas a leader’s risk-taking behaviors are the outcome factors of a leader’s trust in the subordinate.

If construed with the social-exchange process and the norm of reciprocity in the leader–subordinate relationship, two possible paths for the reciprocity of trust can be recognized. On one hand, as mentioned before, trust itself can operate as an exchangeable resource. In that case, subordinates might feel obliged to reciprocate the perceived trust from the leader with an appropriate extent and amount of trust toward the leader. This path is a direct path of reciprocal trust in that one’s trust (as an exchangeable social resource) directly begets another’s trust in accordance with the norm of reciprocity. On the other hand, not only trust but also risk-taking behaviors can be exchanged. Just as trust can be reciprocated, so can risk-taking behaviors. With the norm of reciprocity, it can be inferred that the leader’s risk-taking behaviors can induce a subordinate’s risk-taking behaviors (Serva et al., 2005). According to self-perception theory (Bem, 1967, 1972), people come to know their own attitudes (in this case, trust) by looking at their behavior (in this case, risk-taking behavior) and the context in which the behavior occurred. In this vein, the following process is feasible. A subordinate perceives leader’s risk-taking behavior and then reciprocates the behavior with his or her own risk-taking behaviors, following the norm of reciprocity. Here comes the self-perception. By perceiving his or her risk-taking behaviors directed toward the leader, the focal subordinate infers that it must be true that he or she does such behaviors because he or she trusts the leader. In short, the leader’s empowerment
and delegation (resulting from the leader’s trust in the subordinate) can enhance the subordinate’s level of trust in the leader in an indirect way, in addition to direct way previously discussed.

On the basis of the preceding discussion, the following hypothesis can be proposed.

Hypothesis 3: Perceived leader’s trust in a subordinate is positively related to the subordinate’s trust in the leader.

Mediating role of subordinate’s trust in the leader. As previously noted, leaders typically have an important role in improving the social-exchange process between the organization and its members (Whitener et al., 1998). Leaders are thus often delegated authority to make decisions that have a significant impact on subordinates (e.g., promotions, pay, work assignments, terminations, etc.). The subordinates’ perceptions of the organization are hence affected by their relationship with their leaders. In sum, leaders are likely to be recognized as representatives of the organization by subordinates because of their delegated authority.

However, the behavior of a leader is not only a consequence of the leader being an organizational representative, but also a consequence of the leader’s particular personal leadership style. Managers generally interact with subordinates quite often and regularly. So a manager might be much more salient as a specific individual rather than as a representative of the organization to subordinates in many cases. In this vein, in the short term, it is possible that a leader’s trust in a subordinate promotes only the subordinate’s trust in the leader, according to the norm of reciprocity, but does not increase the subordinate’s trust in the organization. However, in the long run, increased subordinate’s trust in the leader stimulated by the leader’s trust might lead to the subordinate’s increased trust in the organization indirectly. When subordinates display risk-taking behaviors toward the leader as a result of trust in the leader, which are initially intended to benefit the leader, the behaviors are necessarily beneficial to the organization as well in many cases. In accordance with self-perception theory (Bem, 1967, 1972), the subordinates are likely to infer that they trust not only their leader, but also the organization when they recognize that their risk-taking behaviors are beneficial not just to the leader but also to the organization. In addition, subordinates inherently tend to assume similarity between leader and organization (Eisenberger et al., 1986; Eisenberger et al., 2002; Levinson, 1965). Therefore, when subordinates perceive their leader’s trust in them, which increases the subordinates’ trust in the leader first, they are likely to come to think that not only their leader but also the organization as a whole trust them and then to try to reciprocate the organization’s trust. Moreover, subordinates will find it easier to trust the whole organization once they trust their leader in the first place. All in all, in the long term, a leader’s trust in subordinates
can promote the subordinates’ trust in the organization via the subordinates’ trust in that leader.

The following hypothesis can therefore be proposed.

Hypothesis 4: A subordinate’s trust in his or her leader mediates the relationship between the perceived leader’s trust in the subordinate and the subordinate’s trust in the organization.

METHODS

Sample

To test the hypotheses already proposed (see Figure 1), a questionnaire-based survey was conducted on a sample drawn from a population consisting of all pilots employed by Korean Air in May 2006. A total of 1,600 questionnaires were sent to the individual mailboxes of the pilots, of whom 233 responded (a response rate of 14.5%). However, the data from only 182 respondents were used for analysis because 51 completed questionnaires with missing values were excluded. This gave a final response rate of 11.4%.

The average age of the respondents was 44.3 years and their average organizational tenure was 11.7 years. With respect to crew positions, 52.1% were captains, 42.1% were first officers, and 6.8% did not specify their position. With regard to their flying background, 50.6% had a military background, 32.2% had a civilian background, 9.9% had both a military and civilian background, and 6.8% did not specify their background.

Measures

All variables (except for demographics) were measured on a 7-point Likert-type scale ranging from 1 (strongly agree) to 7 (strongly disagree). The rationale for adopting each of these variables is discussed next.

*Perceived leader’s trust in subordinate (LTS).* A leader’s trust in a subordinate (LTS) can be measured either from the subordinate’s perspective or from the leader’s perspective. Although the two approaches conceptually converge on a certain level (Brower et al., 2000), they are rarely the same in reality because

![FIGURE 1 Conceptual framework.](image-url)
the subordinates cannot directly see through the leader’s psychological state. Subordinates only perceive LTS through observation of the leader’s risk-taking behaviors. For the purposes of this study, it was decided to measure LTS from the subordinate’s perspective because the subordinate’s perception of LTS is what the subordinate can rely on as a reference point in deciding how much trust to return to the leader.

Although many researchers have developed measures to gauge how much trust one perceives in another (Cummings & Bromiley, 1996; McAllister, 1995; Roberts & O’Reilly, 1974; Rotter, 1967; Scott, 1981; Sullivan, Peterson, Kameda, & Shimada, 1981), this study adopted Lagace’s (1991) measures of interpersonal trust, which are based on Scott’s (1981) items. Lagace’s six items for measuring salesperson trust from sales manager were initially adopted. Based on the results of a factor analysis, however, one item was deleted, and the Cronbach’s $\alpha$ for the five items (see Table 1) was .96.

Subordinate’s trust in leader (STL). Although subordinate’s trust in the leader (STL) can be measured either from the perspective of the subordinate or from that of the leader, the subordinate’s perception of STL was considered more appropriate for this study. The study adopted Lagace’s (1991) five items of supervisor trust (see Table 1), which measured the subordinate’s perceptions of trust in his or her supervisor. The Cronbach’s $\alpha$ was .95.

Subordinate’s trust in organization (STO). Although some measures have been developed to gauge the overall level of trust within an organization (Cook & Wall, 1980; Huff & Kelley, 2003), trust in the employer (Gabarro & Athos, 1978), or trust in top management (Butz, Dietz, & Konovsky, 2001; Mayer & Davis, 1999; Mayer & Gavin, 2005), no measures in English have been developed to gauge subordinate’s trust in an organization as a substantial entity (STO). However, Lee, Oh, and Suh (2004) did develop a measure of STO in Korean that reflected organizational members’ cognition, affect, and behavioral intention based on McAllister’s (1995) trust items and Rousseau et al.’s (1998) trust concept. The present study adopted Lee et al.’s (2004) six items to measure STO (see Table 1), and the Cronbach’s $\alpha$ was .87.

Control variables. Because propensity to trust (PT) not only varies across individuals and societies (Huff & Kelley, 2003; Mayer et al., 1995) but also can influence the trustworthiness appraisal process (Yakovleva et al., 2010), the respondents’ PT was controlled in this study. Huff and Kelley’s (2003) five items (see Table 1), which reflect an individual perception of the trust level inherent in the society, were used and the Cronbach’s $\alpha$ was .84.

Two demographic variables (crew position and flying experience background) were also included as control dummy variables. The base cases for crew position
<table>
<thead>
<tr>
<th>Items</th>
<th>Factors</th>
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<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>LTS (Factor 1)</strong></td>
<td></td>
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<tr>
<td>My boss feels that I am friendly and approachable.(^a)</td>
<td></td>
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<tr>
<td>My boss knows that he/she can count on me.</td>
<td>.85</td>
</tr>
<tr>
<td>My boss trusts me.</td>
<td>.88</td>
</tr>
<tr>
<td>My boss knows that once he/she makes a decision, I will back him/her up.</td>
<td>.77</td>
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<tr>
<td>My boss believes that I will keep my promises.</td>
<td>.85</td>
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<tr>
<td>My boss is willing to delegate some of his/her responsibilities to me.</td>
<td>.80</td>
</tr>
<tr>
<td><strong>STO (Factor 2)</strong></td>
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<td>I think that most of the members in this organization trust the organization.</td>
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<tr>
<td>I think that our organization will not deceive organizational members.</td>
<td>.18</td>
</tr>
<tr>
<td>No matter how the policies of my organization affect me, I will stick to them.</td>
<td>.16</td>
</tr>
<tr>
<td>Even if my organization treats me unfairly, I will never do harm to the organization.</td>
<td>.20</td>
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<tr>
<td>Even if the policies of my organization do harm to me, I will not be frustrated.</td>
<td>.12</td>
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<tr>
<td>I do not worry about the possibility of my organization terminating my employment.</td>
<td>.11</td>
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<tr>
<td><strong>STL (Factor 3)</strong></td>
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<td>I feel free to discuss work problems with my boss without fear of having it used against me later.</td>
<td>.40</td>
</tr>
<tr>
<td>I have complete trust that my boss will treat me fairly.</td>
<td>.52</td>
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<tr>
<td>If I make a mistake, my boss is willing to “forgive and forget.”</td>
<td>.43</td>
</tr>
<tr>
<td>My boss is friendly and approachable.</td>
<td>.47</td>
</tr>
<tr>
<td>I can count on my boss for help if I have difficulties with my job.</td>
<td>.54</td>
</tr>
<tr>
<td><strong>PT (Factor 4)</strong></td>
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<tr>
<td>When I order something sight unseen via the mail or telephone,</td>
<td>.13</td>
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<tr>
<td>I am confident that the product will arrive as promised.</td>
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<tr>
<td>I believe that people usually keep their promises.</td>
<td>.05</td>
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<td>Most companies genuinely care about their customers.</td>
<td>.04</td>
</tr>
<tr>
<td>Most salespeople are honest.</td>
<td>.06</td>
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<tr>
<td>Most people can be trusted.</td>
<td>.09</td>
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<tr>
<td>Initial eigenvalues</td>
<td>9.03</td>
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<tr>
<td>% of variance</td>
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<tr>
<td>Cumulative % of variance</td>
<td>42.87</td>
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\(^a\)This item was deleted because it was loaded on the STL factor.

Note. Factor extraction: maximum likelihood, varimax rotation; Goodness of fit test: Chi-square = 414.94, df = 132, p < .01. LTS = leader’s trust in subordinate; STO = subordinate’s trust in organization; STL = subordinate’s trust in leader; PT = propensity to trust.
and flying experience background were captain and military background, respectively, which were therefore omitted in the model.

RESULTS

An exploratory factor analysis (EFA) was done for the items of LTS, STO, STL, and PT. As shown in Table 1, four factors emerged with eigenvalues greater than 1.0 (explaining a total of 75.26% of the variance). All items (with one exception in the case of LTS) were loaded on the expected factors with values greater than .50.

The STL items also showed relatively high factor loadings on the LTS variable. The possible explanation for the STL items showing relatively high factor loadings on the LTS variable is the inherently reciprocal nature of the interpersonal trust. The behavior of each player in a leader–subordinate dyad influences the other in an iterative fashion (Brower et al., 2000). Although the players’ degree of trust in each other might not be equivalent (Mayer et al., 1995), they do tend to reciprocate trust from one to the other. Recently, Yakovleva et al. (2010) reported the reciprocity of trust in dyadic relationship. This might explain, at least in part, why the STL items demonstrated relatively high factor loadings on the LTS variable.

In addition to the EFA, we performed a confirmatory factor analysis to ensure the discriminant validity of our trust measures. We formed a one-factor trust model (with all trust items mapping to a single latent variable) and a three-factor trust model (with items mapping to a hypothesized latent variable such as LTS, STL, and STO, respectively), and then tested chi-square differences to see which model provided better fit to the data (Anderson & Gerbing, 1988). Results showed that the hypothesized measurement model (the three-factor model) provided a significantly better fit than the one-factor model ($\Delta \chi^2 = 800.07$, df = 2, $p < .001$). Additionally, the sets of fit indexes showed that the three-factor model (comparative fit index [CFI] = .94, incremental fit index [IFI] = .94, normed fit index [NFI] = .91, root mean squared error of approximation [RMSEA] = .09) fitted the data better than the one-factor model (CFI = .68, IFI = .68, NFI = .66, RMSEA = .23; Hu & Bentler, 1999). Moreover, in the three-factor model, all items significantly loaded on their respective latent variables (all $p$s < .01).

Potential common method bias was checked with Harman’s one-factor test (Harman, 1967; Podsakoff & Organ, 1986). Factor analysis of all items revealed that four factors had eigenvalues greater than 1.0, and the explained variance by the first factor was 44.2%. These results suggest that there was relatively little possibility of common method bias in the sample.

Table 2 shows the means, standard deviations, and correlations among the variables. All of the correlations related to proposed hypotheses showed the expected directions. LTS ($r = .37$) and STL ($r = .40$) were both positively and significantly
TABLE 2
Means, Standard Deviations, and Correlations

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. First officera</td>
<td>0.45</td>
<td>0.50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Civilianb</td>
<td>0.34</td>
<td>0.48</td>
<td>.23**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Bothc</td>
<td>0.10</td>
<td>0.30</td>
<td>.15*</td>
<td>-.25**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. PT</td>
<td>4.84</td>
<td>0.89</td>
<td>.25**</td>
<td>-.05</td>
<td>.38**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. LTS</td>
<td>4.47</td>
<td>1.40</td>
<td>-.10</td>
<td>-.25**</td>
<td>.18*</td>
<td>.19**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. STL</td>
<td>3.99</td>
<td>1.53</td>
<td>-.06**</td>
<td>-.23**</td>
<td>.17*</td>
<td>.19**</td>
<td>.78**</td>
<td></td>
</tr>
<tr>
<td>7. STO</td>
<td>3.46</td>
<td>1.28</td>
<td>-.16*</td>
<td>-.30**</td>
<td>-.03</td>
<td>.02</td>
<td>.37**</td>
<td>.40**</td>
</tr>
</tbody>
</table>

Note. N = 182. PT = propensity to trust; LTS = leader’s trust in subordinate; STL = subordinate’s trust in leader; STO = subordinate’s trust in organization.

*Coded as 1 if the crew position of a respondent is first officer and 0 if not. The base case of crew position is captain. **Coded as 1 if the flying experience background of a respondent is civilian and 0 if not. The base case of the flying experience background is military. *Coded as 1 if the flying experience background of a respondent is both of military and civilian and 0 if not.

*p < .05. **p < .01, two-tailed.

correlated with STO. The correlation between LTS and STL was also positive and very significant (r = .78).

Table 3 shows the results of hypotheses testing. Hypotheses 1 and 2 were tested in Model 2 and Model 3, respectively. The coefficient of LTS in Model 2 was .30 (p < .01) and that of STL in Model 3 was .31 (p < .01). These findings provide support for Hypotheses 1 and 2. Hypothesis 3 was tested in Model 1, in which LTS was regressed on STL with control variables. The coefficient of LTS was .83 (p < .01), which provided support for Hypothesis 3.

To test Hypothesis 4, which proposed STL as a mediating variable in the relationship between LTS and STO, hierarchical multiple regression analyses, a Sobel test, and a multicollinearity diagnosis were done. In summary, all of these tests supported Hypothesis 4.

With respect to the regression analyses, the results of the previous test of Hypothesis 3 provided the first step (i.e., independent variable-mediated: Model 1) and the results of testing Hypothesis 1 provided the second step (i.e., independent variable-dependent variable: Model 2). In the last step (Model 4), the proposed mediating variable (STL) was added to Model 2. The coefficient of LTS (which had been positively significant in Model 2; βLTS = .30, p < .01) became non-significant in Model 4 (βLTS = .11, p > .10). However, the coefficient of STL was positively significant in Model 4 (βSTL = .23, p < .01). These results support Hypothesis 4.

The results of the Sobel test are shown in Table 4. It is apparent that these results support the findings of the hierarchical multiple regression analyses.
## TABLE 3
Results of Multiple Regression Analyses

<table>
<thead>
<tr>
<th>Predictor Variable</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.02</td>
<td>2.35**</td>
<td>2.51**</td>
<td>2.35**</td>
</tr>
<tr>
<td>(0.46)</td>
<td>(0.55)</td>
<td>(0.53)</td>
<td>(0.54)</td>
<td></td>
</tr>
<tr>
<td>First officer(a)</td>
<td>.04</td>
<td>-.14</td>
<td>-.17</td>
<td>-.15</td>
</tr>
<tr>
<td>(0.16)</td>
<td>(0.19)</td>
<td>(0.18)</td>
<td>(0.18)</td>
<td></td>
</tr>
<tr>
<td>Civilian(b)</td>
<td>-.13</td>
<td>-.64**</td>
<td>-.63**</td>
<td>-.61**</td>
</tr>
<tr>
<td>(0.16)</td>
<td>(0.19)</td>
<td>(0.19)</td>
<td>(0.19)</td>
<td></td>
</tr>
<tr>
<td>Both(c)</td>
<td>.02</td>
<td>-.63</td>
<td>-.61</td>
<td>-.63*</td>
</tr>
<tr>
<td>(0.27)</td>
<td>(0.32)</td>
<td>(0.32)</td>
<td>(0.32)</td>
<td></td>
</tr>
<tr>
<td>PT</td>
<td>.06</td>
<td>.02</td>
<td>.02</td>
<td>.01</td>
</tr>
<tr>
<td>(0.09)</td>
<td>(0.11)</td>
<td>(0.11)</td>
<td>(0.11)</td>
<td></td>
</tr>
<tr>
<td>LTS</td>
<td>.83**</td>
<td>.30**</td>
<td>—</td>
<td>.11</td>
</tr>
<tr>
<td>(0.05)</td>
<td>(0.07)</td>
<td>(0.10)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>STL</td>
<td>—</td>
<td>—</td>
<td>.31**</td>
<td>.23**</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>(0.06)</td>
<td>(0.09)</td>
</tr>
<tr>
<td>(R^2)</td>
<td>.61</td>
<td>.21</td>
<td>.23</td>
<td>.24**</td>
</tr>
<tr>
<td>(F)</td>
<td>55.13***</td>
<td>9.26**</td>
<td>10.58***</td>
<td>9.06**</td>
</tr>
</tbody>
</table>

*Note. N = 182. The values of independent variables are an unstandardized coefficient and a standard deviation in parentheses. PT = propensity to trust; LTS = leader’s trust in subordinate; STL = subordinate’s trust in leader; STO = subordinate’s trust in organization.\n
\(a\) Coded as 1 if the crew position of a respondent is first officer and 0 if not. The base case of crew position is captain.\(b\) Coded as 1 if the flying experience background of a respondent is civilian and 0 if not. The base case of the flying experience background is military.\(c\) Coded as 1 if the flying experience background of a respondent is both of military and civilian and 0 if not.\n
\(*p < .05. \ **p < .01.\)

## TABLE 4
Sobel Test Result of Mediation Effect

<table>
<thead>
<tr>
<th>(a (S_{a})^a)</th>
<th>(b (S_{b})^b)</th>
<th>Test Statistics</th>
<th>(p) Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>.83 (0.05)</td>
<td>.23 (0.09)</td>
<td>2.52</td>
<td>.01</td>
</tr>
</tbody>
</table>

*Note. We followed the procedures of the Sobel test at [http://www.psych.ku.edu/preacher/sobel/sobel.htm](http://www.psych.ku.edu/preacher/sobel/sobel.htm).\n
\(^a\) \(a\) is the unstandardized coefficient of leader’s trust in subordinate and \(S_{a}\) is the standard deviation of the coefficient in Model 1. \(^b\) \(b\) is the unstandardized coefficient of subordinate’s trust in leader and \(S_{b}\) is the standard deviation of the coefficient in Model 3.
The results of the multicollinearity tests on Model 4 are shown in Table 5. As shown in Table 5, the highest value for variance inflation factor (VIF) was 2.62, which is clearly less than the criterion of 10 for multicollinearity (as proposed by Hair, Anderson, Tatham, & Black, 1998) and the more stringent criterion of 5 (as proposed by Studenmund, 2000). However, with regard to the condition index (CI), Table 5 shows that the CI value of the STL variable was 19.02—which is greater than Hair et al.’s (1998) threshold value of 15. But, no coefficient in the variance-decomposition matrix had its variance explained more than 90% by the STL variable—thus the second criterion (of collinearity problem) suggested by Hair et al. was satisfied. In short, despite relatively high correlations between variables, multicollinearity problem was solved.

### DISCUSSION

As mentioned before, leaders as middle managers act as a linkage between subordinates and the organization. In this regard, leaders can be a very important factor in forming subordinates’ trust in the organization. To date, in spite of the importance, little attention has been paid to the role of leaders regarding trust within organizations. However, focusing on only one phase of the trust forming (examining trust only in the member–organization relationship neglecting the middle
manager’s role in building subordinates’ trust in the organization) cannot fully illustrate trust dynamics in an organization. Trust forms across levels (Schoorman et al., 2007) and spills over in a multidirectional manner, not in a unidirectional way. In this regard, we proposed an enhancement of two-way trust in the leader–subordinate dyad as an antecedent of members’ trust in the organization. This has shown that subordinates who perceive greater trust from their leader display greater trust in their leader, and that subordinates who have greater trust in their leader also have greater trust in their organization.

These findings have implications for the role of leaders as middle managers in increasing members’ trust in their organization. In this study, subordinate-perceived leader’s trust in a subordinate (LTS) was related to the subordinate’s trust in an organization (STO). With this result, given that the leader’s trusting behaviors increase trustworthiness of the leader and, in turn, drive up the level of subordinates’ trust in the leader (Mayer et al., 1995; Serva et al., 2005), it can be inferred that a leader’s trusting behaviors will presumably increase members’ trust in the organization in the long term. Senior managers who want to enhance members’ trust in their organization should therefore ensure that organizational leaders are proactive in demonstrating trusting behaviors to subordinates. Previous studies on organizational trust have tended to focus on how the leader’s trustworthiness induces subordinates’ trust in the leader, but they have paid less attention to the role of the leader’s trusting behaviors (as an antecedent of subordinates’ perceptions of the leader’s trust in subordinates). Considered together with studies that showed a positive relation between trusting behavior and consequent trust level (Das & Teng, 1998; Serva et al., 2005), this study’s finding that a subordinate’s perceptions of a leader’s trust in that subordinate are positively related to the subordinate’s trust in the organization (mediated by the subordinate’s trust in the leader) make it clear that senior managers should prioritize the development of organizational norms and practices that motivate middle managers to trust their subordinates and to proactively demonstrate that trust.

This study also argues that it is feasible that a leader’s trust in a subordinate induces that subordinate’s trust in his or her leader. In terms of interpersonal trust, many researchers have focused on trustor’s attribution on trustee’s characteristics, which might increase trustor’s positive expectation on trustee’s attitudes and behaviors (e.g., Coleman, 1990; Hardin, 1992; Mayer et al., 1995; Williamson, 1993). Mayer et al. (1995) proposed three major subfactors (ability, benevolence, and integrity) of perceived trustworthiness as antecedents of trust. Their theoretical development was proved in the field studies of Mayer and Davis (1999) and of many other researchers thereafter. However, Schoorman et al. (2007) recognized that their trust model (i.e., Mayer et al., 1995) did not include the reciprocal nature of trust, which is particularly important in the leader–subordinate relationship. In other words, their model did not conceptualize the mechanism through which one party’s trust in another reciprocates the latter’s trust in the former.
Although Yakovleva et al. (2010) tried to shed light on the mechanism and did show a certain feature of reciprocal trust recently, their study did not consider cross-level facets of trust in an organization. This study has shown that a subordinate who perceives greater trust from his or her leader has greater trust in that leader, and that subordinate’s trust in his or her leader mediates the relationship between the leader’s trust in his or her subordinate and subordinate’s trust in his or her organization.

On the basis of this study’s findings, the study can be said to have some contributions to this research field. First, the study has provided a useful theoretical development with regard to the development of trust in the leader–subordinate dyad. Although many studies have noted that interpersonal trust develops by reciprocal reinforcement in the leader–subordinate relationship, previous studies have not provided detailed accounts of the mechanism by which this is achieved. In this regard, this study has proposed that a leader’s risk-taking behavior (which is based on his or her trust in subordinates) can change subordinates’ perceptions of the trust that their leader has in them and, as a result, the subordinates feel obliged to reciprocate the trust to their leader. This direct path, in which perceived leader’s trust in subordinates directly begets subordinates’ trust in the leader, can contribute in part. Also, the leader’s risk-taking behaviors can facilitate a subordinate’s trust in the leader through an indirect path in which the subordinate’s self-perception of his or her own risk-taking behaviors toward the leader, which were triggered by the leader’s risk-taking behaviors in line with the norm of reciprocity, leads to the increase of the subordinate’s trust in the leader. These processes can also be applied in the reverse direction—from subordinate to leader. The combination of these reciprocal processes constitutes a recursive reinforcement process within the leader–subordinate dyad in the long term.

Second, previous studies have noted that a leader attempts to promote his or her trustworthiness to increase subordinates’ trust in the leader. However, this raises the question of why leaders should just sit on their hands and wait for subordinates to trust them first, rather than taking initiatives in trusting their subordinates. Despite the lack of causality and possible discrepancy between the leader’s actual trust behaviors and subordinates’ perceptions of those behaviors, this study’s findings with respect to Hypothesis 3 (which demonstrated a positive correlation between leader’s trust in a subordinate and subordinate’s trust in the leader) does shed light on a possibility that the leader’s behavior (in trusting a subordinate) triggers the subordinate’s trust toward his or her leader, which, in turn, leads to dedication, loyalty, and commitment on the part of the subordinate.

Implications

This study has the following specific implications to airline organizations. This study stresses the importance of proactive attitudes of pilots in trusting co-pilots.
As noted earlier, a pilot’s trust in a co-pilot can lead to that co-pilot’s trust in the organization. Such trust in the firm can decrease the turnover intention of co-pilots. Given the reciprocal feature of trust that this study addressed, it is also likely that the pilot’s trust, too, is enhanced in a recursive way by increased trust from the co-pilot, which was in the first place stimulated by the pilot himself or herself. Provided the scarcity of flying talents, lowered turnover rates alone might be a great reward for the relatively small cost of a trust training program.

Apart from the turnover rates, given the value of strong trust between pilot and co-pilot in flight, airlines should make considerable efforts to encourage pilots to take the initiative in trusting co-pilots, not just waiting to be trusted. Such a proactive attitude will pay off in a priceless way. Imagine an emergency in flight. Firm trust between the pilot and co-pilot is essential for successful mutual coordination in an emergency, which generally entails escalation of embarrassment and nervousness. Trust could soothe such anxiety quite effectively. Starting a trust training program for pilots immediately will save money, and the most precious asset in the world, life.

Limitations and Recommendations for Future Research

As with all research, certain limitations are acknowledged in this study. First, the data for the study were collected from only one vocation within one organization. Caution should therefore be exercised in generalizing the findings. To enhance the external validity of the results, empirical research should be conducted with data collection from a wider range of organizations and vocations. In addition, the conceptual framework employed in this study could be applied to a wider variety of organizational relationships such as person–group, person–organization, group–group, group–organization, and organization–organization.

Second, even though Harman’s (1967) single-factor test was conducted, the sample was not entirely free from common method bias because the respondents answered questions about independent and dependent variables at the same time. Although it was necessary, given the socioemotional facet of trust as a social exchange resource, to measure the leader’s trust in a subordinate from the subordinate’s perspective, this methodology might produce a problem with respect to common method bias, which has the potential to threaten the internal validity of the results. To overcome this problem, future studies should consider measuring the leader’s trust in a subordinate from both the leader’s perspective and the subordinate’s perspective, and then comparing the results of these two methods.

Third, because the data for this study were cross-sectional, the results provide evidence of only correlation, without necessarily implying causality. To establish such causal relationships, time-split or longitudinal data would be required.

Finally, the focus of this study on two-way trust in the leader–subordinate dyad made it difficult to distinguish certain core concepts of trust theory (e.g.,
mutuality, reciprocity, and reinforcement). Further research is needed to delineate the differences among these concepts in the context of the present research framework.

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REFERENCES


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