



2009

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THE CENTRAL ROLE OF COMMUNICATION IN DEVELOPING TRUST AND ITS EFFECT ON EMPLOYEE INVOLVEMENT

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Communication plays an important role in the development of trust within an organization. While a number of researchers have studied the relationship of trust and communication, little is known about the specific linkages among quality of information, quantity of information, openness, trust, and outcomes such as employee involvement. This study tests these relationships using communication audit data from 218 employees in the oil industry. Using mediation analysis and structural equation modeling, we found that quality of information predicted trust of one's coworkers and supervisors while adequacy of information predicted one's trust of top management. Trust of coworkers, supervisors, and top management influenced perceptions of organizational openness, which in turn influenced employees' ratings of their own level of involvement in the organization's goals. This study suggests that the relationship between communication and trust is complex, and that simple strategies focusing on either quality or quantity of information may be ineffective for dealing with all members in an organization.

Keywords: *trust; communication satisfaction; communication audit; communication quality; quantity of communication*

As early as the late 1950s and early 1960s, scholars noticed the importance of trust as a prerequisite for managerial and organizational effectiveness (Argyris, 1962; Deutsch, 1958; Likert, 1967; McGregor, 1967; Mellinger,

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1956). Later, researchers found that interpersonal trust had positive effects on individual, group, and organizational outcomes, such as individual performance (Earley, 1986; Rich, 1997; Robinson, 1996), job satisfaction (Driscoll, 1978; Muchinsky, 1977; Rich, 1997), organizational citizenship (Konovsky & Pugh, 1994; McAllister, 1995), problem solving (Zand, 1972), and cooperation (Axelrod, 1984). Today, trust has reemerged as an important topic as organizations attempt to build social capital, increase employee engagement, and improve knowledge-sharing among employees (Abrams, Cross, Leser, & Levin, 2003; Bachmann & Zaheer, 2006; Kramer & Cook, 2004; Kramer & Tyler, 1996; Nooteboom & Six, 2003; Tsai & Ghoshal, 1998).

Several studies have demonstrated the central role that communication plays in developing and maintaining trust. Trust and communication have been shown to enhance such organizational outcomes as employee participation and job performance (Dirks, 1999; Dirks & Ferrin, 2001; Ellis & Shockley-Zalabak, 2001; Kramer, 1996; Pincus, 1986; Ruppel & Harrington, 2000). Yet many questions about trust and communication remain unanswered (DeRidder, 2004; Kramer, 1996). To better understand the relationship between trust and communication, we posed three specific research questions:

Research Question 1: What is the relative importance of quantity and quality of information as it relates to trust and behavioral outcomes?

Research Question 2: How is trust affected by information received from top management, coworkers, and supervisors?

Research Question 3: What is the specific direction of the linkages among communication, trust, and outcomes?

To address these questions, we analyzed data from an International Communication Association (ICA) survey and used statistical techniques to test the order of variables and demonstrate the role of quantity and quality of information in developing trust, organizational openness, and employee involvement.

Our first step in testing these relationships was to propose a basic model of communication and trust using extant theory. We then tested each hypothesized relationship in the model using correlation techniques. Then, we used mediation analysis to test the order of variables. Finally, we tested the complete model using structural equation modeling to determine if the model fit the underlying data for three different relationships—including coworker, subordinate-supervisor, and between employees and

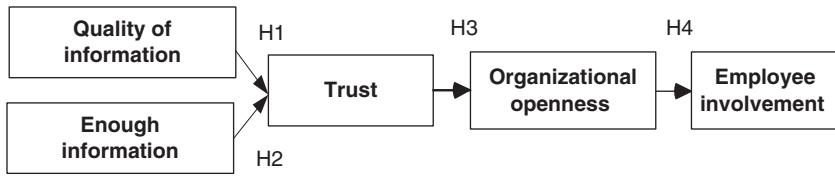


Figure 1. Theoretical Model of Perceived Communication, Trust, Experienced Openness, and the Effect on Employee Involvement in Organizational Goals

top management. From the results, we propose communication-related insights to help managers strengthen trust in large-scale organizations.

PROPOSED MODEL

Our proposed model focuses on trust and communication and their impact on employees' involvement in organizational goals. Figure 1 shows the basic model we used to examine these relationships, and the following section provides a rationale for each of the variables in our model. Our overarching theory driving this model is that communication practices lead to performance outcomes through the development of trust, perceptions of organizational openness, and employee involvement. We chose to include employee involvement as our dependent variable because it has been shown to be strongly associated with performance outcomes (Major et al., 2007; Ye, Marinova, & Singh, 2007). We chose to test the relationships among these variables in this particular configuration because the model relates to the sequencing *within* an employee's experience. That is, it is the employee's perception of quantity and quality of received information that is hypothesized to influence employee's trust, which in turn shapes perceptions of general openness in the organization, which we hypothesize has the most direct influence on the employee's involvement in the organization's goals.

Trust and Information Sharing

While there is no single accepted definition of trust, a recent review of cross-disciplinary research (Rousseau, Sitkin, Burt, & Camerer, 1998)

indicated a convergence around the definition proposed by Mayer, Davis, and Schoorman (1995): "willingness of a party to be vulnerable to the actions of another party" (p. 712). For the purposes of this research, then, it is important to note that trust is part of a relationship between two people and involves the voluntary acceptance by the trustor of risk based on the actions of the other party. For example, an employee might trust that her supervisor will treat her fairly, provide opportunities for professional growth, make sure she has the necessary tools to do her work well, and provide good guidance. If these expectations are met, the employee is more likely to focus full attention on her work tasks. Conversely, if the employee distrusts her supervisor, she is more likely to spend time covering her back, questioning her boss's directions, or even looking for another job.

Trust is based on beliefs about the other party, which are shaped through information. Consequently, providing information gives an employee the opportunity to develop trust, and lack of information can reduce trust. Two particular aspects of information sharing that are often discussed in the literature are *quality of information* and *quantity of information*.

Quality of information tends to be operationalized in terms of accuracy, timeliness, and usefulness. Research shows that quality of information is associated with higher levels of trust (Benton, Gelber, Kelley, & Liebling, 1969; Folger & Konovsky, 1989; Konovsky & Cropanzano, 1991; Sapienza & Korsgaard, 1996; Simons, 2002; Whitener, Brodt, Korsgaard, & Werner, 1998; Roberts & O'Reilly, 1974). Thus, we posit that employees will exhibit higher levels of trust when they believe the information they are receiving from the other person is accurate, timely, and/or useful because amount of information reduces vulnerability.

Trust is based on beliefs about the other party, which are shaped through information.

Quantity of information or information adequacy speaks to whether organization members feel adequately informed. In other words, "Am I getting enough information?" Extant research suggests that a strong relationship exists between the flow of information and trust (Becerra &

Gupta, 2003; Muchinsky, 1977; O'Reilly, 1977; O'Reilly & Roberts, 1974, 1977). Similar to quality of information, getting enough information from a coworker, supervisor, or top management would tend to reduce the trustor's perception of vulnerability and make one more willing to rely on the trustee.

Zimmerman, Sypher, and Haas's (1996) communication metamyth regarding amount of information appears to challenge this proposition. They argue that no matter how much information people receive, they will continue to report that they want more. In a more recent study, however, Hargie, Tourish, and Wilson (2002) demonstrated that when management focuses on increasing information and reducing uncertainty, communication satisfaction among employees increases. Likewise, Becerra and Gupta (2003) and Ellis and Shockley-Zalabak (2001) have found a positive relationship between trust and amount of information. We note here that most of the studies cited above have focused on either quality of information or quantity of information. Thus, there is little research on the relative importance of these two variables. Kramer (1996), one of the few who has addressed both quantity and quality of communication, found that the quality of peer communication was related to positive job transfer adjustment in the 1- to 3-month period while amount of information was more salient in the 3-month to 1-year period. While Kramer did not address trust, his study suggests that the impact of quality and quantity of communication may differ. We will return to this issue later but for now we pose the following hypotheses:

Hypothesis 1: Quality of information will be positively associated with higher trust.

Hypothesis 2: Receiving enough information will be positively associated with higher trust.

Trust, Openness, and Involvement in Organizational Goals

Open communication implies that employees are willing to exchange their thoughts and ideas, even if the ideas go against the grain of popular opinion. Studies have shown that open communication is another key factor related to interpersonal trust (Butler, 1991; Ferris, Senner, & Butterfield, 1973; Gabarro, 1978; Hart, Capps, Cangemi, & Caillouet, 1986).

We also know that employees will be more hesitant to involve themselves in supporting organizational goals if they cannot trust their supervisors or

if open communication is nonexistent. Several studies have shown a positive relationship between communication and organizational commitment (DeCotiis & Summers, 1987; Mathieu & Zadjac, 1990; Postmes, Tanis, & de Wit, 2001; Trombetta & Rogers; 1988). In a recent study, DeRidder (2004) discussed the importance of exhibiting openness as a way of promoting organizational commitment.

Therefore, we offer the following hypotheses:

Hypothesis 3: Higher trust will be positively associated with perceptions of organizational openness.

Hypothesis 4: Organizational openness will be positively associated with involvement in organizational goals.

In addition to these relationships between the variables, we hypothesize that the variables will be ordered as shown in our model (see Figure 1).

Hypothesis 5: Perceived organizational openness will mediate the relationship between trust and employee involvement.

Hypothesis 6: Trust will mediate the relationships among quality of information and enough information and perceived organizational openness.

METHOD

Data Collection

We collected data from employees of a multinational corporation with 12,000 employees in the oil field services industry. Two hundred eighteen employees were asked by the personnel department to participate in this study. Participation was voluntary, and respondents were allowed to complete the questionnaire during work hours. Of the 218, 100% responded.

Participants worked in one of five locations including the organization's headquarters in Sugarland, Texas, three locations in Oklahoma, and one additional location in Houston, Texas. Participants represented three different organizational functions: finance, legal/personnel, and the product center, and three different geographical divisions including offshore, headquarters, and North America. Of those who responded, 63% were salaried employees, 33% were paid on an hourly basis, and 4% were contractors. The respondents included 94 supervisors (43%) and 119 non-supervisors (55%); 5 participants (2%) did not respond to this question. The sample was 58% male and 42% female.

Measures

We used the ICA survey to collect data about communication and trust among the respondent and top management, immediate supervisor, coworkers, and subordinates. The audit was developed by members of the ICA from 1971 to 1979 under the leadership of G. M. Goldhaber. The audit included an extensive assessment package with a standardized survey questionnaire, interviews, observations, network analyses, crucial incidents, and a communication diary. The questionnaire's reliability and validity have been validated (Clampitt, 2000; Goldhaber & Rogers, 1979).

Key communication dimensions assessed by the questionnaire are (a) sources of information, (b) channels of communication, (c) receiving information, (d) sending information, (e) follow-up on information sent, information received, and sources of information, (f) quality of information, and (g) organizational communication relationships. There are 112 questions in the questionnaire and 11 demographic variables.

As the name suggests, audits are typically used to diagnose communication strengths and weaknesses or report on communication patterns within an organization. Consequently, communications audits have the advantage of covering a wide range of communication variables but may be limited in the number of questions per variable. Also, when audits are used as a diagnostic tool, investigators typically evaluate the absolute values of certain variables of interest. For example, the inquiry might focus on whether subordinates report receiving enough information from their supervisors. In contrast, when used as a research tool, audits can be used to test relationships among variables, such as receiving enough information, trust, and involvement.

The communication audit has resurfaced in the scholarly literature as an important tool for understanding the impact of information sharing and organizational functioning (Downs & Adrian, 2004). In the past 15 years, there have been studies on specific dimensions of organizational communication, but there have been few published studies using communication audits to test theories of organizational communication (Hargie & Tourish, 2000; Smeltzer, 1993). This suggests that, while organizations are using communication audits to monitor and diagnose communications, few researchers are taking advantage of communication audit tools to create new knowledge about communication.

While this is a study of a single organization, our review of theory leads us to believe that relationships among variables found in this particular instance could generalize to other organizations. In contrast to this single

organization study, we note problems that might occur from including data from surveys in different organizations at different times. In some cases, the instruments used in different organizations may vary from one organization to another. Also, communication audit data gathered at different points of time may also vary significantly because of differences in the economy or world events. For example, imagine the differences in employee trust and communication in companies in Silicon Valley before and after the dot.com bust or the Enron scandal. Therefore, although we test only one organization at one point in time, we avoid the issues involved with combining results from various organizations over long periods of time.

Variables

Dependent variable. The primary dependent variable was employee involvement.

Employee involvement was elicited with the question: "To what extent are you involved in the achievement of your organization's goals?" The answer was measured on a 4-point Likert-type scale. The resulting variable was slightly skewed and with kurtosis, but we decided not to transform the variable to make interpretation more straightforward.

Independent variables. The independent variables were Organizational Openness, Quality of Information, Adequacy of Information, and Trust.

Organizational Openness was measured on a 4-point Likert-type scale using three prompts: "Your boss listens to what you have to say," "Your organization encourages differences of opinion," and "You are frank and candid with others in your organization." The questions were averaged to create the scale, which had an alpha of .82 and loaded on one factor.

Trust of top management was measured with the prompt "You trust top management." Supervisor trust used the prompt, "You trust your boss (immediate supervisor)." Coworker trust used the prompt, "You trust your coworkers." All trust questions were measured using a 4-point Likert-type scale.

Quality of Information included the respondent's assessment of the quality of information from coworkers, supervisor, and top management. Three aspects of information quality were assessed, including the following information: (a) timeliness, (b) accuracy, and (c) usefulness. These dimensions were recorded on a 4-point Likert-type scale and averaged to create the scales. All three scales loaded on one factor. The Quality of

Information scale's alpha was .71 for coworkers, .74 for supervisors, and .73 for top management.

Enough Information was coded as 1 when the respondent said that he receives *just enough information* from coworkers, supervisors, or top management.

While this is a study of a single organization, our review of theory leads us to believe that relationships among variables found in this particular instance could generalize to other organizations.

As we expected, the data suffer from some multicollinearity among the trust variables; for example, top management trust, supervisor trust, and coworker trust are somewhat interrelated. Because linear regression is based on the assumption of a direct relationship between two variables and homoscedasticity, or equal variance of the dependent variable across values of the independent variable, multicollinearity could create problems with regression analysis by making the regression coefficients unstable and their interpretation tenuous (Afifi & Clark, 1990). To determine if homogeneity of variance exists, we performed the Cook-Weisberg test for heteroscedasticity and found that we did not reject the null hypothesis of constant variance, indicating homoskedasticity.

Analysis

Correlations were used to test hypotheses about the relationships among variables. To test the ordering of the variables, we used mediation analysis (Baron & Kenny, 1986) and structural equation modelling.

When two independent variables were interrelated and predicted the dependent variable, we used mediation analysis to determine whether one of the two variables mediated the relationship between the other two (Baron & Kenny, 1986). For example, both organizational openness and supervisor trust predict employee involvement but they, too, are correlated (see Table 1, $r = .39, p < .001$). Therefore, we do not know whether one or both of these independent variables have a direct or indirect effect on employee involvement. Barron and Kenney proposed that in this situation,

Table 1. Descriptive Statistics and Correlations (N = 206)

	Mean	Standard Deviation	1	2	3	4	5	6	7	8	9	10
1. Employee involvement	2.81	0.72										
2. Organizational openness	2.70	0.56	.37***									
3. Coworker trust	2.85	0.61	.06	.26***								
4. Coworker quality of information	2.77	0.47	.12†	.15*	.37***							
5. Coworker enough information	0.49	0.50	.15*	.16*	.13†	.19**						
6. Supervisor trust	3.13	0.85	.19**	.39***	.30***	.20**	.10					
7. Supervisor quality of information	3.01	0.59	.31***	.33***	.22**	.26***	.23***	.57***				
8. Supervisor enough information	0.52	0.50	.09	.11	.05	.13†	.14*	.17*	.24**			
9. Top management trust	2.57	0.75	.21**	.33***	.17*	.12†	.06	.38***	.32***	.05		
10. Top management quality of information	2.61	0.57	.28***	.28***	.17*	.18**	.05	.21**	.27***	.02	.43***	
11. Top management enough information	0.23	0.42	.16*	.12†	.10	-.03	.06	.11	.11†	.10	.29***	.19**

*** $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$.

Table 2. Mediation Analyses Using Ordinary Least Squares Estimates (N = 209)

	<i>Model 1</i> <i>Employee</i> <i>Involvement</i>	<i>Model 2</i> <i>Employee</i> <i>Involvement</i>	<i>Model 3</i> <i>Employee</i> <i>Involvement</i>	<i>Model 4</i> <i>Organization</i> <i>Openness</i>	<i>Model 5</i> <i>Organization</i> <i>Openness</i>	<i>Model 6</i> <i>Organization</i> <i>Openness</i>
Intercept	***	***	***	***	***	***
Organization openness	.37***	.34***	.34***			
Trust of coworker	-.03			.23**		
Coworker quality information				.05		
Coworker enough information				.12 [†]		
Trust of superior		.06			.27***	
Supervisor quality information					.17*	
Supervisor enough information					.01	
Trust of top management			.10			.24**
Top management quality information						.17*
Top management enough information						.01
Adjusted R ²	.13	.13	.14	.08	.15	.11
Model F	16.02***	16.56***	18.29***	6.72***	12.89***	9.41***
Degrees of freedom	2, 207	2, 209	2, 205	3, 205	3, 205	3, 197

*** $p < .001$, ** $p < .01$, * $p < .05$, [†] $p < .10$.

when both independent variables are used in a regression model predicting the dependent variable, the one that has a direct effect will stay significant, while the other will not. This provides a statistical test for the order of variables that are interrelated. In our example, we find that when both organizational openness and supervisor trust are used to predict employee involvement, that organizational openness remains significant (see Table 2, Model 2, $\beta = .34$, $p < .001$), but supervisor trust does not (Table 2, Model 2, $\beta = .06$, not significant [ns]). This means that the true relationship among these variables is that supervisor trust predicts organizational openness, which predicts employee involvement.

Structural equation modelling calculates all the hypothesized relationships among the variables in the proposed model at the same time and compares the fit of the hypothesized model with the underlying data. Therefore, although three variables might be intercorrelated, if we do not represent the relationships among those variables correctly in our proposed model, the model will have a poor fit. Taking our previous example, if we propose a model in which organizational openness predicts supervisor trust, which predicts employee involvement, the model would have a poor fit. But if we represent the variables in the order indicated by our mediation analyses, the model is likely to fit well.

We used the estimation procedure of AMOS (Byrne, 2001; Hoyle, 1995) to construct the structural equation models (SEM) because SEM can simultaneously observe the effects and changes of the variables in the model. To test our model of the relationships among the variables of interest, we adopted a strictly confirmatory analysis approach (Joreskog, 1993). The AMOS SEM provides a number of tests to measure the goodness of fit between the data and the proposed model. The measures include the chi-squared and degrees of freedom of the model, the probability that the model can be replicated (p) and a number of fit indices, such as NFI, CFI, RFI, and RMSEA (these measures are described in the appendix). Our standards for accepting a model fit are $p > .05$, $\chi^2/df \leq 2$, RFI $> .95$, and RMSEA $< .08$.

RESULTS

The descriptive statistics and correlations are found in Table 1. The descriptive statistics show moderately high levels of employee involvement ($\mu = 2.81$ out of 4), organizational openness ($\mu = 2.70$), and supervisor trust ($\mu = 3.13$; See Table 1).

In Hypothesis 1, we proposed that quality of information would be positively associated with higher trust. Quality of information was positively correlated with trust for coworkers (CW; $r = .37$, $p < .001$), supervisor ($r = .57$, $p < .001$), and top management (TM; $r = .43$, $p < .001$), providing strong support for Hypothesis 1.

Hypothesis 2 proposed that receiving enough information would be positively associated with higher trust. Receiving enough information was only barely correlated with trust for coworkers ($r = .13$, $p < .10$), but it was significant for supervisors ($r = .17$, $p < .05$), and top management ($r = .29$, $p < .001$), providing mixed support for Hypothesis 2.

Our Hypothesis 3 proposed that higher trust would be positively associated with organizational openness. Organizational openness was positively associated with trust of coworkers ($r = .26, p < .001$), trust of supervisor ($r = .39, p < .001$), and trust of top management ($p = .33, p < .01$), supporting Hypothesis 3.

Hypothesis 4 proposed that organizational openness would be positively associated with employee involvement. Organizational openness was positively associated with involvement ($r = .37, p < .001$), strongly supporting Hypothesis 4.

Hypothesis 5 proposed that organizational openness would mediate the relationship between trust and employee involvement. To determine the relationships among these variables, which were highly correlated (see Table 1), we conducted mediation analyses (Baron & Kenny, 1986) using multivariate regression models predicting employee involvement (see Table 2, Models 1, 2, and 3). Organizational openness had a more significant influence on employee involvement than trust of coworkers (Model 1, organization openness: $\beta = .37, p < .001$; trust: $\beta = -.03, ns$), supervisors (Model 2, organization openness: $\beta = .34, p < .001$; trust: $\beta = .06, ns$), and top management (Model 3, organization openness: $\beta = .34, p < .001$; trust: $\beta = .10, ns$). This indicates that trust predicts organizational openness, which has a direct effect on employee involvement.

Hypothesis 6 predicted that trust would mediate the relationship among quality of information, receiving enough information, and organizational openness. We conducted mediation analyses to determine the relationships among the trust, quality, and enough of information and organizational openness (see Table 2, Models 4, 5, and 6). Trust had a more significant influence on organizational openness than quality of information or enough information for coworkers (Model 4, Trust, $\beta = .23, p < .01$; CW quality of information, $\beta = .05, ns$; CW enough information: $\beta = .12, p < .10$), supervisors (Model 5, $\beta = .27, p < .001$; supervisor quality of information: $\beta = .17, p < .05$; supervisor enough information, $\beta = .01, ns$), and top management (Model 6, Trust, $\beta = .24, p < .01$; TM quality of information, $\beta = .17, p < .05$; supervisor enough information, $\beta = .01, ns$). This result indicates that quality of information predicts trust, which has a direct effect on organizational openness.

To further test our model of the relationship among the variables, we developed a SEM showing the effects of coworkers' quality of information, enough information, trust of coworkers, and organizational openness on involvement (see Figure 2, Model A1). Model A1 barely fits $\chi^2 (df = 6) = 12.287, p = .056, RFI = .534, \text{ and } RMSEA = .069$. In particular, we

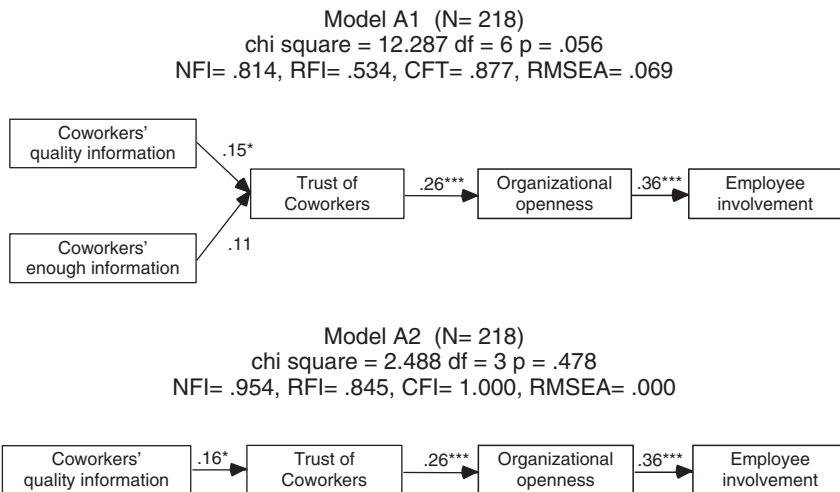


Figure 2. AMOS Structural Equation Model for the Effects of Perceived Coworker Quality of Information and Trust of Experienced Organizational Openness and Employee Involvement

noticed that the relationship between coworkers' providing enough information and trust of coworkers is not significant, further disconfirming Hypothesis 2. Consequently we took *enough information* out of the model and tested it again (See Figure 2, Model A2). Model A2 had an excellent fit $\chi^2 (df = 3) = 2.488, p = .478, RFI = .845$, and $RMSEA = .000$, further supporting Hypotheses 5 and 6 regarding the proposed order of variables.

We prepared a similar SEM showing the effects of supervisors' quality of information, enough information, trust of supervisors, and organizational openness on employee involvement (see Figure 3, Model B1). Model B1 also had a poor fit $\chi^2 (df = 6) = 24.650, p = .000, RFI = .535, RMSEA = .120$, and nonsignificant relationship between enough information and trust. In contrast, when *enough information* was removed Model B2 had a strong fit $\chi^2 (df = 3) = 5.197, p = .158, RFI = .846$, and $RMSEA = .058$. This model also disconfirmed Hypothesis 2 and supported Hypotheses 5 and 6.

Finally, we prepared a SEM showing the effects of top management quality of information, enough information, trust of top management, and

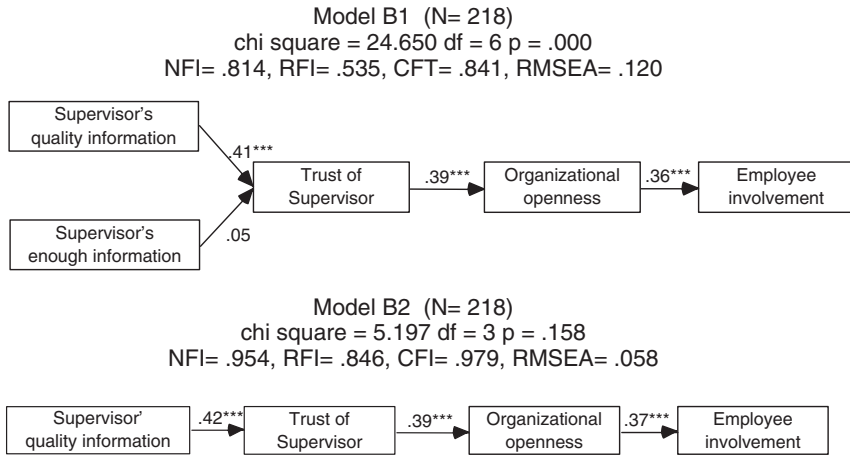


Figure 3. AMOS Structural Equation Model for the Effects of Perceived Supervisor Quality of Information and Trust of Experienced Organizational Openness and Employee Involvement

organizational openness on involvement (see Figure 4, Model C1). This model had a weak fit to the underlying data $\chi^2 (df = 6) = 17.509, p = .008$, RFI = .612, and RMSEA = .094. After removing *enough information*, the model still had a weak fit $\chi^2 (df = 3) = 7.870, p = .049$, RFI = .709, and RMSEA = .086. See Figure 4, Model C2. When we removed *quality of information* from Model C1, the model had an excellent fit (see Figure 4, Model C3), $\chi^2 (df = 3) = 4.579, p = .205$, RFI = .802, and RMSEA = .049. This indicates that Hypothesis 2, predicting a relationship between top management provision of enough information and top management trust, is supported and Hypotheses 5 and 6 about the relationships among variables are again supported.

DISCUSSION

Trust has gained wide acceptance in the literature as a means for improving individual, group and organizational performance. Nevertheless, there is scarce empirical evidence that demonstrates how trust might be built in an organization (Mayer & Davis, 1999). This study provides

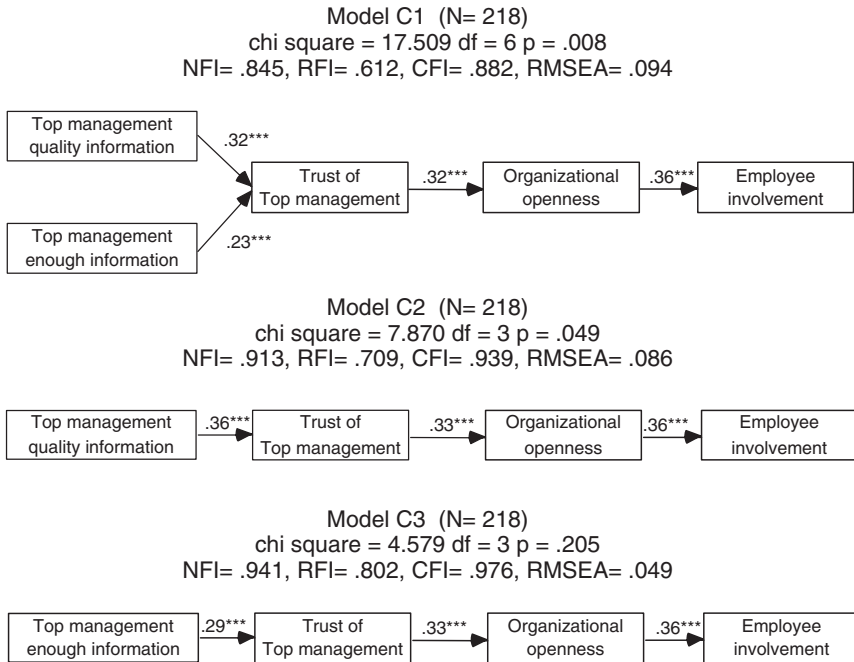


Figure 4. AMOS Structural Equation Model for the Effects of Perceived Top Management Quality of Information and Experienced Organizational Openness and Employee Involvement

evidence of specific linkages among communication, trust, organizational openness, and employee involvement providing a path for understanding how managers might develop trust to achieve organizational goals, such as increased employee involvement.

This study examined the relative effects of quantity and quality of information. The results of this study would seem to indicate that their relative effects depend on context. Quality of information is more salient than amount or adequacy of information as it relates to trust of coworkers and trust of supervisors. In other words, when employees perceive that they are getting information from their supervisors and coworkers that is timely, accurate, and relevant, they are more likely to feel less vulnerable and more able to rely on their coworkers and supervisors. Conversely, when employees believe they are receiving information that is inaccurate,

irrelevant, or untimely, it is likely they will become more guarded and less trusting.

Trust has gained wide acceptance in the literature as a means for improving individual, group and organizational performance.

In contrast, when we look at trust in top management, our findings indicate that adequacy of information is more salient than quality of information. Our interpretation of this finding involves the role of top management in setting direction, shaping purpose, and overseeing general organizational processes. Information coming from top management is seldom specific to an individual's job and is generally focused on the big picture. Top management depends on supervisors to translate this abstract information into more task-related, relevant communication. While employees count on top management to set the strategy and determine criteria for organizational success, then, supervisors must be trusted to show workers the connection between employees' jobs and the organization's goals and to provide the more specific, high-quality information needed to perform their jobs well. Coworkers, likewise, are depended on for high-quality information needed for job execution.

Organizational openness was the second element of communication in this study. While quality of information seems to be a prerequisite for trust in coworkers and superiors, it is trust that appears to shape the perceptions of communication openness, which, in turn, predicts an employee's involvement in the organization. So when we attempt to predict one's level of involvement, it would seem that openness is a key factor. Thus, when employees believe that the organization is a safe place to express themselves, they are likely to see themselves as more involved in the organization's goals.

In sum, this study suggests that the relationship between communication and trust is complex, and that simple strategies focusing on either quality or quantity of information may be ineffective for dealing with all members in an organization.

LIMITATIONS

ICA's survey offers both advantages and disadvantages. On the positive side, communication audits are valuable diagnostic tools that have received renewed attention (Downs & Adrian, 2004; Hargie & Tourish, 2000). Downs and Adrian (2004) state that "Audits are one of the best research tools to help develop theories about how organizations work" (p. 18). We believe that this study does just that. Using the well-known survey tool, we have demonstrated how the notion of trust is related to communication. We believe that this is useful because it allows those who use the audit to focus on ways that trust might be better enhanced.

The use of the tool is also disadvantageous in that it does not use more modern, sophisticated measures to identify the relationships among trust, communication, and involvement. As trust has become more prominent in the management literature, more sophisticated measures of trust have been developed. Likewise, more complex measures of communication and involvement might have been used to test the relationships. Future research could triangulate the simple measures used in the ICA Communication Audit with the more commonly used measures of trust, communication, and involvement.

On balance, though, the authors view the use of the audit as a strength because of its practical and valuable use in organizations. While other measures might be more statistically robust, this tool provides versatility.

Additional limitations of the study include the use of a single organization. As we mentioned earlier, this study was designed as a proof of concept. Other studies should be conducted to see if our findings about the relationship between trust and communication can be replicated.

Two final limitations included the nature of the sample and the single-item outcome variable. The sample was a convenience sample, chosen by the human resource department of the participating organization. Based on personal e-mails with the sponsor of the study, we know that the participants were disproportionately drawn from headquarters and the research and development department; thus, the sample was not systematically chosen to match the demographics of the larger organization. The single-item measure for the outcome variable was a limitation of the ICA diagnostic survey. Future studies might consider the use of additional questions to strengthen the measurement of the outcome variable.

MANAGERIAL IMPLICATIONS

This study tests the issue of quality versus quantity of information in the development of employee trust toward coworkers, supervisors, and top management. We found that quality of information was more important in communications with coworkers and supervisors, but that quantity of information was more important with top management. We also tested the ordering of variables in our model. We have shown that the order of variables in our model holds up. Quality or quantity of information influences trust, which creates the perception of organizational openness and greater employee involvement.

Despite the importance of this topic, the current literature provides little guidance for managers on how to use communication as a means to increasing levels of trust. This study shows that to increase trust among coworkers and supervisors, it is important that information be timely, accurate, and useful. This priority is likely to require a diagnosis of the firm's ability to deliver what employees perceive to be high-quality information. If employees do not believe that they are receiving high-quality information, why not? What information do they need? Is the information they get accurate and useful? Are employees getting information when they need it from their supervisors and their coworkers? Are the right people linked appropriately to one another to facilitate organizational tasks? How do norms, incentives, and technology facilitate or hinder the delivery of quality information?

In contrast, when considering information from top management, our results suggest that one should determine whether the organization is simply providing enough information. Previous studies have shown that when employees are asked about the information they receive from top management, they generally think about organizational processes when determining their trust in top management (Carnevale, 1988). Trust in top managers is more impersonal and less dyadic. It is generally based less on direct observation and more on decision outcomes made by top managers. Trust is more often determined by the perceived efficiency and fairness of larger organizational systems, such as performance appraisal systems, professional development opportunities, job security, and the reward system than on the specific personal characteristics or behaviors of the top managers (McCauley & Kuhnert, 1992). We also know that trust in top management is closely associated with overall job satisfaction (Driscoll, 1978) and an employee's attitude toward continued involvement in his or her organization (Costigan, Ilter, & Berman, 1998). Thus, when considering the relationship between communication and trust in top management,

one might assess the perception of adequacy of information from top management. If the level appears inadequate, one might attempt to determine why that perception exists.

Quality or quantity of information influences trust, which creates the perception of organizational openness and greater employee involvement.

CONCLUSION

The relationship between communication and trust is context related and interconnected, which makes it difficult to tease apart. We found that in the relationships with coworkers and supervisors, it is quality, not quantity, of information that best predicts trust. In contrast, in the relationship with top management it is the quantity, rather than quality of information, that is significant. In all cases, trust was very closely tied to perceptions of organizational openness, which, in turn, predicted employee involvement. This study extends the use of the ICA communication audit to the study of trust. Future research is needed to triangulate the simple measures used in the audit to the more commonly used scales of trust, organizational openness, and involvement.

APPENDIX

Description of Measures

CFI	Comparative fit index. The comparative fit index (CFI; Bentler, 1990) compares the fit of an AMOS model to a baseline model. CFI values close to 1 indicate a very good fit
NFI	Normed fit index. The Bentler and Bonnet (1980) normed fit index measures the fit of an AMOS model. A NFI of 966 means that the model has a discrepancy of 96.6% of the way between the (terrible fitting) independence model and the (perfectly fitting) saturated model. “. . . models with overall fit indices of less than .9 can usually be improved substantially” (Bentler & Bonnet, 1980, p. 600)
<i>p</i>	<i>p</i> is the probability that the null hypothesis, the model does not fit, is correct. In other words, when testing model fit, a <i>p</i> value of .05 means that there is 5% chance that the variables are not related

(continued)

APPENDIX (continued)

RFI	Relative fit index. Bollen's (1986) relative fit index compares the fit of an AMOS model to a baseline model. RFI values close to 1 indicate a very good fit. Byrne (2001) reports that a value $>.95$ in the RFI indicates superior fit
RMSEA	Root mean square error of approximation. Unlike other measures of fit for AMOS models that tend to favor models with many parameters, RMSEA is an index of model fit that compensates for the effect of model complexity. "Practical experience has made us feel that a value of RMSEA of about .05 or less would indicate a close fit of the model in relation to the degrees of freedom . . . We are also of the opinion that a value of about 0.08 or less for the RMSEA would indicate a reasonable error of approximation and would not want to employ a model with a RMSEA greater than 0.01" (Brown & Cudeck, 1983)

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