Journal of Communication Management



Investigating the Convergent Validity of Organizational Trust

Journal:	Journal of Communication Management
Manuscript ID:	JCOM-Jul-2010-0040.R2
Manuscript Type:	Original Article
Keywords:	organizational trust, construct validity, organizational identification, convergent validity, Public relations, Organizational behaviour

SCHOLARONE™ Manuscripts

RUNNING HEAD: CONVERGENT VALIDITY OF TRUST

Abstract

Purpose: Organizational trust is an important construct for organizational and public relations scholars and practitioners for its influence on key organizational outcomes yet the convergent validity of organizational trust instruments has not been investigated by any study.

Design/Methodology/Analyses: IRB approval was obtained for a cross sectional study design gathering self-reports from participants through an online data gathering system of a large Midwestern university in the USA. Correlational matrices along with exploratory and confirmatory factor analyses adapting the multitrait-multimethod matrix were employed for data analysis (Campbell and Fiske, 1959).

Findings: The three trust measures demonstrate mixed evidence of convergent validity with each other and with a theoretically correlated construct, organizational identification demonstrating that while the three measures share the same conceptual ground, there is a need to clarify their underlying theoretical specification, especially with respect to organizational identification.

Research Limitations/Implications: Future large scale studies can extend the findings based on a student population by employing multiple and diverse data sets as well as investigate method variance.

Practical Implications: Recommendations to improve convergent validity include: (a) increasing item parsimony to decrease redundancy, (b) revise item construction, and (c) improved theoretical specification investigating the conceptual boundaries organizational identification with trust.

Originality/Value: The study provides empirical evidence for the need for greater conceptual and operational clarification of the theoretical bases of trust. It is the first to advance research on trust in organizations by providing empirical support for the convergent validity of organizational trust measures assessed from organizational, interpersonal, and public relations perspectives.

Keywords: construct validity, convergent validity, discriminant validity, organizational trust, organizational identification

Investigating the Convergent Validity of Organizational Trust

Organizational trust is of increasing interest to scholars for its positive influence on organizational and member outcomes including organizational effectiveness, job satisfaction, and team performance (Argyris, 1962; Coleman, 1990; Rousseau, Sitkin, Burt, and Camerer, 1998; Tannenbaum, Beard, and Salas, 1992). Recent scholarly interest in trust has led to a diversity of theoretical perspectives in trust research (McAllister, 1995). For example, trust research can be categorized by level of analysis ranging from micro-level interpersonal approaches examining individual dispositions (Rotter, 1967, 1971, 1980), socio-psychological approaches examining environmental factors (Bhattacharya, Devinney, and Pillutla, 1998; Lewicki and Bunker, 1995), to macro-level institutional approaches examining uncertainty in societal interactions (Zucker, 1986) and trust. Trust research can also be categorized as antecedent-based research and outcome-based research. For example, researchers examining the antecedents of trust-based beliefs may take a calculus-based approach, knowledge-based approach, or an identification-based approach to explain the development of the feelings, attitudes, and beliefs that characterize it (Jones and George, 1998).

Measures of trust in organizational scholarship evaluate trust in a variety of organizational contexts such as dyadic manager-employee interaction (Organizational Trust Inventory, OTI, Cummings and Bromily, 1996) or trust in virtual teams (Jarvenpaa, Knoll and Leidner, 1998). However, despite the development of measures of trust in the literature, the construct validity of key instruments employed to measure organizational trust has not been assessed by any study. Assessing the validity and reliability of measurements of organizational trust is important, first, because it confirms that the instrument is theoretically grounded and its operationalization is credible for the interpretation of research goals and findings. Second, invalid measurements can confound the goals of future research and interpretations which in turn, obscures our understanding of the trust in organizations. Third, investigating the construct validity of organizational trust is important because much of current trust research has employed variable-based self-reports to investigate trust in organizational relationships. In essence, establishing the construct validity of a measure involves demonstrating the convergent validity and the discriminant validity of the measure. The present study addresses an important gap in the literature by reporting the results of a systematic investigation of the convergent validity of three

organizational trust measures taking an interpersonal, public relations, and organizational approach to trust in organizations respectively. These measures were: (a) Cook and Wall's (1980) interpersonal trust in management, (b) Hon and Grunig's (1999) organizational trust, and (c) Ellis and Shockley-Zalabak's (2001) trust in top management.

This paper is organized as follows. The first section provides a theoretical overview of the construct of organizational trust and establishes the dimensions of the theoretical relationships operationalized by the three instruments. Following this, in the second section, the construct of organizational identification and its relationship with organizational trust is explicated. The third section explains the theoretical bases of construct validity and the methods employed to investigate convergent validity. Fourth, and finally, the hypotheses tested in the study are laid out followed by the methods, analysis, results, and discussion sections.

1. Trust in Organizational Contexts

Trust in organizations is distinct in nature from other contexts (e.g., trust in dating relationships, Larzelere and Huston, 1980). Organizational trust has been approached from a variety of perspectives. For example, from a psychological perspective, Rotter (1967) defines trust as "a generalized expectancy held by an individual or group that the word, promise, verbal, or written statement of another individual or group can be relied upon" (p. 444). Social psychologists take a state-based view of trust as "the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other party will perform a particular action important to the trustor, irrespective of the ability to monitor or control the party" (Mayer, Davis, and Schoorman, 1995, p. 712). Economists (such as Dasgupta, 1988) adopt a calculusbased cost-benefit approach to trust as regulating fair behavior. Bhattacharya, et al. (1998) integrate micro- and macro-approaches and define trust as "an expectancy of positive (or nonnegative) outcomes that one can receive based on the expected action of another party in an interaction characterized by uncertainty" (p. 462). A common theme underlying all dominant approaches in trust research is an agreement on the antecedent conditions necessary for trustbased behavioral orientations to arise. These are: (a) a risk-based context characterized by uncertainty and vulnerability, (b) an interdependence between two parties in that communicative context, and, (c) a shared goal (Bhattacharya et al., 1998; Lewicki and Bunker, 1995).

A state-based definition of trust in organizations is distinct from an interpersonal view of trust (Rotter, 1967) and from an economical, transaction-based trust (Das and Teng, 1998) in two key ways. First, a state-based definition of organizational trust specifies the boundary condition as the relationship between the trustor and the trustee, and second, it examines the influence of the organizational context on the development of trust (Mayer *et al.*, 1995). Rousseau *et al.* (1998) provide a cross-disciplinary definition of state-based trust as a "psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behavior of another" (p. 395) integrates most trust-based theorizing in organizational contexts (e.g., Ellis and Shockley-Zalabak, 2001; Mayer *et al.*, 1995).

The sub sections below focus on organizational trust and review the three main approaches taken by researchers in organizational contexts: (a) interpersonal trust in top management, (b) trust in top management as a relationship outcome from public relations perspective, and (c) trust in top management from organizational communication perspective.

1.1. Interpersonal Trust in Top Management

Interpersonal approaches examine trust as a belief or an attitude that is influenced by the characteristics of both the communicative interactions and the context (Rotter Interpersonal Trust Scale, 1967; Rotter, 1980; Whitener, Brodt, Korsgaard, & Werner, 1998). Interpersonal trust is categorized along two dimensions—cognitive dimension (perception of integrity or capability of the trustor) and affective dimension (perception of concern, care, or benevolence of the trustor toward the trustee, McAllister, 1995). Cook and Wall (1980) take an interpersonal approach to conceptualize individual-level employee trust in top management.

In their measure, Cook and Wall (1980) examine trust at work to measure trust as a "directly experienced evaluative or affective reaction" (p. 40) between the trustor and the trustee. Their study provides evidence for the stability of its psychometric properties in blue collar UK-based employees (Cook and Wall, 1980). The two main dimensions in Cook and Wall's (1980) scale are: (a) faith in trustworthy intentions of the trustor, and (b) confidence in the ability of the trustor. The study also finds that employee trust in management (faith in management and confidence in management) is strongly associated with organizational commitment.

1.2. Organizational Trust in Public Relations

On the other hand, trust in public relations has been conceptualized as an outcome-based variable characterizing the relationship between two key organizational publics: organizational members and management. Hon and Grunig's (1999) measure of organizational trust is conceptually grounded in the public relations theoretical perspective. It conceptualizes organizational members as strategic publics in a two-way relationship with the management toward the goal of achieving mutually beneficial individual and organizational outcomes. Trust in the organization is one of the six relationship outcome measures (including control mutuality, satisfaction, commitment, exchange relationship, and communal relationship) proposed by Hon and Grunig (1999) to measure the strength of the relationship between organizations and their publics. The organizational trust scale employed by Hon and Grunig (1999) consists of three constructs similar to the dimensions employed by Ellis and Shockley-Zalabak (2001) and to the managerial trustworthy behaviors (MTB) characteristics employed by Cook and Wall (1980) because it also identifies the key behavioral characteristics of the organization that lead to the development of evaluative trust-based beliefs in the publics.

The three dimensions of Hon and Grunig's (1999) scale are: (a) integrity, the belief that the organization is fair and just, (b) dependability, the belief that an organization will do what it says it will do, and (c) competence, the belief that an organization has the ability to do what it says it will do. Respondents chose a number from one to nine to indicate the extent to which they agree that the item described their relationship with the organization. The reliabilities for the 11 item trust scale reported in the original study were: alpha = .90 (GE), .89 (NRA), .93 (Social Security), .91 (Microsoft), .91 (Red Cross) (with an average alpha= .91).

1.3. Trust in Top Management in Organizational Communication

Ellis and Shockley-Zalabak (2001) take the approach that organizational trust is "communication-based, dynamic, multi-faceted" (p. 383). Ellis and Shockley-Zalabak (2001) define trust in top management or organization as "positive expectations about the behavior of others based on roles, relationships, experiences, and interdependencies" (p. 383). Theoretically, the development of the Ellis and Shockley-Zalabak (2001) scale was guided by Mishra's (1996) model identifying the four dimensions of trust as: (a) competence in organizational leadership and organization (Gabarro, 1987), (b) openness, honesty, and sincerity in communication (Whitener *et al.*, 1998), (c) leadership caring and concern of organizational members (Cummings

and Bromiley, 1996), and (d) reliability or an expectation of consistency, dependability, and congruency between word and action of behavior in leadership (McGregor, 1967). The trust in top management scale developed by Ellis and Shockley-Zalabak (2001) lays greater emphasis on the role of communication in the "development and maintenance of trust in top management" (Ellis and Shockley-Zalabak, 2001, p. 385) and was developed through focus groups held in U.S. and Italy utilizing the critical incident technique. The main dimensions of trust extracted included: consistency in actions, following through with stated intentions, dependability/ reliability, sincerity, keeping confidences, avoiding gossip, using direct eye contact, avoiding retaliation, standing up for others, and engaging in open, honest discussion. The confirmatory factor analysis reported by the authors in the study demonstrates excellent model fit (χ^2 (8) = 7.51, *NNFI*= .99, *CFI*= .99, *GFI*= .99). Finally, the study reports a high internal reliability (alpha = .94, M = 2.74, SD = 1.04) (Ellis and Shockley-Zalabak, 2001).

Although the three measures of trust in organizational contexts have taken different approaches in constructing their operationalizations, there are several important ways in which they are similar. For instance, Mishra's (1996) model conceptualizing trustworthiness that Ellis and Shockley-Zalabak (2001) draw upon for constructing their measure is parallel in key ways to Cook and Wall's (1980) conceptualization. To illustrate, competence in Mishra's (1996) model and ability in Cook and Wall's (1980) model share the same conceptual ground. Similarly, the factor of caring and benevolence in interpersonal trust (McAllister, 1995) is similar to that of concern (Mishra, 1996) and the factor of *integrity* in trustee behavior (Hon and Grunig, 1999) is related to reliability as adopted by Mishra (1996) and later by Ellis and Shockley-Zalabak (2001). The model of dyadic trust in organizational contexts adopted by Cook and Wall (1980) is also similar to that followed by Ellis and Shockley-Zalabak (2001) in examining the employee perception of the intentions and confidence of the behaviors (words and actions) of the management. Thus while each measure is based on different approaches, in several key ways the structure of Ellis and Shockley-Zalabak's (2001) dimensions is conceptually similar to the dimensions employed by Hon and Grunig (1999), and those by Cook and Wall (1980). We should, therefore, expect to see a high degree of positive correlation between the three measures of organizational trust. The next section discusses the construct of organizational identification and explicates its relationship with organizational trust.

CONVERGENT VALIDITY OF TRUST

2. Organizational Identification

Organizational identification is defined as the process by which individuals link themselves to the targets of their identification (Cheney, 1983), in this case, organizations. It has been argued that organizations constitute a natural target for the identification process of individuals as they fulfill a fundamental need to identify in human relations (Burke, 1950; Cheney, 1983). The process of member identification has been found to be closely related to organizational activities such as socialization, communication, and personnel selection (Lee, 1971; March and Simon, 1958). From a critical organizational perspective, the relationship building process of identification also fulfills the function of communicating and managing the value premises and decisional premises of the organization (Bullis and Bach, 199; Cheney, 1983; Cheney and Tompkins, 1987; Tompkins and Cheney, 1983). In their original study providing a measure of organizational identification, Cheney (1983) reported an excellent reliability of alpha = .95 and a single factor solution accounting for 86% of the variance.

Trust in organizations and organizational identification both imply alignment with key organizational premises. However, inherent in the conceptual definition of trust is an assumption that trust is more than just an attitude or belief or expectation of the trustor toward the trustee, such that it also exists in the relationship between the two (Whitener *et al.*, 1998). Shockley-Zalabak *et al.* (2001) note that when organizational trust is approached as an "aggregate across employees, partnerships, stockholders, customers, and other stakeholders, [the] generalized expectations about intent and behaviors become part of the cultural context of the organization" (p. 37). Other studies provide indirect support to the hypothesis that organizational trust should be positively associated with organizational identification. For example, studies examining the relationship between MTBs and organizational factors find organizational attributes such as culture and structure, where culture is defined as "the set of shared, taken-for-granted implicit assumptions that a group holds" (Schein, 1996, p. 236) also influence the perception of MTBs (Creed and Miles, 1996; Hardin, 2000; Rousseau, 1990). Viewed in this manner, member identification with the cultural values, norms, and decisional premises of the organization and should be strongly associated with the trustworthy perceptions of that target.

Organizational identification has also been closely associated with organizational trust. Researchers examining the antecedents of trust note that organizational trust is composed of

 three dimensions based on the relative strength of the premises characterizing its emergence: (a) exchange-based trust (economical, cost-benefit analysis), (b) knowledge-based trust (on the predictability or confidence in another's behavioral orientations), or (c) identification-based trust (through internalization of the other's motives and intentions). In its identification-based dimension, organizational trust arises between members and the organization through the act of identification with or internalization of the organization's motives, values, or decisional premises, suggesting again that organizational trust and organizational identification should be strongly correlated. While trust research has yet to establish the mechanisms through which knowledge-based, exchange-based, and identification based trust related to other organizational processes such as organizational identification, Ellis and Shockley-Zalabak (2001) find that organizational identification of members should be strongly associated with organizational trust (Ellis and Shockley-Zalabak, 2001). They suggest that organizational identification could comprise a dimension of organizational trust. The present study extends this line of research by empirically testing the hypothesis that organizational trust should be positively and strongly associated with organizational identification.

3. Theoretical Bases of Construct Validity

Theoretically, a construct (such as organizational trust), is defined as "a postulated attribute of people assumed to be reflected in test performance" (Cronbach and Meehl, 1955, p. 283). In this regard, a construct (as an attribute or trait such as trusting intentions) carries associated meanings that describe its observable properties. The logic of construct validation involves reaching informed interpretations of its test to validate these accurately reflect the meaning underlying the construct. Thus a test of construct validity of organizational trust should provide a method for assessing the theoretically defined meanings of the construct are measured through its operationalization. In general, construct validation includes strategies estimating the internal process, structure, or state to determine the validity and reliability of the measurements. Essential to the construct validation process is defining the interlocking net of laws known as the nomological network (Cronbach and Meehl, 1955). These laws relate: "(a) observable properties of the construct, (b) theoretical constructs to observables, or (c) different theoretical constructs to one another" (Cronbach and Meehl, 1955, p. 290). If a construct is to be scientifically admissible, it should occur in a nomological net of testable theoretically-based relationships.

CONVERGENT VALIDITY OF TRUST

Construct validity of trust is established when the researcher can generalize what is observed to the underlying theoretical concept of the measures. Validation procedures for establishing construct validity are theoretically based and include establishing the convergent validity and discriminant validity of the measure. Overall, procedures to establish construct validity include: (a) tests that the correlational matrices between the three organizational trust measures are associated as expected, (b) examining the internal factor structure of the organizational trust measures for interpretability, and (c) tests confirming the theoretically based relationship between organizational trust and organizational identification is obtained as expected to demonstrate the convergent validity of the measures (Cronbach and Meehl, 1955).

Hypothesis 1: The trust measure (Hon and Grunig, 1999) will demonstrate a positive relationship between trust scores with trust in top management (Ellis and Shockley-Zalabak, 2001) and interpersonal trust in top management (Cook and Wall, 1980).

Hypothesis 2a: The organizational trust measures will show similar and comparative positive and significant association with Cheney's (1983) organizational identification.

Hypothesis 2b: The internal validity score of organizational trust (Hon and Grunig, 1999) measure will be similar to the internal validity score of Ellis and Shockley-Zalabak (2001) and to the interpersonal trust in top management (Cook and Wall, 1980).

4. Method

4.1. The study participants (N = 109) were undergraduate students (97.2% of study participants reported their age as between 18-25yrs, 81% reported ethnicity as Caucasian, 48% worked for small business, and 47% of participants reported working between 6 months to 2 yrs. at the time of taking the survey). Study participants had the option to voluntarily sign up for participation after reading the study description for extra credit at a large Midwestern university. In the study description potential participants were informed that they would be asked about "trust and commitment in your organization or place of work, or management at your job or internship position." The research was approved by the institutional review board of the university and survey data was collected electronically in spring 2009 through a Qualtrics online data gathering system hosted on the university servers.

4.2. Measures

The internal factor structure of the three measures was examined using factor analyses employing principal components analysis with varimax rotation as described below.

4.2. i. Trust in Top Management (Organizational Trust) and Trust in Immediate Supervisor (Managerial Trust)—**Ellis and Shockley-Zalabak (2001).** Ellis and Shockley-Zalabak's (2001) behavior-based measure assessed the extent to which top management demonstrates behaviors that exemplify trust. As can be seen from Table 1, examining the underlying dimensionality of the scale by factor analyses employing principal components with varimax rotation obtained one factor with Eigenvalues greater than 1.0 explaining 67.24% of the variance (Eigenvalue= 4.03; Table 1). The scale reliability with 6 items in the present study was high (alpha = .90 for items in trust in top management, M = 3.56, SD = .80, range: 3.41—3.81).

4.2. ii. Organizational Trust—Hon and Grunig (1999). Factor analyses employing principal components analysis with varimax rotation revealed three underlying dimensions with Eigenvalues greater than 1 and explaining a total variance of 69.14%. The organizational trust scale employed by Hon and Grunig (1999) consisted of the three dimensions of integrity, dependability, and competence. Two items were dropped from this scale: (1) "I think it is important to watch this organization closely so that it does not take advantage of people like me" (recoded)—loaded on factor 3, and (2) "This organization is known to be successful at the things it tries to do"—because it cross loaded on factors 1 and 2. The internal reliability of the remaining 9 items was good (alpha = .89, M = 3.57, SD = .89, range: 3.28—3.93) (Table 2).

4.2. iii. Interpersonal Trust in Top Management—Cook and Wall (1980). The Cook and Wall (1980) scale develops instruments relevant to multivariate research into the quality of working life and conceptualizes trust as the extent to which one is willing to ascribe good intentions to and have confidence in the words and actions of other people. This scale examines trust along two different dimensions: faith in trustworthy intentions of others, and confidence in ability of others (management). As Table 3 shows, the internal reliability of trust in management is good (alpha=.84, M=3.64, SD=.71, range=3.54-3.74) and with two factors with Eigenvalues greater than 1 explaining a total variance of 71.13% (Table 3). Upon conducting exploratory factor analyses, all items with factor loadings above .70 were retained and loaded on factor

CONVERGENT VALIDITY OF TRUST

1. One item loaded on factor 2 and was dropped ("our management would be quite prepared to gain advantage by deceiving the members"; recoded, loaded on factor 2; Table 3).

4.2. iv. Organizational Identification (Cheney, 1983). Exploratory factor analysis with principal components with varimax rotation obtained five factors with Eigenvalues greater than 1 and explaining a total of 64.83% of the variance. Examining the underlying dimensionality of the items, all of the items loaded on factor 1 with the exception of the following items which were dropped from the final measure because of cross loading on multiple dimensions or loading on a different factor: "I often describe myself to others by saying "I work for the organization" or "I am from the organization"; "I try to make on-the-job decisions by considering the consequences of my actions for the organization; "I find it difficult to agree with the organization's policies relating to me" (recoded); "My association with the organization is only a small part of who I am" (recoded); "I feel very little loyalty to the organization" (recoded). The internal reliability of the final measure comprising 20 items was excellent at alpha = .94 (M= 3.281, SD = 1.01, range = 2.23-3.62; scale from Rubin *et al.*, 1994).

5. Convergent Validity Analysis

Campbell and Fiske (1959) propose the MTMM matrix offering a set of criteria for validating measurements including: (a) confirmation of validation of the measurements by independent measurement procedures, (b) conducting discriminant validation as well as convergent validation to establish high correlations with similar tests and low correlations with those with which the measures are intended to be conceptually distinct, (c) conducting tests as a trait-method unit or "a union of a particular trait content with measurement procedures not specific to that content" (Campbell and Fiske, 1959, p. 81), and, (d) employing more than one trait and more than one method in the discriminant validation process.

The MTMM matrix essentially measures all the correlations of the different traits when measured with different methods. Convergent validity is established when measures that are conceptually correlated are demonstrated to be so (as for example organizational trust and organizational identification). Per the MTMM matrix, in order to establish convergent validity, the validity diagonal should meet two criteria: (a) it should be large and different from zero, and, (b) it should be higher than the correlations obtained between that variable having neither the

trait nor the method in common. In other words, if the measure is assessed with respect to a similar construct (within construct correlations) and with respect to a conceptually distinct construct (cross construct correlations), the within construct correlations should be high and the cross construct correlations should be low. In accordance with the MTMM (Campbell and Fiske, 1959) matrix, convergent validity of the organizational trust scale was assessed following the principle that measures of theoretically similar constructs should be highly intercorrelated. In order to assess convergent validity: (a) the strength of inter-item correlations within scale were examined, and (b) cross construct correlations across trust in top management trust scales and a theoretically correlated construct, identification, was assessed.

Preliminary analyses examining the dimensionality of the organizational trust scales using principal-components analysis (PCA) in order to examine the underlying factor structure and validity were conducted prior to examining the MTMM matrix. Exploratory factor analyses were conducted using principal components analyses (PCAs) with unrotated factor solution and varimax rotation. Factors with Eigenvalues greater than 1.0 were retained and primary factor loadings greater than .65 with secondary loadings no greater than .45. Items that did not load satisfactorily or cross loaded were dropped. Items that were retained in the final measures are marked with boldface and those that were dropped are italicized (Tables 1, 2, and 3). Confirmatory factor analyses (CFA) (Bollen, 1989, Kline, 2004) were conducted with the remaining items to assess factor structure and validity with the retained items. The first set of CFAs assessed a measurement model comprising the unidimensional Hon and Grunig (1999) organizational trust scale, the Ellis and Shockley-Zalabak (2001) scale and the Cook and Wall (1980) scale. The second CFA assessed model fit of the trust and identification measure.

6. Results

The hypotheses proposed predicted that if the Hon and Grunig (1999) organizational trust measure from the public relations literature is a valid construct, we would expect to see: (a) a positive associational relationship between organizational trust scores with the organizational communication literature (Hypothesis 1). Further (b), we would also expect to see positive correlations with the organizational identification scale similar in strength and direction with those obtained from correlations with the other organizational communication trust scales (Hypothesis 2a; Cook and Wall, 1980; Ellis and Shockley-Zalabak, 2001) and (c) the internal

 reliability of the Hon and Grunig (1999) scale will be comparable to that of the other two measures of trust in top management (Hypothesis 2b).

Hypothesis 1 was tested through Pearson moment correlations with the trust (Hon and Grunig, 1999) scale and the trust in top management (Ellis and Shockley-Zalabak, 2001) and the trust in management (Cook and Wall, 1980) scale. The results provide strong support for this assertion: the correlation between trust scale (Hon and Grunig, 1999) and Ellis and Shockley-Zalabak (2001) were strong, positive, and significant (r = .82, p < .001, Table 4). Similarly theoretically, we would expect a positive relationship between subject scores on the Hon and Grunig (1999) trust scale and the ratings of Cook and Wall (1980) trust scale. Again, results provide strong support for this assertion as well (r = .80, p < .001). As the goodness of fit indices reported in Table 5 show, the measurement model CFA indicated a mixed fit for the correlated Hon and Grunig, Ellis and Shockley-Zalabak, and Cook and Wall scale. While modification indices achieved an excellent model fit to the observed data, upon testing alternative measurement models correlating the Hon and Grunig scale with the Cook and Wall scale and with the Ellis and Shockley-Zalabak scale, a mixed fit was obtained again (Table 5).

Hypothesis 2a was tested through Pearson moment correlations with the Hon and Grunig measure and Cheney's organizational identification measure. As expected, the association was strong, positive, and significant (r= .66, p < .001; Table 4). This result was in congruence with the associations between the Ellis and Shockley-Zalabak (2001) trust in top management scale and Cheney's organizational identification scale (r= .53, p < .001) as well as with the Cook and Wall (1980) trust in management scale and Cheney's organizational identification scale (r= .70, p < .001; Table 4). However the CFA measurement model indicated a marginally adequate fit for the model correlating all three trust measures (see Table 5 for goodness-of-fit indices). Following Ellis and Shockley-Zalabak's study finding close conceptual association of organizational identification and organizational trust, an alternative model was tested combining organizational identification and Ellis and Shockley-Zalabak measures and correlated with Hon and Grunig's measure which resulted in a decreased model fit (Table 5) suggesting that specifying organizational identification as a separate latent variable had a marginally better fit to the data.

As can be seen from Table 4, hypothesis 2b was supported. The internal reliability after revising on the basis of the exploratory factor analyses of the Hon and Grunig (1999)

organizational trust scale was satisfactory (alpha= .89; N= 108) and compared favorably to the other two measures of trust in top management: (a) the Cook and Wall organizational trust alpha was .84 (N= 108), and the Ellis and Shockley-Zalabak alpha was .90 (N= 108) indicating excellent internal consistency (Nunnally, 1978). Scores on the organizational trust measure from Hon and Grunig (1999) ranged from 3.28 to 3.93 with a mean score of 3.52 (SD= .63). This score would appear to be comparable to a mean score of 3.56(SD= .80) on the Ellis and Shockley-Zalabak (2001) trust in top management scale and 3.64(SD= .71) on the Cook and Wall (1980) trust in top management scale. The scales have an expected range and appear to be able to capture individual variability well for an undergraduate student sample.

7. Discussion

The present study is among the first to assess the construct validity of organizational trust measures from three perspectives: organizational communication, public relations, and interpersonal communication at work. The study findings provide mixed evidence for the convergent validity of the three measures of organizational trust. Convergent validity was tested through theoretically based within-construct and cross-construct correlations. Strong Pearson Moment correlations between the three organizational trust self-report scales suggest that the three measurements are highly associated. While the marginally adequate fit of the measurement model indicates that the error variances of the three trust measures might be correlated.

Second, Pearson correlations indicate the three trust measures also correlate significantly and positively with a related construct, identification. Again, CFA analyses of the measurement model demonstrated mixed goodness of fit statistics ranging from marginally adequate to acceptable to the data. The test of an alternative model with the identification indicators modeled on the Ellis and Shockley-Zalabak (2001) trust scale and correlated with Hon and Grunig's (1999) scale did not result in an improved model fit. In support of the hypothesis, all three trust measures rely upon an understanding of trust as an individual behavior-based orientation and demonstrate comparable and excellent internal consistency and homogeneity of variances as seen through the reliabilities obtained in the study. Further, the strength of the Pearson moment correlations supports the assertion that the measures are conceptually reflective of same theoretical base and provide a degree of confidence in the convergent validity of the measure.

In other words, as hypothesized, although the measures take different approaches (ranging from interpersonal trust at work to a public relations perspective), the underlying assumptions of trust are measuring the same dimensions of organizational trust. In this context, one possibility explaining the mediocre model fit obtained by the CFAs could be the correlated error variances as demonstrated by the modification indices needed to obtain good model fit of the CFA measurement model. A potential cause of the measurement error in the three measures of trust could be methods bias caused by study participants responding consistently higher or lower on the self-reports. This could be due to participants' perception of social desirability of the response or an underlying redundancy of the items (Kline, 2004). The study results suggest that the assessment of organizational trust measures through only self-reports runs a high risk of measurement error due to systematic methods bias.

While the strong associations between the three measures suggest they are measuring the same underlying concept, the study findings suggest the need for greater conceptual clarification of the theoretical bases of trust. The correlations between trust and identification assume that all measurement error terms are zero. As the study demonstrates, both measurement models correlating identification with the three trust measures and modeling identification as part of organizational trust (Ellis and Shockley-Zalabak's measure) and correlated with Hon and Grunig's (1999) measure were tested and provided good support for the convergent validity of the organizational trust measures. Cheney (1983) suggests that organizational identification is an essential part of the process whereby members adopt the underlying value premises and decision premises of the organization. Ellis and Shockley-Zalabak (2001) have examined identification as a part of trust-building process while others (e.g., Cook and Wall, 1980; Hon and Grunig, 1999) treat identification as strongly related but conceptually distinct from organizational trust. The findings suggest that the conceptual ground between identification and trust should be rigorously explored to understand the shared conditions of their evolution, manifestation, and decline.

In conclusion, the study finds that while the three organizational trust measures are conceptually associated, as demonstrated by the correlational strengths indicating substantial convergent validity, the results suggest steps for strengthening the convergent validity of trust including: (a) increasing item parsimony to decrease redundancy, (b) clarifying item construction to account for correlated error variance due to factors such as social desirability of response, and

(c) improving theoretical specification investigating whether organizational identification is a factor of organizational trust or an antecedent or outcome variable.

7.1. Limitations

One limitation of the study is the correlational matrices rely on self-reports and do not investigate method variance. Second, the study participants provide a part-time and temporary work experience. Within these limitations, the results of the present study provide an important first step toward an integrative assessment of this important phenomenon in communication literature. Future studies can extend the present study by examining common method and trait variance as well as by investigating the construct validity of organizational trust with members from different organizational levels, industries, and regions.

7.2. Significance and Future Research

The study is the first to demonstrate the convergent validity of organizational trust measures and contributes to existing literature by taking a first step toward establishing that the measures employed to investigate trust in scholarship are indeed, measuring the construct they intend to examine. Future research can extend the results of the present study by conducting tests of the discriminant validity of organizational trust measures. Future research should clarify the role of organizational identification as a correlate, outcome, or factor of trust to understand their relationship with trust antecedents (exchange-based, knowledge-based or identification-based).

References

Argyris, C. (1962), *Interpersonal competence and organizational effectiveness*, Dorsey, Homewood, IL.

CONVERGENT VALIDITY OF TRUST

- Bhattacharya, R., Devinney, T. M. and Pillutla, M. M. (1999), "A formal model of trust based on outcomes," *Academy of Management Journal*, Vol. 23 No. 3, pp. 459-472.
- Bollen, K. A. (1989), *Structural equations with latent variables*, John Wiley & Sons, New York, NY.
- Bullis, C. and Bach, B. W. (1991), "An explication and test of communication network content and multiplexity as predictors of organizational identification," *Western Journal of Speech Communication*, Vol. 55 No. 2, pp. 180-197.
- Burke, K. (1950), A rhetoric of motives, University of California Press, Berkeley, CA.
- Campbell, D. T. and Fiske, D. W. (1959), "Convergent and discriminant validity by the multitrait multimethod matrix," *Psychological Bulletin*, Vol. 56 No. 2, pp. 81-105.
- Cheney, G. (1983), "The rhetoric of identification and the study of organizational communication," *Quarterly Journal of Speech*, Vol. 69 No. 2, pp. 143-158.
- Cheney, G. and Tompkins, P. K. (1987), "Coming to terms with organizational identification and commitment," *Central States Speech Journal*, Vol. 38 No. 1, pp. 1-15.
- Coleman, J. S. (1990), Foundations of social theory, Harvard University Press, Cambridge, MA.
- Cook, J. and Wall, T. (1980), "New work attitude measures of trust, organizational commitment, and personal need non-fulfillment," *Journal of Occupational Psychology*, Vol. 53 No. 1, pp. 39-52.
- Creed, W. E. D. and Miles, R. E. (1996), "Trust in organizations: A conceptual framework linking organizational forms, managerial philosophies, and the opportunity cost of controls." In R.M. Kramer and T.R. Tyler (Eds.) *Trust in Organizations: Frontiers of Theory and Research*, Sage Publications, Inc., Thousand Oaks, CA, pp. 16-38.

- Cronbach, L. J. and Meehl, P. E. (1955), "Construct validity in psychological tests," *Psychological Bulletin*, Vol. 52 No. 4, pp. 281-302.
- Cummings, L.L. and Bromiley, P. (1996), "The Organizational Trust Inventory (OTI):

 Development and Validation." In R.M. Kramer and T.R. Tyler (Eds.), *Trust in Organizations: Frontiers of Theory and Research*, Sage Publications, Inc., Thousand Oaks, CA, pp. 302-330.
- Das, T. K. and Teng, B. (1998), "Between trust and control: Developing confidence in partner cooperation in alliances." *Academy of Management Review*, Vol 23 No. 3, pp. 491-512.
- Dasgupta, P. (1998), "Trust as a commodity." In D. G. Gambetta (Ed.), *Trust*, Basil Blackwell, New York, pp. 49-72.
- Ellis, K. and Shockley-Zalabak, P. (2001), "Trust in top management and immediate supervisor: The relationship to satisfaction, perceived organizational effectiveness, and information receiving," *Communication Quarterly*, Vol. 49 Vol. 4, pp. 382-399.
- Eid, M., Nussbeck, F. W., Geiser, C., Cole, D. A., Gollwitzer, M. and Lischetzke, T. (2008), "Structural equation modeling of multitrait-multimethod data: Different models for different types of methods," *Psychological Methods*, Vol. 13 No. 3, pp. 230-253.
- Gabarro, J. (1987), The dynamics of taking charge, Harvard Business School Press, Boston.
- Hardin, R. (2000), Trust and trustworthiness, Russell Sage Foundation, New York.
- Hon, L. C. and Grunig, J. E. (1999), *Guidelines for measuring relationships in public relations*. *Institute for Public Relations*, Gainesville, FL.
- Hubbell, A. P. and Chory-Assad, R. M. (2005), "Motivating factors: Perceptions of justice and their relationship with managerial and organizational trust," *Communication Studies*, Vol. 56 No. 1, pp. 47-70.
- Hubbell, A. P. and Medved, C. E. (2001), "Measuring trustworthy organizational behaviors: A review of the literature and scale validation," Paper presented at the Organizational

CONVERGENT VALIDITY OF TRUST

- Communication Division of the annual meeting of the International Communication Association, May 24-28, Washington DC, USA.
- Jarvenpaa, S., Knoll, K. and Leidner, D. (1998), "Is anybody out there?: The development of trust in virtual teams." *Journal of Management Information Systems*, Vol. 14 No. 4, pp. 29-64.
- Jones, G. R. and George, J. M. (1998), "The experience and evolution of trust: Implications for cooperation and teamwork," *The Academy of Management Review*, Vol. 23 No. 3, pp. 531-546.
- Kline, R. B. (2004), *Principles and practice of structural equation modeling* (2nd Ed.), The Guilford Press, New York, NY.
- Korsgaard, M. A., Brodt, S. E. and Whitener, E. M. (2002), "Trust in the face of conflict: The role of managerial trustworthy behavior and organizational context," *Journal of Applied Psychology*, Vol. 87 No. 2, pp. 312-319.
- Larzelere, R. and Huston, T. (1980), "The dyadic trust scale: Toward understanding interpersonal trust in close relationships," *Journal of Marriage and the Family*, Vol 42 No. 3, pp. 595-604.
- Lee, S. M. (1971), "An empirical analysis of organizational identification." *Academy of Management Journal*, Vol. 14 No. 2, pp. 213-226.
- Lewicki, R. and Bunker, B. (1995), Developing and maintaining trust in work relationships. In R. Kramer and T. Tyler (Eds.), *Trust in organizations: Frontiers in theory and research*, Sage, Newbury Park, CA, pp. 114-139.
- March, J. G. and Simon, H. A. (1958), Organizations, John Wiley & Sons.
- Mayer, R. C., Davis, J. H. and Schoorman, F. D. (1995), "An integrative model of organizational trust. *Academy of Management Review*," Vol. 20 No. 3, pp. 709-734.

- McAllister, D. (1995), "Affect-and cognition-based trust as foundations for interpersonal cooperation in organizations," *Academy of Management Journal*, Vol. 38 No. 1, pp. 24 59.
- McGregor, D. (1967), The professional manager, McGraw-Hill, New York.
- Mishra, A. K. (1996), "Organizational response to crisis: The centrality of trust." In R. M. Kramer and T. R. Tyler (Eds.), *Trust in organizations: Frontiers of theory and research*, Sage, Thousand Oaks, CA, pp. 261-287.
- Nunnally, J. C. (1978), *Psychometric theory* (2nd Ed.), McGraw-Hill, New York, NY.
- Rotter, J. B. (1967), "A new scale for the measurement of interpersonal trust," *Journal of Personality*, Vol. 35 No. 4, pp. 651-665.
- Rotter, J. B. (1971), "Generalized expectancies for interpersonal trust," *American Psychologist*, Vol. 26 No. 5, pp. 443-452.
- Rotter, J. B. (1980), "Trust and Gullibility." Psychology Today. October, pp. 35-42.
- Rousseau, D. M. (1990), "Assessing organizational culture: The case for multiple methods." In B. Schneider (Ed.), *Organizational climate and culture*, Jossey-Bass, San Francisco, CA, pp. 153-192.
- Rousseau, D. M., Sitkin, S., Burt, R. and Camerer, C. (1998), "Not so different after all: A cross disciplinary view of trust," *Academy of Management Review*, Vol. 23 No. 3, pp. 387-392.
- Rubin, R. B., Palmgreen, P. and Sypher, H. E. (1994), *Communication research measures: A sourcebook*, The Guilford Press, New York, NY.
- Schein, E. H. (1996), "Culture: The missing concept in organization studies," *Administrative Science Quarterly*, Vol. 41 No. 2, pp. 229-240.
- Tannenbaum, S. I., Beard, R. L. and Salas, E. (1992), Team building and its influence on team effectiveness: An examination of conceptual and empirical evidence. In K. Kelley (Ed.), *Issues, theory and research in industrial/organizational psychology*, Elsevier Science Publishers, Amsterdam, pp. 503-529.

Tompkins, P. K. and Cheney, G. (1983), Account analysis in organizations: Decision making and identification. In L. L. Putnam & M. E. Pacanowsky (Eds.), *Communication and*

organizations: An interpretive approach, Sage, Beverly Hills, CA, pp. 123146.

CONVERGENT VALIDITY OF TRUST

- Westen, D. and Rosenthal, R. (2005), "Improving construct validity: Cronback, Meehl, and Neurath's ship," *Psychological Assessment*, Vol. 17 No. 4, pp. 409-412.
- Whitener, E. M., Brodt, S. E., Korsgaard, M. A. and Werner, J. M. (1998), "Managers as initiators of trust: An exchange relationship framework for understanding managerial trustworthy behavior," *Academy of Management Review*, Vol. 23 No. 3, pp. 513-530.
 - Zucker, L. G. (1986), "Production of trust: Institutional sources of economic structure, 1840-1920." In *Research in Organizational Behavior*, Vol. 8, JAI, Greenwich, CT, pp. 53-111.

Table 1

Factor Structure and Internal Reliability for Trust in Top Management (Ellis & Shockley-Zalabak, 2001)

Ellis and Shockley-Zalabak (2001)	M(SD)	Range	alpha	F. 1
Eigenvalues/ % Variance explained				4.03/67.24
I. Trust in Top Management	3.56(.80)	3.41-3.81	.90	
1. I trust top management	3.81(.94)	1.00-5.00		.78
2. Top management is sincere in their	3.65(1.01)	1.00-5.00		.81
efforts to communicate with				
employees				
3. Top management listens to	3.43(.10)	1.00-5.00		.85
employees' concerns				
4. Top management keeps its	3.51(.98)	1.00-5.00		.82
commitments to employees				
5. Top management is concerned	3.57(.10)	1.00-5.00		.78
about employees' well being				
6. Those in top management keep	3.41(.94)	1.00-5.00		.86
their word to employees				

CONVERGENT VALIDITY OF TRUST

Table 2

Factor Structure and Internal Reliability for Organizational Trust (Hon & Grunig, 1999)

Hon &	& Grunig Scale(1999)	M(SD)	Range	alpha	F. 1	F. 2	F. 3
Eigenv		$M(\mathcal{OD})$	Range	агрпа	5.41/	1.14/	1.05/
_	Variance Explained				49.25	10.39	9.55
	•	2.52(.62)	2 20 2 02	90	49.23	10.39	
C	nizational Trust	3.52(.63)	3.28-3.93	.89	7 0	22	17
1.	This organization treats people	3.86(.83)	1.00-5.00		.72	23	.17
	like me fairly and justly						
2.	Whenever this organization	3.29(1.03)	1.00-5.00		.69	35	12
	makes an important decision, I						
	know it will be concerned about						
	people like me						
3.	This organization can be relied	3.61(.82)	1.00-5.00		.80	15	.06
	upon to keep its promises						
4.	I believe that this organization	3.33(.97)	1.00-5.00		.68	47	30
	takes the opinions of people like						
	me into account when making						
	decisions						
5.	I feel very confident about this	3.65(.83)	1.00-5.00		.81	14	.02
	organization's skills						
6.	This organization has the ability	3.94(.73)	1.00-5.00		.63	.45	43
	to accomplish what it says it will	· /					
	do						
7	Sound principles seem to guide	3.57(.87)	1.00-5.00		.73	.21	.08
7.	this organization's behavior	3.37(.07)	1.00-3.00		.73	.21	.00
0	_	2 (2(00)	1 00 5 00		01	0.1	25
8.	This organization does not	3.62(.90)	1.00-5.00		.81	.01	.35
_	mislead people like me	• • • • • • • • • • • • • • • • • • • •	100 - 05			0.4	
9.	I am very willing to let this	3.28(1.00)	1.00-5.00		.67	.02	16
	organization make decisions for						
	people like me						

CONVERGENT VALIDITY OF TRUST					24
10. I think it is important to watch	3.13(1.14)	1.00-5.00	.47	.32	.69
this organization closely so that it					
does not take advantage of people					
like me*					
11. This organization is known to be	3.94(.83)	1.00-5.00	.61	.59	31
successful at the things it tries to					
do					



Table 3

Factor Structure and Internal Reliability for Trust in Top Management (Cook & Wall, 1980)

CONVERGENT VALIDITY OF TRUST

	12/85:				
Cook and Wall Scale (1980)	M(SD)	Range	alpha	F. 1	F. 2
Eigenvalues/% Variance Explained				3.21/53.45	1.06/17.68
I. Trust in Top Management	3.64(.71)	3.54-3.74	.84		
Faith in intentions of management					
1.Management at my firm is sincere in	3.54(.88)	1.00-5.00		.71	26
its attempts to meet the members' point					
of view					
2.I feel quite confident that the	3.68(.91)	1.00-5.00		.76	269
organization will always try to treat me					
fairly					
3.Our management would be quite	3.65(1.16)	1.00-5.00		.35	.87
prepared to gain advantage by					
deceiving the members*					
Confidence in actions of management					
4.Our organization has a poor future	3.56(1.12)	1.00-5.00		.77	.33
unless it can attract better managers*					
5.Management can be trusted to make	3.74(.78)	1.00-5.00		.82	.02
sensible decisions for the					
organization's future					
6.Management at work seems to do an	3.67(.84)	1.00-5.00		.86	19
efficient job					

Table 4

Correlations Matrix for Trust in Top Management and Identification Measurement

3. Trust in Top Management (Cook & Wall, 1980)	Scale		1	2	3	4	b = p
4. Organizational Identification (Cheney, 1983) .53 b .66 b .70 b .94	1.	Organizational Trust (Ellis & Shockley-Zalabak, 2001)	.94	$.82^{b}$.59 ^b	$.53^{b}$	· · · · · ·
4. Organizational Identification (Cheney, 1983) .53 b .66 b .70 b .94	2.	Organizational Trust (Hon & Grunig, 1999)	$.82^{b}$.89	.80 ^b	.66 ^b	.001
4. Organizational Identification (Cheney, 1983) .53 b .66 b .70 b .94	3.	Trust in Top Management (Cook & Wall, 1980)	.59 ^b	.80 ^b	.84	.70 ^b	item
C 17	4.	Organizational Identification (Cheney, 1983)	.53 ^b	.66 ^b	.70 ^b	.94	s in

bold are alpha reliabilities; items in italics are cross construct correlations.



N = 108

CONVERGENT VALIDITY OF TRUST

Goodness of Fit Statistics for Measurement Models and Alternative Models Testing Hypotheses 1a and 2a

	Model	$\chi^2(df), p$	χ^2/df	RMSEA
H1a	Measurement Model for Correlated	χ^2 (167) = 309.09, p < .001	1.85	.09
	Hon and Grunig, Ellis and Shockley-			
	Zalabak, and Cook and Wall scale			
	With Modification Indices	χ^2 (151) = 177.17 , $p < .10$	1.17	.04
	Alternative model correlating Hon and	χ^2 (76) = 151.68, p < .001	2.00	.89
	Grunig with the Cook and Wall scale			
	-Alternative measurement model for	$\chi 2$ (89) = 143.56, p < .001	1.61	.07
	correlated Hon and Grunig and Ellis			
	and Shockley-Zalabak scale			
H2a	Measurement model for correlated	χ^2 (734) = 1286.89, p <.000	1.75	.08
	Hon and Grunig, Ellis and Shockley-			
	Zalabak, and Cook and Wall scale			
	Alternative model combining the	χ^2 (559) = 1164.82, p <.000	2.08	.10
	organizational identification and Ellis			
	and Shockley-Zalabak (2001) scale			
	correlated with Hon and Grunig scale			