

BUILDING TRUST: COMMUNICATION AND SUBORDINATE TRUST IN PUBLIC ORGANIZATIONS*

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Abstract

This research explores how communication strategies of supervisors in public organizations influence subordinates' trust in their supervisors and organization. At present, little public administration research has explored how the pattern of communication influences subordinates' trust in their supervisors or organization (vertical trust), in detail. As such, this research constructs a conceptual framework of how supervisors' communication with subordinates can affect vertical trust in public organizations. Using 2010 US Federal Employee Viewpoint Survey Data, this research uses structural equation modeling to empirically assess the aforementioned framework. The broad conclusion drawn is that interpersonal communication strategies are most effective in building vertical trust in public organizations.

Keywords: organizational trust, organizational behavior, communication, public organizations.



1. Introduction

Levels of trust within an organization are often positively associated with levels of organizational effectiveness and performance (Mayer *et al.*, 1995; Dirks and Ferrin, 2001; Schoorman *et al.*, 2007). Given the positive association found to exist between levels of organizational trust and levels of organizational performance and effectiveness, a large body of research, which relates to public and private sectors, has found it necessary to attempt to better understand how trust is created within organizations (Mayer *et al.*, 1995; Schockley-Zalabak *et al.*, 2000; Huff and Kelley, 2003; Cho and Park, 2011). Through understanding the factors affecting trust within organizations, it is believed that managers and leaders within an organization will be better able to create conditions that are conducive to trust, thereby enhancing levels of organizational performance and effectiveness (Möllering *et al.*, 2004). While several forms of trust have been found to exist within organizations, this research focuses upon vertical trust in particular, which has been explained elsewhere as subordinates' trust in supervisors and in the organization (Costigan *et al.*, 1998).

Previous attempts to clarify the way in which vertical trust is created within organizations tend to focus upon assessing the effects of managerial strategies employed by supervisors when interacting with subordinates (Driscoll, 1978; Gilbert and Tang, 1998; Dirks and Ferrin, 2002). However, there has been no assessment of how supervisors' strategies of communication influence levels of vertical trust. This lacuna in the existing body of literature is curious, as communication between a supervisor and subordinate has been repeatedly argued to be a factor that greatly influences subordinates' levels of vertical trust (Gilbert and Tang, 1998; Park and Cho, 2011).

This research seeks to build upon the existing body of literature by focusing in particular upon how communication strategies employed by a supervisor serve to influence subordinates' levels of trust in their supervisor and organizations in the public sector. In public organizations, communication has been found to influence aspects of employee attitudes and behavior such as levels of employee commitment, empowerment, and organizational citizenship behaviors (Wright, 2004; Organ, 1988; Pandey and Garnett 2006; Garnett *et al.*, 2008). Given the findings of previous research, it is likely that the way in which a supervisor communicates with their subordinates may play an important role in influencing levels of vertical trust within public organizations. Despite their high face validity, such arguments have so far escaped in-depth investigation by extant public administration literature (Pandey and Garnett, 2006). Garnett (1997, p. 10) attributes this lack of attention to communication to a 'performance predicament' facing researchers in the field of public administration, in that 'the costs of government communication are generally easier to measure than are its benefits'. Given such a void, this research intends to advance existing knowledge related to factors affecting levels of vertical trust in public organizations by deriving and empirically testing a theoretical framework that can be used to understand how communication strategies employed by supervisors serve to influence levels of vertical trust within public organizations.

2. Conceptual overview

2.1. Vertical trust

Three perspectives traditionally dominate trust research in public administration (Bouckaert, 2012). First and most prevalent is the environmental perspective, which focuses on citizens' trust in public administration. Second and much less central is the contrary notion of public administrator's trust in citizens (the work of Yang (2005) is one of the few exceptions). Finally, the internal organizational perspective (Nyhan, 2000) studies trust within public organizations. In this article, we focus on this last perspective.

Within the internal organizational perspective on trust, our specific interest is vertical trust within public organizations, which refers to trust of public servants in their supervisor and their organization. Cho and Park (2011) elaborate on this understanding of vertical trust and explain that a subordinate's trust in their supervisor can be considered as a form of interpersonal trust, whereas a subordinate's trust in their organization can be considered a form of institutional trust. The authors concisely justify their explanation; 'the object of interpersonal trust is a person or group of people, whereas the object of institutional trust is an organizational entity' (Cho and Park, 2011, pp. 555). Thus, vertical trust is a two dimensional construct, where one dimension reflects a subordinate's interpersonal trust in their supervisor and the second dimension reflects a subordinate's institutional trust in their organization. While conceptually, it may be possible for a subordinate to trust their supervisor, but not their organization, or visa-versa, generally we may view both forms of trust as interrelated (Wright, 2004); this will be explained in greater detail later.

Now that the term vertical trust has been clarified, we should explain what is meant by 'trust'. We define trust as 'a psychological state comprising the intention to accept vulnerability based upon positive expectations of the behavior or intentions of another' (Rousseau *et al.*, 1998, p. 395). As this definition is applicable to situations where the object of trust is a person or an institution, it is suited for our research into vertical trust. Moreover, this definition is often used by research in public administration (Cho and Park, 2011; Grimmelikhuijsen, 2012). Positive expectations of the behavior or intentions of another are commonly said to stem from an evaluation of an object's (another's) benevolence, ability and integrity (Mayer *et al.*, 1995). When applied to concept of vertical trust, vertical trust is likely to occur when a subordinate positively evaluates the benevolence, ability, and integrity of their supervisor and organization according to these three factors (Park and Cho, 2011).

2.2. The specificity of public organizations and communication

While several distinguishing features of public organizations have been suggested (for example Perry and Rainey, 1988), there is some inconsistency with respect to features highlighted in the extant body of literature that attempts to differentiate public organizations from private (Rainey, 2003). Two features that are consistently mentioned as distinctive features of public sector organizations, however, are red tape and goal

ambiguity (Pandey and Kingsley, 2000; Pandey and Garnett, 2006). Previous research that has compared public organizations to private organizations has found that the prevalence of red tape and goal ambiguity in public organizations often negatively influence attitudes of employees of public organizations, when compared to employees of private organizations (Rainey, 2003). For example, Wright (2004) has suggested that the prevalence of goal ambiguity and red tape in public organizations makes employees feel less empowered, which in turn reduces their work motivation and job satisfaction and trust in their supervisors and organization. Similarly, research by DeHart Davis and Pandey (2005) has found that perceptions of red tape within public organizations often contribute toward subordinates' sense of alienation from the work they are doing, which has also been found to reduce subordinates' levels of trust in their supervisors and organization (Nyhan, 2000). Therefore, given the link between performance and employee attitudes in public organizations suggested by previous research (Gould-Williams, 2004), there is a need to explore ways in which supervisors and the organization can positively affect employee attitudes.

Pandey and Garnett (2006) have suggested that one means of positively affecting employee attitudes may stem from a better understanding of the implications stemming from communication between supervisors and subordinates in public organizations. To explain, a better understanding of how communication between a supervisor and subordinate in public organizations impacts subordinates' attitudes can provide insight into ways of mitigating the negative affects these distinguishing features of public organizations have on employee attitudes. As such, this research addresses this issue by focusing in particular upon ways in which communication may be used to positively affect attitudes of employees of public organizations; in this research we pay particular attention to vertical trust.

3. Theoretical framework and hypotheses

Previous research has suggested that communication practices employed by supervisors are likely to directly, as well as indirectly influence levels of vertical trust in public organizations via mediating variables (Wright, 2004; Park and Cho, 2011)¹. The conceptual model presented in Figure 1 illustrates the direct and indirect relationships that this research intends to investigate. Explanations of the relationships suggested to exist between the concepts outlined in Figure 1 are provided below. We begin our explanation with a discussion regarding the relationship between interpersonal trust in supervisors and institutional trust in organizations.

1 Garnett, Marlowe and Pandey (2008) empirically assess whether communication is likely to have a mediating or moderating effect on organizational performance. Based on the findings of their research we view communication to have a mediating, as opposed to moderating influence on trust.

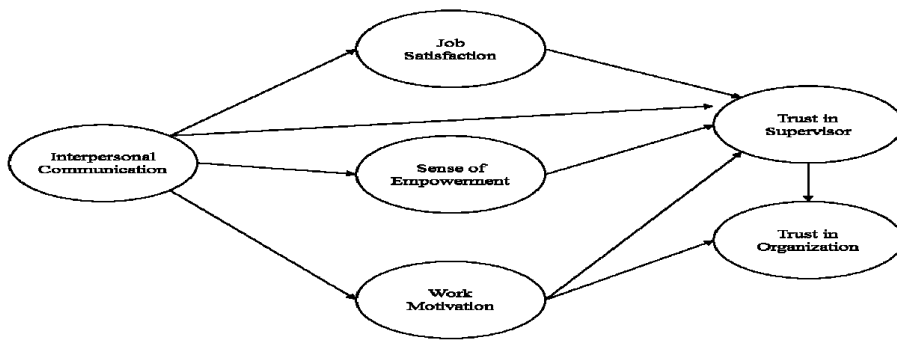


Figure 1: Theoretical framework

3.1. Interpersonal and institutional trust

Previous research in the field of organizational behavior has found that positive assessments of the trustworthiness of the supervisor and organization are strongly related to subordinates' perceptions of justice within the organization (Aryee *et al.*, 2002; Dirks and Ferrin, 2002; Shockley-Zalabak *et al.*, 2010). Within the organization, subordinates' perceptions of justice can be divided into interrelated categories of interactional, procedural, and distributive; interactional justice relates to the supervisor and can be considered interpersonal, whereas procedural and distributive justice apply to the organization, and can therefore be considered organizational.

Supervisors are said to be the primary way in which an organization can affect subordinates' perceptions of interactional justice, which is explained as 'perceptions that procedures and processes of the organization are implemented by supervisors fairly' (Aryee *et al.*, 2002). By supervisors increasing subordinates' sense of interactional justice, it is commonly found that subordinates in both public and private organizations will more readily assume vulnerability in supervisor-subordinate relations (Rousseau *et al.*, 1998; Mayer *et al.*, 1995; Kim 2005). A subordinate's sense of interactional justice is likely to be built over time through repeated interaction between supervisors and subordinates (Shockley-Zalabak *et al.*, 2010). Previous research related to public organizations has suggested that as a supervisor is able to enhance a subordinate's sense of interactional justice, through repeated interactions, interpersonal trust between the supervisor and subordinate is likely to result (Van Slyke, 2007).

Extant literature in the field of public administration has considered trust in supervisors to be interpersonal and stemming from interactional justice, whereas a subordinate's trust in the organization is considered institutional (Cho and Park, 2011). Subordinates' trust in their organization stems from their belief that policies and processes affect all members of the organization fairly (James 1993). Subordinates' belief that policies and processes of their organization are fair is said to stem from subordinates' perceptions of procedural and distributive justice (Aryee *et al.*, 2002). Aryee *et al.* explain that 'distributive justice describes the perceived fairness of the outcomes employees receive; procedural justice refers to the perceived fairness of the means used

to determine those outcomes' (2002, p. 271). Thus, in fostering subordinates' trust in their organization, the key question is what influences subordinates' perceptions of procedural and distributive justice?

We argue that in public organizations, subordinates' sense of interactional, distributive, and procedural justice all stem from the information employees have regarding the policies and processes of the organization, which in turn is a result of the way such information is communicated to them via supervisors (Sias and Jablin, 1995). This argument is premised upon two underlying assumptions. First, from a perspective of interactional justice, the way in which information regarding the organization is communicated to subordinates by a supervisor will influence perceptions of interactional justice, which in turn will influence subordinates' trust in supervisors. Second, the way in which information is communicated by supervisors, in addition to impacting subordinates' trust in their supervisor, will influence their perceptions of distributive and procedural justice, thereby impacting their levels of trust in the organization (Cho and Park, 2011)²; this suggests that trust in the supervisor will mediate subordinates' trust in their organization. This reasoning is premised upon arguments that supervisors in public organizations have a role that is determined by the institutional and cultural framework of the organization (Zaheer, McEvily and Perrone, 1998), which renders upon them a 'dual personality' of a private personality and an organizational personality (Barnard *apud* Simon, 1997, p. 283). This leads to supervisors being perceived by subordinates as organizational representatives or the 'faces of the organization' (Giddens, 1990). Bearing in mind these arguments, we hypothesize that trust in supervisors mediates the relationship between communication and trust in the organization (Konovsky and Pugh, 1994; Cho and Park, 2011).

H1: A subordinate's trust in their supervisor will have a direct positive effect on their trust in the organization.

3.2. Trust and communication

Previous literature related to public as well as private organizations has positively related characteristics of communication, such as frequency and perceived quality, to levels of subordinate performance, and attitudes like work motivation, commitment, empowerment, job satisfaction, and interpersonal and institutional trust (Morley *et al.*, 1997; Kacmar *et al.*, 2003; Wright, 2004; Zeffane *et al.*, 2011; Cho and Park, 2011; Aryee *et al.*, 2002; Wat and Shaffer, 2005; Hess and Story, 2005). However, strangely little research has questioned to what extent the direction of flows of information between supervisors and subordinates influence levels of vertical trust in public organizations. While a litany of various organizational communication strategies can be identified (Japlin,

2 The reason for this is that the supervisor serves as the implementer of organization's policies. It may be that the policies and processes of the organization are fair, but they will nevertheless be perceived as unfair by subordinates if the supervisor does not implement fairly.

1979), we broadly categorize supervisor's communication strategies as impersonal and interpersonal for this research.

Impersonal communication strategies view the subordinate as a passive receiver of information, implying that there is no real exchange of information. In public organizations, such strategies have been found to result in a lower quality relationship between supervisors and subordinates for the reason that potential misunderstandings on the part of the subordinate cannot be clarified, possibly inhibiting subordinates' sense of empowerment and job satisfaction, and increasing their sense of alienation (Wright, 2004). Moreover, an impersonal communication strategy is also likely to be poorly suited for the task of developing shared sense of mission between subordinates and supervisors (Ho and Ni, 2004), as subordinates are not given any opportunity to discuss questions they may have regarding organizational practices or goals, which are generally ambiguous in the public sector. Accordingly, impersonal communication is not expected to contribute to subordinates' perceptions of interactional justice (Aryee *et al.*, 2002), and even inhibit the creation of vertical trust. This implies that impersonal communication is also likely to be ineffective in fostering subordinates' trust in the organization.

The alternative to impersonal communication is interpersonal communication, where supervisors and subordinates are both active in the exchange of information (Pandey and Garnett, 2006). Presumably, this communication strategy would be conducive to higher quality relationships between supervisors and subordinates in public organizations, since a greater exchange of information would enable subordinates not only to better understand organizational policies, goals, and processes by allowing them to ask questions to their supervisors, but also enable them to possess better knowledge with respect to what is expected of them on the job (Wright, 2004). Additionally, greater interaction between a supervisor and subordinate would likely enhance the subordinate's sense of interactional justice, as subordinates perceive their relationship with their supervisor as more equitable (Kim and Clay, 1976). Empirical support for the link between an interpersonal communication strategy and subordinate trust in their supervisor can be found in Zand (1972), who, making use of an experimental research design, found strong evidence to suggest that meaningful participatory communication between supervisors and subordinates in an organization is crucial for building trusting relationships. As such, interpersonal communication strategies are likely to be effective in fostering subordinates' trust in their supervisors.

H2: Interpersonal communication between a supervisor and subordinate will have a direct positive effect on subordinates' trust in their supervisor.

While interpersonal communication strategies are likely to result in higher quality relationships between supervisors and subordinates, there are certain mediating factors which must also be taken into account. As this research is primarily concerned with assessing the effects of interpersonal communication between supervisors on subordinates' levels of vertical trust, we will only discuss the mediating factors that relate to interpersonal communication strategies.

3.3. *The mediating factors: job satisfaction, empowerment, and job motivation*

Factors which are likely to mediate the relationship between an interpersonal communication strategy used by supervisors and levels of subordinates' vertical trust in public organizations relate to job satisfaction, empowerment, and job motivation. These potential mediating factors have been associated with various forms of supervisor-subordinate interaction, information exchange and levels of trust in supervisors and the organization (Davis *et al.*, 1997; Dirks, 1999; Aryee *et al.*, 2002, Dirks and Ferrin, 2002; Wat and Shaffer; 2005; Cho and Park, 2011). First, we consider subordinate job satisfaction to be a consequence of interpersonal communication strategy employed by the supervisor, as well as an antecedent of subordinates' trust in their supervisor. Recalling that higher levels of goal ambiguity and red tape in public organizations have been found to negatively impact the attitudes of public sector employees, and that an interpersonal communication strategy used by a supervisor is likely to mitigate the negative impact of these features of public organizations on subordinate's attitudes, it would serve to reason that an interpersonal communication strategy would be positively related to subordinates' job satisfaction in public sector organizations³. With respect to the relationship between job satisfaction and trust in supervisor, we reason that, as a supervisor is successful in enhancing subordinates' levels of job satisfaction, subordinates' are also more likely to evaluate the ability, benevolence and integrity of their supervisor (trustworthiness) more positively, implying a positive relationship between job satisfaction and trust in supervisor.

As such, we outline the following hypotheses.

H3a: Interpersonal communication will have a direct and positive effect on levels of subordinate job satisfaction.

H3b: Subordinate job satisfaction will have a direct and positive effect on subordinates' levels of trust in their supervisor.

Empowerment concerns employees' sense that they are capable of meeting the demands of their work. Extant research has empirically illustrated that empowerment among subordinates is strongly and positively influenced by job goal specificity (the opposite of goal ambiguity) (Wright, 2004). Job goal specificity can be considered as the extent to which members of an organization understand the work they are charged to do. Logically, a subordinate's understanding of the work they are to do will be linked to the information an employee has of that task, with a primary source for such information likely to be one's supervisor. In this respect it is likely that interpersonal

3 We reason that an interpersonal communication strategy may serve to reduce goal ambiguity by enhancing goal clarity. Goal clarity has been found by previous research to be positively related to subordinate job satisfaction (Wright 2004). Moreover, an interpersonal communication strategy is also likely to reduce subordinates' sense of job alienation. Job alienation is said to stem from subordinate perceptions that red tape inhibits their ability to carry out tasks that are necessary for performing their job (DeHart-Davis and Pandey 2005).

communication enhances subordinates' knowledge of tasks and goals at hand, as it provides subordinates with greater opportunities to ask questions to their supervisors (Wright, 2004). This ability to ask questions is likely to imbue subordinates with the knowledge/confidence that they may resolve any problems that may arise by engaging in dialogue with their supervisor. Moreover, interpersonal exchanging of information may serve to mitigate feelings of helplessness or alienation on behalf of the subordinate, which previous research has suggested may stem from perceived red tape and goal ambiguity that are prevalent in public organizations. Finally, Nyhan (2000) has argued that, in public organizations, a subordinate's sense of empowerment is a significant prerequisite to their trust in the organization. We provide two reasons. First, subordinates who feel greater levels of empowerment are also likely to feel that the organization values their contribution, which in turn imbues subordinates with a feeling that they are valued by the organization. Second, subordinates are likely to evaluate their supervisor more positively, as the information afforded to subordinates by their supervisor is responsible for their enhanced sense of empowerment.

H4a: Interpersonal communication will have a direct and positive effect on subordinates' sense of empowerment.

H4b: Subordinates' sense of empowerment will have a direct and positive effect on trust in their supervisor.

Work motivation refers to an employee's willingness to perform a task (Wright, 2004; Houston 2011). Often, contextual factors associated with the work an employee is charged with are said to increase levels of work motivation (Wright, 2004). Prior research by Wright (2004) has suggested that contextual factors associated with work motivation in public organizations are likely to be heavily influenced by goal ambiguity, red tape, empowerment, job goal specificity, and organizational goal specificity, which are in turn likely to be heavily influenced by the communication strategy employed by a subordinate's supervisor. As explained with respect to empowerment, a supervisor exhibits the capacity to motivate employees through their ability to clarify job and related tasks through interpersonal communication. Therefore, we predict that interpersonal communication stands to enhance subordinates' work motivation. Moreover, similar to the explanation provided related to job satisfaction, a supervisor's ability to enhance employee work motivation is likely to imbue subordinates with greater faith in their supervisors' professional capacity, thereby leading them to trust their supervisor more (Dirks and Ferrin, 2002; Burke *et al.*, 2007).

H5a: Interpersonal communication will have a direct positive effect on subordinates' work motivation.

H5b: Work motivation will have a direct positive effect on subordinates' trust in their supervisor.

4. Data, methods, and measures

4.1. Data

Data used for this study comes from the United States' Government 2010 Federal Employee Viewpoint Survey (FEV)⁴. The unit of analysis in this study is the individual, full time, permanent Federal government employee.

This survey, which prior to 2010 was known as the Federal Human Capital Survey, has been conducted a total of five times and is administered by the Office of Personnel Management once every two years to federal employees. For 2010, 549,124 federal employees were sent surveys; the government-wide response rate was 52%, with slightly over 260,000 federal employees responding to surveys. Surveys with missing responses to the questions used to measure the latent variables in this study were discarded. This resulted in a total of 193,721 surveys used. The survey was administered to all small or independent agencies of the federal government, with 53 agreeing to participate. Within this category of agencies, the survey was administered as a census. In addition, the survey was also administered to thirteen departments/large agencies as a census. Together, these two groups represent 79% of the federal workforce. A total of 82 federal agencies were surveyed.

The FEV survey instrument consists of 89 questions, eleven of which are demographic, and the remaining 78 address employees' perceptions of agency effectiveness. Demographic questions assess where the respondent works, supervisory status, gender, ethnicity, age, pay grade, and tenure. Those questions assessing effectiveness address; work experiences, work unit, agency, supervisor, leadership, satisfaction, work/life, and turnover intention. The survey was self-administered online. In the event electronic access was not possible, paper versions were distributed.

4.2. Structural equation modeling

This research uses structural equation modeling (SEM) to test the hypothesized relationships mentioned earlier. This method is argued to be better suited for assessing complex systems of interrelationships among variables (Bollen, 1989). Given the multiple relationships hypothesized to exist by this research, the use of SEM as an analytical tool is appropriate. In order to evaluate how the proposed framework of relationships fits the empirical data, this research uses several goodness of fit indices. Finally, this research assumes that error terms of job satisfaction and work motivation are correlated, given that both of these variables represent employee attitudes (Cho and Park, 2011).

4.3. Measurement of latent variables

The constructs of interest to this research are not directly measured by the FEV survey. Subsequently, this research makes use of latent variables. As such, each of the six variables used in this study are measured using multiple survey items, which are

4 Information from this section is based on the United States' Office of Personnel Management explanation of the 2010 Federal Employee Viewpoint Survey (2011).

based upon previously validated measures. Cronbach's alphas of the six latent variables used in this study range from 0.718 for job satisfaction to 0.851 for interpersonal communication. Confirmatory factor analysis is used to ensure convergent validity. All of these values suggest an acceptable level of construct validity; 0.700 is considered as a threshold value (Hair *et al.*, 1998). Specific wording of the survey questions for the constructs used in this survey can be found in the appendix.

4.3.1. Interpersonal communication

Interpersonal communication is a term used to describe the downward flow of information from a supervisor to a subordinate, as well as the upward flow from the subordinate to the supervisor. The measure of interpersonal communication used is based upon Pandey and Garnett's (2006) emphasis on the importance of feedback, and measured the term with two items that assess subordinates' perceptions regarding frequency and quality of their interactions with their supervisor. However, unlike Pandey and Garnett's two-item measure, this research uses three questions which address subordinates' perceptions related to the frequency of their interaction with the supervisor, the usefulness of interactions with their supervisor, as well as third question that assesses subordinates' perception of whether their supervisor actually listens to what they have to say. The Cronbach's alpha for this composite variable was 0.851.

4.3.2. Job Satisfaction

Job satisfaction was measured based upon Bateman and Organ's use of the Job Descriptive Index (1983). The Job Description Index assesses five dimensions of job satisfaction; work, pay, promotions, coworkers, and supervision. Based upon this approach, we measure job satisfaction according to five questions. The Cronbach's alpha for the composite measure of job satisfaction in this study is 0.718.

4.3.3. Empowerment

Spreitzer (1995) derived and tested a multidimensional measure of psychological empowerment in the workplace, consisting of the four dimensions of meaning, competence, self-determination, and impact. Meaning refers to 'the value of a work goal or purpose, judged in relation to an individual's own ideals or standards' (1995, p. 1443). Competence refers to individuals' belief in their capability to perform activities with skill (Conger and Kanungo, 1988; Spreitzer, 1995). Self-determination refers to 'autonomy in the initiation and continuation of work behaviors (Spreitzer, 1995, p. 1443). The final dimension, impact, refers to the employees' feeling that they can influence outcomes in their organization. Based upon these four dimensions, a four item composite measure of empowerment is derived. The Cronbach alpha for this measure is 0.822.

4.3.4. Work motivation

Based on work by Patchen *et al.* (1965), Wright (2004) assesses work motivation based upon the dimensions of direction, intensity, and persistence. Direction refers to how involved an employee is in their work, intensity refers to how hard the employee works, while persistence relates to whether an employee is willing to work beyond

what is expected of them (Wright, 2004). In our study, work motivation is measured according to five items, two which assess direction, two that address intensity, and one that addresses persistence. The Cronbach's alpha for this measure is 0.761.

4.3.5. Trust in supervisor

A previously validated construct used to assess subordinate's trust in their supervisor has been derived by Podsakoff *et al.* (1995). Their measure assesses trust in one's supervisor based upon the two primary dimensions of faith and loyalty, as such corresponding to a degree with interactional justice. Moreover, the items these authors use to assess trust in one's supervisor draw heavily upon the distinct idea of interpersonal trust, rendering their two-dimensional assessment of trust in supervisor compatible with the objectives of our research. We assess a subordinates' trust in their supervisor based upon four items, three which address a subordinate's faith and loyalty in their supervisor, as well as a fourth question which asks respondents to respond to the comment, 'I have trust and confidence in my supervisor'. The Cronbach's alpha for this composite measure is 0.809.

4.3.6. Trust in organization

This measure is based upon three dimensions of trust used by Mayer and colleagues, being ability, benevolence, and integrity (1995). Ability concerns the trust object's capacity to perform, benevolence refers to the degree to which the trust object is believed to want to 'do good to the trustor', while integrity is related to the trust object adhering to values that they trustor 'finds acceptable' (Mayer *et al.*, 1995, p. 719); these measures can be seen as corresponding to procedural and distributional justice. Based on these three dimensions, this study measures subordinates' trust in their organization with three items. The Cronbach's alpha for these three measures is 0.82.

5. Findings

5.1. Descriptive Statistics

Table 1 exhibits descriptive statistics and zero order correlations between each of the six latent variables used in this research. All of the correlations are found to be significant at the $p < 0.01$ level. Several (complementary) explanations for this observation are possible. First, due to the large sample this study uses, correlations between variables are likely to be sensitive to even small effects, thereby resulting in significant relationships even where very little variance is shared. However, the lowest amount of variance shared between two latent variables (i.e., work motivation and interpersonal communication) was .489, thereby implying that other reasons may also be at work. A second possible explanation for all of the latent variables being correlated is due to mono-method bias. A third and most likely explanation is that the variables are indeed much correlated. All of the latent variables assessed in this research are concerned with employee attitudes, which are likely to be highly correlated with one another (Kampen *et al.*, 2006) and reflect a general disposition or outlook (Perry and Wise, 1990). Moreover, as seen in the conceptual framework, several mediating and

indirect relationships are suggested. To this end, significant relationships found to exist between all latent variables can be expected; the zero order correlations offer an initial source of support for the framework.

Table 1: Descriptive statistics and bivariate correlations

	N	Mean	Std. Dev	Cr. Alpha	Bivariate correlations					
Independent variables					Job sat.	Imp. Com.	Work mot.	Sense emp.	Trust org.	Trust sup.
Job Satisfaction	193,721	3.831	0.703	0.718	1					
Interpersonal communication	193,721	3.926	0.920	0.851	.718**	1				
Work Motivation	193,721	4.321	0.544	0.761	.610**	.489**	1			
Sense of empowerment	193,721	3.588	0.860	0.822	.756**	.641**	.632**	1		
Dependent Variables										
Trust in organization	193,721	3.690	0.920	0.820	.687**	.576**	.539**	.736**	1	
Trust in supervisor	193,721	3.598	0.938	0.809	.786**	.787**	.548**	.750**	.710**	1

Note: ** Correlation is significant at the 0.01 level (2-tailed).

5.2. Model test and findings

The proposed model is supported by several goodness of fit indices. Suggested goodness of fit indices to evaluate SEM models are model chi square, root mean square error of approximation (RMSEA), comparative fit index (CFI), and goodness of fit index (GFI) (Jaccard and Wan, 1996; Bollen, 1989). The chi square test results of this model were unfavorable (chi-square = 191,477.4 ($p= 0.00$)). However, it is common for studies using large sample sizes, such as this study, to have unfavorable chi square test results, yet still possess a valid model (James, Mulaik and Brett, 1982). The RMSEA value of this study’s model was 0.055; acceptable good structural equation models should possess an RMSEA value of 0.08 or less (Kline, 2005). The CFI of this model was 0.934, well over the minimum acceptable threshold of 0.90 (Jaccard and Wan, 1996). The GFI of this model was 0.936, which is also well over the minimum acceptable threshold of 0.90 (Jaccard and Wan, 1996). Thus, based upon the aforementioned goodness of fit indices, the proposed model is supported.

Table 2: Regression weights of SEM

Relationship		Estimate	S.E.	C.R.	P-value
Empowerment	← Interpersonal communication	0.028	0.001	22.34	<0.001
Job Satisfaction	← Interpersonal communication	0.998	0.001	930.83	<0.001
Work Motivation	← Interpersonal communication	0.009	0.001	17.50	<0.001
Trust in Supervisor	← Interpersonal communication	0.727	0.002	315.25	<0.001
Trust in Supervisor	← Job satisfaction	0.173	0.001	121.92	<0.001
Trust in Supervisor	← Sense of empowerment	2.753	0.131	21.07	<0.001
Trust in Supervisor	← Work motivation	0.04	0.006	6.42	<0.001
Trust in Organization	← Trust in supervisor	1.067	0.003	338.79	<0.001

Table 2 illustrates the results of this study's model. As can be seen, all parameters are statistically significant at the $p < 0.001$ level, yet this could be due to the large sample used in this study.

Subsequently, it is important to examine the size of the standardized direct and indirect effects, in addition to the levels of significance. Table 3 shows that a strong relationship between interpersonal communication and the mediating variables is found. This is not surprising: as relationships between supervisors and subordinates are strengthened via interpersonal communication, subordinates' perceptions of equality in their relationships with their supervisors are likely to be higher, as is their understanding of what is expected from them by the organization (Kim and Clay, 1976). Accordingly, these factors are likely to enhance subordinates' sense of job satisfaction, empowerment, and trust in their supervisor (Cho and Park, 2011). On the other hand, work motivation in the public sector may consist of more intrinsically based factors and therefore be less sensitive to external sources of stimulation (Perry and Wise, 1990). Moreover, the effects of interpersonal communication were greatest and most similar with respect to job satisfaction and trust in supervisor. Previous literature has found satisfaction and trust to be highly correlated terms (Van de Walle, 2003; Bouckaert and Van de Walle, 2003). Kampen *et al.* (2006) have questioned whether such correlation between trust and satisfaction is not caused by a third factor, but did not go into detailed explanations of what this third factor may be. Based on the strong and similar influence interpersonal communication was found to have upon trust and satisfaction, the findings of this research suggest that communication in particular could be particularly relevant to understanding why trust and satisfaction co-vary similarly. Finally, trust in supervisor was found to have a strong direct effect upon trust in organization. Thus, hypotheses H2, H3a, H4a, and H5a are accepted. A positive and significant relationship was also found to exist between trust in supervisor and trust in organization, leading us to accept H1.

Table 3: Standardized effects of interpersonal communication

	Interpersonal communication	Work motivation	Job satisfaction	Sense of empowerment	Trust supervisor	Trust organization
Work Motivation	Direct: 0.045 Indirect: 0.000	Direct: 0.000 Indirect: 0.000	Direct: 0.000 Indirect: 0.000	Direct: 0.000 Indirect: 0.000	Direct: 0.000 Indirect: 0.000	Direct: 0.000 Indirect: 0.000
Job Satisfaction	Direct: 0.792 Indirect: 0.000	Direct: 0.000 Indirect: 0.000	Direct: 0.000 Indirect: 0.000	Direct: 0.000 Indirect: 0.000	Direct: 0.000 Indirect: 0.000	Direct: 0.000 Indirect: 0.000
Sense of empowerment	Direct: 0.693 Indirect: 0.000	Direct: 0.000 Indirect: 0.000	Direct: 0.000 Indirect: 0.000	Direct: 0.000 Indirect: 0.000	Direct: 0.000 Indirect: 0.000	Direct: 0.000 Indirect: 0.000
Trust Supervisor	Direct: 0.756 Indirect: 0.261	Direct: 0.008 Indirect: 0.000	Direct: 0.227 Indirect: 0.000	Direct: 0.117 Indirect: 0.000	Direct: 0.000 Indirect: 0.000	Direct: 0.000 Indirect: 0.000
Trust Organization	Direct: 0.000 Indirect: 0.898	Direct: 0.000 Indirect: 0.007	Direct: 0.000 Indirect: 0.200	Direct: 0.000 Indirect: 0.103	Direct: 0.883 Indirect: 0.000	Direct: 0.000 Indirect: 0.000

All direct relationships between the proposed mediating variables and trust in supervisor and organization were found significant, likely due to the large sample size. As this research is focused in particular upon understanding mediated influence of interpersonal communication and vertical trust, it is important to focus upon the size

of indirect effects in explaining findings. Here, the indirect effect of interpersonal communication on trust in supervisor is 0.261. This finding suggests that the influence of interpersonal communication upon trust in supervisor is partially mediated by employee attitudes. As such, communication strategies, in addition to having a large direct effect upon trust in supervisors, also influence subordinates' trust in their supervisor indirectly via different aspects of employee attitudes. The indirect effect of interpersonal communication upon trust in the organization was found to be large at 0.898. The size of this indirect effect suggests that greater use of interpersonal communication strategies by supervisors not only serves to build trust between the subordinate and supervisor, but also encourages the subordinate to trust the organization. As such, even in the event a subordinate develops a better personal relationship with their supervisor, it is likely that subordinates will still view their supervisor as a representative of the organization. Therefore, the relationship between the subordinate and supervisor can be seen as critical in establishing an overall attitude of subordinates' trust toward their organization.

Thus, because mediating relationships between job satisfaction, empowerment, work motivation and trust in supervisor were all found to be positively significant, we cannot reject hypotheses H3b, H4b, and H5b either.

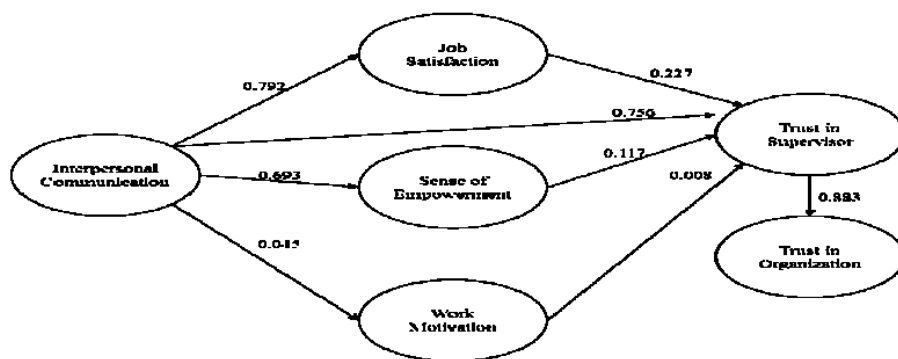


Figure 2: Results of analysis

6. Managerial implications for building vertical trust in public organizations

Trust is an important resource. Within an organizational setting however, an already ambiguous concept becomes even vaguer, as varieties of trust that may be distinct in theory are not easily distinguished in empirical reality. Models that are capable of empirically assessing the nuanced differences of different forms of trust within public organizations can therefore inform strategies to build higher levels of trust, which has been proposed to positively contribute to organizational performance in public organizations. The findings of this research suggest that communication strategies between supervisors and subordinates in public organizations are likely to influence levels of subordinate trust in their supervisor and ultimately their trust in the organization. We found such relationships to be both direct as well as mediated by other factors.

Subordinates' trust in their supervisor can be thought of as interpersonal trust (Cho and Park, 2011). As such, it serves to reason that this form of trust within an organization would be responsive to the way in which supervisors' interact with their subordinates. This research empirically evaluated the dimension of communication in interaction between subordinates and supervisor in public organizations, and found that higher levels of two-way interpersonal communication possess a positive direct as well as multiple indirect effects upon subordinate's trust in their supervisor. From such an explanation, it is important for public organizations to place greater emphasis upon ensuring that supervisors are taking time to listen to their employees. As contemporary information technology becomes increasingly integrated into organizational processes, faster methods of communication could serve as a means of facilitating supervisors' ability to interact with subordinates, as well as improve their ability to listen to what subordinates have to say.

While this research focused in particular upon communication in public organizations, future research may wish to assess other dimensions of the relationship between supervisors and subordinates in order to assess whether relationships between subordinates and supervisors are really such important determinants of vertical trust in public organizations, as this research suggests. In addition, it would also be interesting to question whether the use of information technology within an organization exerts any distinctive effects upon levels of vertical trust.

A subordinate's trust in their organization, which can be considered as institutional trust, was found to have a strong, albeit indirect relationship to interpersonal communication. This implies that, in public organizations, a subordinate's supervisor plays a critical role in determining the outlook of the subordinate toward the organization. Further, it is interesting to note that subordinates appear to consistently view their supervisor first and foremost as a representative of the organization. To this end, our research suggests that in organizational contexts marked by low levels of vertical trust, a first port of call in assessing the causes should be on the relationship between supervisors and subordinates. Moreover, in attempting to build higher levels of trust in public organizations, it is likely to be of great importance that senior level management considers ways in which organizational structure can be improved so as to facilitate interaction between supervisors and subordinates; while doing so may possess some form of negative influence upon levels of efficiency, this study suggests that it is possible for such losses in efficiency to be made up indirectly by gains related to subordinate attitudes. As such, our research supports other organizational scholars' claims that institutional trust can serve as a foundation for the development of institution-based interpersonal (Rousseau *et al.*, 1998) and interorganisational trust (Bachmann and Inkpen, 2011; Zucker, 1986).

7. Conclusion

This research questioned whether supervisors' use of interpersonal communication in public organizations served to enhance levels of vertical trust of subordinates. The results of this research suggest that subordinates, who perceive the use of interpersonal

communication by their supervisors, also possess higher levels of vertical trust in both their supervisor and their organization. These results are quite intuitive and also suggest in a broader sense that interpersonal communication employed by the supervisor is an effective means of fostering more positive attitudes among subordinates toward the organization in general. While the results of this research are based upon data coming from the United States Government Federal Employee Viewpoint Survey (FEV), it is also worthwhile for additional research to explore the extent to which interpersonal communication can influence attitudes of subordinates in different national contexts. Presumably, organizational and national culture may lead to different results. Nonetheless, in this era of austerity, government is increasingly forced to look for ways of doing more with less; this is true not only for the United States, but for much of Europe as well. To this end, given the positive link that is generally said to exist between levels of subordinates' vertical trust and organizational performance, it appears worthwhile for governments, which are faced with the seemingly impossible task of improving (or maintaining) performance while at the same time drastically reducing resources, to search for different methods of building trust.

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Appendix 1: Measures of latent variables

All statements and questions are measures according to a five point Likert scale.

Interpersonal communication

- Discussions with my supervisor/team leader about my performance are worthwhile.
- My supervisor/team leader listens to what I have to say.
- In the last six months, my supervisor/team leader has talked with me about my performance.

Work Motivation

- My work gives me a feeling of personal accomplishment.
- The work I do is important.
- When needed, I am willing to put in extra effort to get a job done.
- I am constantly looking for ways to do my job better.
- I am held accountable for achieving results.

Job Satisfaction

- I like the kind of work I do.
- The people I work with cooperate to get the job done.
- Overall, how good of a job do you feel is being done by your immediate supervisor/team leader?
- How satisfied are you with your opportunity to get a better job in your organization?
- Considering everything, how satisfied are you with your pay?

Empowerment

- I feel encouraged to come up with new and better ways of doing things.
- My talents are used well in the workplace.
- The workforce has the job-relevant knowledge and skills necessary to accomplish organizational goals.
- Employees have a feeling of personal empowerment with respect to work processes.

Trust in Supervisor

- I have trust and confidence in my supervisor.
- Promotions in my unit are based on merit.
- I can disclose a suspected violation of any law, rule or regulation without fear of reprisal.
- My performance appraisal is a fair reflection of my performance.

Trust in Organization

- My organization's leaders maintain high standards of honesty and integrity.
- My agency is successful at accomplishing its mission
- I have a high level of respect for my organization's senior leaders