



## **An Empirical Study of Organizational Commitment: A Multi-Level Approach**

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### **ABSTRACT**

Since many organizations tend to be hierarchically structured, data obtained from these organizations can be delineated better by multilevel analysis. An empirical multilevel investigation was conducted to identify the determinants of organizational commitment using a statistical technique, hierarchical linear modeling. Hierarchical linear modeling analyses revealed that organizational commitment was positively related to satisfaction and trust at the individual-level. At the group-level, the relationships between organizational commitment and role states variables (role clarity and role conflict) were found to be significant. Further, the positive relationship between organizational commitment and the level of trust was stronger in the more cohesive groups. In contrast, the relationship between commitment and satisfaction was not influenced by the cohesiveness of the groups.

### **Introduction**

Scholars in the education, sociology and business fields (Klein et al., 1994, Rousseau, 1985) have raised the levels-of-analysis issue. Klein et al. suggested that “by their nature, organizations are multi-level. ... No construct is level free. Every construct is tied to one or more organizational levels or entities, that is, individuals, dyads, groups, organizations, industries, markets, and so on” (1994: 198). House et al. (1995) also proposed the development of a new paradigm to foster integration of micro and macro organizational phenomena and to provide a framework in which organizational behavior knowledge can be accumulated in an integrative and coherent way. They argued that “*distinctive competence of organizational researchers is the ability to study how organizational settings and organizational members influence each other and are influenced in turn*” (1995: 74; italicized by the original authors). Given the significance of the multi-level perspective in research on organizations, the thesis of this study is that adopting the multi-level perspective would facilitate a better understanding of the role that contextual factors play in organizational behavior phenomena. Accordingly, this study purports to gain a more fine-grained knowledge on the impact of both *individual-* and *group-level* variables on organizational commitment by using a multi-level statistical technique, hierarchical linear modeling, rather than ordinary least squares (OLS) regression.

The construct of organizational commitment has been cited as one of the most popular variables of interest in the field of organizational psychology and organizational behavior (Mathieu & Zajac, 1990). There are several conceptualizations of the organizational commitment construct. The various definitions and measures share a common theme in that



organizational commitment is considered to be a bond or linking of the individual to the organization. Salancik (1977) viewed commitment as the binding of individuals to behavioral acts, reflecting the behavioral school perspective. On the other hand, attitudinal researchers viewed it as the relative strength of an individual's identification with and involvement in a particular organization (Mowday et al., 1982). However, Scholl (1981) posited that organizational commitment is a type of motivating force rather than an attitude or a descriptor of a set of behaviors, independent from expectancy. Allen and Meyer (1990) conceptualized a three-dimensional definition of organizational commitment that integrated early studies. Their definition of organizational commitment is as follows:

The *affective* component of organizational commitment . . . refers to the employee's emotional attachment to, identification with, and involvement in, the organization. The *continuance* component refers to commitment based on the costs that the employee associates with leaving the organization. Finally, the *normative* component refers to the employee's feeling of obligation to remain with the organization. (1990: 1)

In the previous literature on salespeople, organizational commitment has been reported as one of the most studied variables in seeking to understand salespeople's behaviors and attitudes (e.g., Brown & Peterson, 1993). For instance, prior research has looked at the relationship between organizational commitment and turnover and found it to be significant. Organizational commitment is an important variable to study as turnover of salespeople is a significant concern across several industries. Also, it is suggested that organizational commitment has a substantial impact on individual job performance (Riketta, 2002)

In this study, we consider the case of salespeople in multiple sales agencies of an insurance company. We postulate that salespeople's organizational commitment varies within a sales agency, and agency-level organizational commitment varies across agencies in a company. Agency managers are most interested in within-agency variation in organizational commitment. Regional managers who are responsible for multiple agencies, however, are more interested in variation across agencies. Lastly, senior managers are concerned with factors that influence both individual- and agency-level variation. Additionally, variables that influence an individual's organizational commitment might depend on agency (group)-level characteristics. Within this context, researchers should consider three major types of hypotheses: (1) individual-level predictors of other individual-level variables, (2) group-level predictors of other group-level variables, and (3) group-level variables that impact the relationship between individual-level variables.

This article is organized as follows. First, the literature on organizational commitment is reviewed and testable hypotheses are developed both at the individual and group level. Second, the research methodology, including a brief description of hierarchical linear modeling, is presented. Then, the empirical results of the multi-level analysis are reported. Next, the findings from the study are discussed in the context of the insurance industry. Finally, the limitations of this study and future research directions are addressed.



## Theoretical Framework and Hypotheses

### Organizational Commitment at the Individual-Level

The construct of organizational commitment at the individual level has been extensively investigated. While there is some disagreement about whether job satisfaction is a measure of organizational attachment, Mowday et al. posited that commitment differs from the concept of job satisfaction in several ways:

To begin with, commitment as a construct is more global, reflecting a general affective response to the organization as a whole. Job satisfaction, on the other hand, reflects one's response either to one's job or to certain aspects of one's job. Hence, commitment emphasizes attachment to the employing organization, including its goals and values, while satisfaction emphasizes the specific task environment where an employee performs his or her duty (1979: 226).

In organizational settings, job satisfaction and organizational commitment have been found to be positively correlated (see Brown & Peterson, 1993). In sales research, salesperson job satisfaction has been shown to impact a number of key job-related attitudes (organizational commitment) and behaviors (potential turnover of salespeople) (Johnston et al., 1990). Using data from 1,385 employees representing a variety of occupational groups, Mottaz (1987) reported that satisfaction and organizational commitment have reciprocal effects. However, satisfaction had a greater effect on commitment than the reverse. In addition, satisfaction has been found to lead to higher levels of organizational commitment (e.g., Williams & Hazer, 1986). Although both job satisfaction and organizational commitment are job attitudes, job satisfaction is believed to cause organizational commitment because it is more specific, less stable and more rapidly formed (Williams & Hazer, 1986). This direction of causality has been proposed by a number of other researchers as well (e.g., Porter et al., 1974; Yousef, 2000). Thus, consistent with prior research, it is expected that job satisfaction will have a positive impact on organizational commitment.

H1a (individual-level hypothesis): The level of job satisfaction of an individual working in a group setting is positively related to the individual's organizational commitment.

Although many social scientists have afforded considerable attention to the problem of defining trust (e.g., Luhmann, 1988), a concise and universally accepted definition has remained elusive. Despite various conceptualization of trust, it is often associated with situations involving personal conflict, outcome uncertainty, and problem solving. It is characterized as a "positive force from which cooperation is derived" (Scott, 1980: 158). It includes three major but overlapping constructs: fairness, confidence, and risk-taking. Luhmann (1988) believes that trust represents the level of confidence one has in another to act in a fair, ethical, and predictable manner. In a similar vein, Mishra defines trust as "one party's willingness to be vulnerable to another party based on the belief that the latter party is (a) competent, (b) open, (c) concerned, and (d) reliable" (1996: 265). In this study, following Podsakoff et al. (1990), trust is conceptualized as an individual's faith in and loyalty to the supervisor in a group in which the



individual possesses membership. Reflecting this supervisory-subordinate trust, Kramer suggested that “the importance of trust and the problems that attend it derive at least partially from the reciprocal vulnerabilities and uncertainties that are inherent in hierarchical relationships” (1996: 217). Rempel et al. (1985) also proposed that trust develops from interpersonal relationships between supervisors and subordinates based on a mutual degree of reliability, confidence, and security. A linkage between trust and organizational commitment has been supported by significant theoretical and empirical findings. Blake and Mouton (1984) viewed trust as synonymous with mutual respect between supervisors and subordinates and a key to developing organizational commitment. Trusting individuals would expect their interests to be promoted and protected by the supervisor they trust. Kanter (1972) reported a positive association between trust and organizational commitment, contending that trust complements organizational commitment. Laschinger et al. (2001) also found a positive impact of trust on organizational commitment. Consistent with the past literature, we also propose that trust based on loyalty to the supervisor fosters organizational commitment.

H1b (individual-level hypothesis): The trust level of an individual working in a group setting is positively related to the individual's organizational commitment.

### Organizational Commitment at the Group-level

Previous research has supported the significant relationship between role states and organizational commitment (Mathieu & Zajac, 1990). This study follows the conceptualization of role states in a study of Kahn (1973). Role clarity is defined as the “fit between the amount of information that a person has and the amount he [or she] requires to perform the role adequately” (1973: 9), and role conflict is defined as “logically incompatible demands made upon an individual by two or more persons” (1973: 5). The activities, expectations, and demands of an individual's role may affect the manner in which the individual is able to perform the role. Certainty and congruency of role expectations and demands are likely to positively affect self-confidence and morale, which in turn has a critical impact on organizational commitment levels.

Researchers have posited that these two role states impact employee's organizational commitment. Mowday et al. (1982) proposed role states as one of antecedents of organizational commitment, and Mathieu and Zajac (1990) empirically supported the proposed relationship. From the social information processing perspective (Salancik & Pfeffer, 1978), both role clarity and role conflict are to be influenced by social comparisons and social influence among work group members. Thus, individuals may perceive their roles directly or assess the perceptions that their fellow workers have as responses to role states within the group. For example, in insurance agencies that provide clear role-related information and demand congruent roles, sales agents may react favorably in part because other individuals in the agency view the role states as positive. Thus, individuals influence each other with their responses. Additionally, with sales agents relying on each other, an increase in the contact between sales agent and co-workers might occur, thus reducing possible role stress situations and increasing organizational commitment. We expect that beyond direct individual reactions to these role states, individuals also respond to their contexts and immediate environment. Moreover, different agencies are more or less precise and contradictory in articulating their role expectations. Hence, the group-



level influence derives not only from interpersonal influence among sales agents, but also from exposure to common group-level expectations demanded by the agency.

Group-level organizational commitment will be higher in agencies with higher role clarity, because of an indirect influence of the role states to salespeople through other salespeople in the agency and due to the agency clarity in articulating the role expectations. Additionally, when role conflict is higher, group-level organizational commitment is expected to be lower. Thus, it can be argued that low levels of role clarity and high levels of role conflict are frustrating and unpleasant, and lead to lower levels of organizational commitment.

H2a (group-level hypothesis): At the group level, role clarity is positively related to organizational commitment.

H2b (group-level hypothesis): At the group level, role conflict is negatively related to organizational commitment.

Satisfaction and trust have been positively related to organizational commitment across numerous studies (e.g., Welsh & LaVan, 1981). Although the evidence of these relationships has generally been positive, the magnitude of the effects has varied considerably across studies (Mathieu & Zajac, 1990). This variation has not yet been examined and explained. One explanation for this variance in effects could be differences between group cohesiveness across agencies. Group cohesiveness is described as “the resultant forces, which are acting on the members to stay in a group” (Festinger, 1950: 274). It is a relative property of a group that summarizes the extent to which the group members possess affinity for one another and desire to remain part of the group.

Highly cohesive groups are characterized by heightened member attraction of the group, friendliness, mutual liking, cooperation and positive feelings about carrying out the group’s tasks (Shaw, 1981). From the theoretical perspectives of social exchange and helping, one would expect that cohesive groups would display more positive and frequent social exchanges than non-cohesive groups. Some researchers (e.g., Organ, 1990) have suggested that extra-role behaviors like organizational citizenship behavior may reflect members’ efforts to maintain exchange relationships within the group that are more social than economic. Cohesive groups characterized by helping and cooperation may encourage trust in the long run that social exchange will be reciprocated. Van Dyne et al. (1995) reported that highly cohesive groups engender a strong social identity that can enhance members’ desires to help one another. Also, it has been reported that cohesive groups are more satisfied with their work environment than those in less cohesive groups (Gross, 1954). Bartkus et al. (1997) indicated that group cohesiveness influences a variety of salient job-related outcomes, including organizational commitment, job satisfaction, motivation, and role stress. We suggest that employees are more likely to perform their jobs well if they are satisfied with their jobs and develop trust-based relationships with their supervisor. Employees in an organization with a cohesive work environment are more likely to support each other. Thus, their organizational commitment is enhanced to the extent that they are satisfied with their job environment and trust their manager. Organizations with high group cohesiveness would foster high support among employees, which provide a context in which the impact of satisfaction and trust on organizational commitment is relatively strong.



H3a (group x individual-level interaction hypothesis): The positive impact of individual-level satisfaction on organizational commitment is increased (decreased) among groups with high (low) work group cohesiveness.

H3b (group x individual-level interaction hypothesis): The positive impact of individual-level trust on organizational commitment is increased (decreased) among groups with high (low) work group cohesiveness.

The individual-level hypotheses (H1a and H1b) provide support for individual-level association with organizational commitment. Group-level hypotheses (H2a and H2b) posit group-level association with group-level commitment (main effects of group-level variables on group-mean commitment). Also, group-level hypotheses (H3a and H3b) posit that group-level variables affect differences across groups in the direction and magnitude of the individual-level relationships in H1 (interactive effects of group and individual-level variables).

## **Method**

### Sample

We obtained data from sales agents working for a large international insurance company. This industry was selected because agent turnover and organizational commitment of salespeople in the life insurance industry is a major concern (Podsakoff et al., 1990). Past research indicates that over 80% of sales agents in this industry leave their jobs either voluntarily or involuntarily within their first three to five years. This is a limitation of our study as the sample is biased to those sales agents that did not stay in the company. The sample was comprised primarily of males (78%), with an average age of 37 years. The agents had worked for their organization an average of 4.3 years. As is typical of the life insurance industry, the sample was generally highly educated with almost two thirds (66%) of the agents had obtained an undergraduate or advanced college degree.

### Procedures

Questionnaires were mailed to sales agents. Accompanying each questionnaire was a letter from a key management official indicating company support for the project and encouraging participation, a letter from the researchers promising participants complete confidentiality, and a pre-addressed, stamped envelope to return the questionnaire. Usable questionnaires were obtained from 660 agents working in 60 agencies for an effective response rate of 95%. The number of agents in each agency varied from 3 to 35 with an average of 11 agents in each agency.

### Measures

Organizational commitment, the criterion variable for this study, was measured with the 15-item scale developed by Porter et al. (1974). This scale (Cronbach  $\alpha = 0.87$ ) was designed to assess an employee's identification with and involvement in the organization. Previous research (Porter et al., 1974; Mowday et al., 1979) has demonstrated that this 15-item scale possesses



adequate psychometric properties, and the data pertaining to its reliability and validity were generally positive.

Job satisfaction was measured using the 20-item short form of the Minnesota Satisfaction Questionnaire (MSQ; Weiss et al., 1967). The MSQ has been shown to have generally good psychometric properties and correlates well with other measures of Job Satisfaction (Gillet & Schwab, 1975). Cronbach  $\alpha$  for the satisfaction measure was 0.87. Trust (Cronbach  $\alpha = 0.90$ ) was measured with six items proposed by Podsakoff et al. (1990).

The role states were measured using shortened versions of Rizzo et al.'s (1970) scale. Salesperson's role clarity was assessed using six items (Cronbach  $\alpha = 0.80$ ) and role conflict was assessed using eight items (Cronbach  $\alpha = 0.72$ ). This reduced-item version of the scale has been used in numerous previous studies, and generally positive evidence has been found on both their reliability and validity (House et al., 1983). Group cohesiveness (Cronbach  $\alpha = 0.88$ ) was measured using six-item scale developed by Podsakoff and MacKenzie (1994). The referent for the items in this scale is the work group, rather than the individual.

Seven-point Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree) was applied to assess all of the constructs measured in the present study, with the exception of the 20 MSQ questionnaire items, which were assessed with the traditional five-point scale ranging from 1 (Very Dissatisfied) to 5 (Very Satisfied) used in prior research (Weiss et al., 1967).

### Methodology: Hierarchical Linear Modeling

Hierarchical linear models explicitly model both individual and group-level residuals, therefore, recognizing the partial interdependence of individuals within the same group (in contrast to OLS approaches where individual- and group-level residuals are not separately estimated). The total variation in a dependent variable is decomposed into *within-group variance* and *between-group variance*, and the two sources of variation are studied *simultaneously*. Unlike traditional analysis of variance (ANOVA) approaches for the decomposition of within-group and between-group variation, hierarchical linear model estimation does not require balanced data and utilizes all available information in an unbalanced data set.

A hierarchical linear model consists of two equations: a within- and between-group model. For example, the levels of outcome measure ( $Y_{ij}$ ) for individual  $i$  within group  $j$  can be examined as a function of  $k$  explanatory variables,  $X_{ijk}$ , and a residual within-group variance,  $r_{ij}$  :

$$Y_{ij} = b_{0j} + b_{1j}X_{ij1} + b_{2j}X_{ij2} + \dots + b_{kj}X_{ijk} + r_{ij} \quad (1)$$

The individual-level or level-1 regression coefficients relate the outcome measure to the  $k$  independent variables. In hierarchical linear models, these coefficients are allowed to vary across groups (Bryk & Raudenbush, 1992). Therefore, we formulate a between-group model that represents the variability in each of the coefficients,  $\beta_{kj}$ , as a function of group-level variables,  $W_p$  and level-2 residual,  $U_{kj}$ :



$$b_{kj} = g_{k0} + \underbrace{g_{k1} W_1 + g_{k2} W_2 + \dots + g_{kp} W_p}_{\beta} + U_{kj} \quad (2)$$

beta coefficient for group j
=
effects of group-level characteristics on within-group relationships
+
unique random effect associated with group j

The  $g_{kp}$  coefficients represent the effects of group-level or level-2 variables,  $W_p$ , which differs across groups, on the individual-level coefficients. The  $g$ 's relate group variable(s) to the individual-level coefficients, thus explaining the variation of the  $b_{kj}$  coefficients across groups.

In estimating the level-1 and level-2 models discussed above, a distinction is made between fixed and random coefficients, and variance components. Fixed effects are parameter estimates that do not vary across groups (e.g., the  $g$ 's from equation 2). Alternately, random coefficients are parameter estimates that are allowed to vary across groups such as the level-1 regression coefficients (e.g.,  $b_{kj}$ ). In addition, these level-1 and level-2 regression coefficients, hierarchical linear models also include estimates of the variance component which include: (1) the variance in the level-1 residual ( $r_{ij}$ ), referred to as  $\sigma^2$ , (2) the variance in the level-2 residuals ( $U_{kj}$ ), and (3) the covariance of the level-2 residuals.

One of the simplest ways to estimate the level-1 coefficient for a particular group is to compute an OLS regression equation for that particular group. Assuming large sample sizes within each group, these estimates would provide relatively precise estimates. However, when groups are smaller, these estimates will not be stable. Also, inspection of level-2 equations reveals that there are actually two estimates of the level-1 intercepts and slopes. The first estimate comes from an OLS regression equation estimated for a particular group (i.e., equation 1), whereas the second estimate comes from the level-2 regression model (i.e., the predicted values of  $b_{kj}$  from equation 2). Thus, for any particular group, two predicted intercept and slope values can be estimated: one from the level-1 regression equation and the second from the level-2 regression model.

## Results

This study examined the impact of both individual- and group-level variables on organizational commitment by using hierarchical linear modeling. Table 1 reports the means, standard deviations, and intercorrelations of the variables at both individual and group levels. Data were analyzed using the software package HLM (Scientific Software Inc., Chicago). Two data matrices are used, one for individual-level data and one for group-level data. The HLM program combines the two matrices to create a sufficient statistics matrix (SSM file), which it then uses to estimate all coefficients. The dependent and independent variables are specified for all hypotheses, and the multiple models (equations 3-6 below) are estimated simultaneously.

**Table 1. Means, Standard Deviations, Correlations Among Variables**

	Mean	SD	
Individual-Level			
1. Organizational Commitment	5.53	0.94	-





2. Satisfaction	4.03	0.51	0.36	-		
3. Trust	5.57	1.35	0.41	0.27	-	
Group-Level						
1. Organizational Commitment	5.29	0.39	-			
2. Role Clarity	5.64	0.42	0.29	-		
3. Role Conflict	3.46	0.43	-0.31	-0.18	-	
4. Group Cohesiveness	4.81	0.64	0.48	0.34	-0.24	-

*Notes:* For individual-level variables, N=660;  $|r| > .08$  is significant at  $p < .05$ ;  $|r| > .11$  is significant at  $p < .01$ .

For group-level variables, N=60;  $|r| > .26$  is significant at  $p < .05$ ;  $|r| > .33$  is significant at  $p < .01$ .

We begin with a simple one-way analysis of within-group and between-group variation. At level 1 in the model, observed variation in functional status is modeled as a function of an individual specific parameter and a residual term. At level 2, variation in the individual-specific parameter is modeled as a function of a grand intercept and a residual term. A useful estimate that can be derived from this model is in the intraclass correlation coefficient. The results from a one-way random effects ANOVA indicates that differences between sales agencies accounts for 4.5% of the variance in individual organizational commitment in our sample. This between agency variance (intraclass correlation) was significant based on a  $c^2$  test ( $p = 0.007$ ), indicating that modeling between-group differences in addition to individual sales person differences was appropriate for our study. Unlike OLS regression, this hierarchical linear technique allows us to measure both individual- and agency-level effects separately and simultaneously. Our hypothesized model is as follows (equations 3-6).

**Level-1:**

$$Y(\text{Organizational Commitment}) = b_0 + b_1(\text{Satisfaction}) + b_2(\text{Trust}) + r \quad (3)$$

**Level-2:**

$$b_0 = g_{00} + g_{01}(\text{Role Clarity}) + g_{02}(\text{Role Conflict}) + U_0 \quad (4)$$

$$b_1 = g_{10} + g_{11}(\text{Group Cohesiveness}) + U_1 \quad (5)$$

$$b_2 = g_{20} + g_{21}(\text{Group Cohesiveness}) + U_2 \quad (6)$$

Individual-level or level-1 results

Salesperson variables were group mean centered (i.e., centered on sales agency means) when entered into the individual-level model (level-1) to capture only within-agency variation. In support of H1a and H1b, individual-level salesperson explanatory variables (satisfaction and trust) were significantly related to organizational commitment ( $g_{10}$ ,  $g_{20}$ :  $p < 0.01$ ). It was found that 47.8% of within-group variation was explained by satisfaction and trust variables.

Group-level or level-2 results



Grand mean centered context variables were entered in the group-level equations (level-2) to estimate agency-level effects. Across all groups, the average sales agent's organizational commitment was 5.31 ( $g_{00}$ ). This average commitment level varied across agencies and was hypothesized to depend upon role states, which were modeled by  $g_{01-02}$  (H2a and H2b). In support of these hypotheses, we determined that the expected increase in organizational commitment was 0.53 for all agents in an agency with a one-unit increase in role clarity. The expected decrease in organizational commitment was 0.27 for all agents in an agency with one unit increase in role conflict (Table 2). We found 78.1% of the variance in agency average organizational commitment was explained by these two role perceptions. However, the remaining variance was statistically significant based on a  $c^2$  test ( $p = 0.028$ ), which indicates that other unmeasured variables probably account for some of the residual variance.

**Table 2. Fixed Coefficient Estimates of the Effects of Explanatory Variables on Salesperson Organizational Commitment for 660 Sales Agents from 60 Agencies at a Large International Insurance Company**

Independent Variables	Fixed Effect Coefficient Estimates	p-value
<u>For Intercept, <math>b_0</math> :</u>		
Intercept, $g_{00}$	5.31	0.000
Role Clarity, $g_{01}$ (H2a)	0.53	0.000
Role Conflict, $g_{02}$ (H2b)	- 0.27	0.003
<u>For Satisfaction Slope, <math>b_1</math> :</u>		
Intercept, $g_{10}$ (H1a)	0.92	0.000
Group Cohesiveness, $g_{11}$ (H3a)	- 0.26	0.062
<u>For Trust Slope, <math>b_2</math> :</u>		
Intercept, $g_{20}$ (H1b)	0.17	0.000
Group Cohesiveness, $g_{21}$ (H3b)	0.13	0.035

The impact of satisfaction and trust on organizational commitment was hypothesized to be positive and vary across agencies as a function of agency-level group cohesiveness (H3a, b modeled by equations 5 and 6 above). The average expected increase in organizational commitment was 0.92 for a one unit increase in a sales agent's satisfaction. The impact of satisfaction on organizational commitment, however, was marginally significant across groups by including the group cohesiveness variable ( $p = 0.062$ ). About 6.6% of the variance between agencies in the effect of satisfaction on organizational commitment was explained by including group cohesiveness. Significant unexplained variation of the impact of satisfaction on organizational commitment exists between agencies based on a  $c^2$  test ( $p = 0.045$ ). This indicates that the effect of satisfaction on organizational commitment varies across agencies and that predictors of this variation have yet to be determined. Additionally, we found that the average expected increase in organizational commitment was 0.17 for a one unit increase in a sales agent's trust. In support of H3b, this effect of trust on organizational commitment would be increased by 0.13 units for agents in agencies that have a one unit increase in agency-level group cohesiveness. About 10.5% of the variance between agencies in the effect of trust on organizational commitment was explained by including group cohesiveness. Remaining



between-agency variance of the impact of trust on organizational commitment is significant based on a  $\chi^2$  test ( $p = 0.007$ ), indicating that the effect of trust on organizational commitment varies across agencies as well. The results indicate that the variations in agency-level organizational commitment were random as modeled by  $U_0$ . Additionally, the variations in the impact of satisfaction and trust on organizational commitment across agencies were random as modeled by  $U_1$  and  $U_2$ . Role clarity, role conflict and group cohesiveness variables accounted for 95.3% of between-group variation.

## Discussion and Conclusion

Currently, researchers employ several methodologies (e.g., structural equation modeling, path analysis, two-stage least square) to study the antecedents of constructs deemed important in an organizational setting. None of these approaches explicitly account for the multi-level nature of organizational data. There is both a practical and theoretical need to better understand the organizational commitment construct. This research study is an important step in that direction. The theoretical contribution of this study lies in its endeavor to model both individual- and group-level predictors for the organizational commitment construct. A major practical contribution of this research is demonstrated application of hierarchical linear models in understanding complex organizational phenomena. The substantive insights and methodological contributions from this study may guide researchers in their efforts to better understand multi-level data and provide managerial insights. The primary reasons for modeling between-group variation levels are: (1) managers may have more control over between-group variables, (2) the relatively low variation between group means may still correspond to potentially large economic benefits, and (3) assessment of an individual group's performance may vary greatly depending on small between-group differences (Bryk & Raudenbush, 1992). For managers who oversee multiple agencies, investigation of factors that affect combined individual- and group-level variation may be quite appropriate for managerial decisions.

Our study indicates that significant between-agency differences exist. This provides an improved guideline (e.g., between-agency variation) for managerial decision making. Often, managerial decisions influence sales agencies rather than sales agents. For these decisions, management should be concerned with the impact of their decisions on between-agency, not within-agency, variation. Previous research on organizational commitment has suggested that both satisfaction and trust are positively related to organizational commitment. This study also supports the positive relationship. In addition, we examined whether the effects of satisfaction and trust on organizational commitment varied across sales agencies due to the agency characteristics. The results reveal that sales agents in agencies with higher role clarity and lower role conflict demonstrated a higher level of organizational commitment.

We hypothesized that the impact of satisfaction and trust on organizational commitment would vary across agencies with respect to agency-level group cohesiveness. The results indicate that group cohesiveness strengthened the positive relationship between trust and organizational commitment, while it did not affect the relationship between satisfaction and organizational commitment. The characteristics of the insurance industry *per se* may explain such a counter-intuitive result. In the insurance industry, agents are usually compensated by their individual sales performance and they tend to carry out most of their sales activities



independent of each other. Under such an individualistic compensation system and work environment, agents might be less satisfied with their organization when they perceive their work environment as group-oriented and collectivistic. An alternative explanation could be that there are multiple necessary conditions for organizational commitment (e.g., high satisfaction with co-workers and high group cohesiveness). As satisfaction with co-workers is part of the MSQ, the negative coefficient for group cohesiveness for the satisfaction coefficient may be a confounding effect. However, the results indicate that most of the variation in the impact of satisfaction on organizational commitment across agencies is random. More appropriate group-level variables should be included in order to explicate the influence of group cohesiveness on the relationship between satisfaction and organizational commitment.

### **Limitations and Future Research**

As in most studies, this study also has some limitations. First, the use of self-reported data tends to be confounded with a number of biases, such as common method variance and social desirability bias (Bryman, 1995). Second, the use of only one company as a data source has a number of ramifications for the generalizability of the empirical results. Specifically, the nature of the insurance industry from which data were collected may limit the applicability of the findings in this study to other types of industry setting. Lastly, the methodology used here, hierarchical linear modeling (HLM), has not been widely applied in the management field. Modeling issues associated with this methodology (e.g., reliability and data aggregation) need to be further researched (Bliese, 2000). Nonetheless, learning about the effects of context and/or group on individual behaviors is imperative for understanding organizations with multi-layered levels.

Other applications suitable for hierarchical linear model models would be meta-analyses in which multiple results are nested in different studies, and for longitudinal studies where repeated observations are obtained from individuals. In each of these cases, HLM provides more precise estimate and allow errors for cases within groups to be correlated. We believe that it is important to utilize methodological advances in other disciplines to begin testing hypothesized relationships across levels. Although HLM has been discussed for a number of years in the field of education, they have not received enough attention within the management domain. HLM represents an avenue by which more complex theories of organizations can be further developed and tested. The continuing demands for the integration of cross-level constructs into organizational studies, coupled with various methodological developments, will shed a new light on a better understanding of complex phenomena in organizations.



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