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FORMALIZATION AS A MEDIATOR OF HIERARCHICAL LEVEL, ROLE CONFLICT, AND ROLE AMBIGUITY

By
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ABSTRACT

FORMALIZATION AS A MEDIATOR OF HIERARCHICAL LEVEL, ROLE CONFLICT, AND ROLE AMBIGUITY

by

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A model that posits a mediating effect of formalization on hierarchical level and role conflict and role ambiguity is tested. In addition, adaptations of the Rizzo, House, and Lirtzman (1970) role ambiguity and role conflict scales are provided and statistically validated using the a priori, theoretically grounded assumptions of confirmatory factor analysis. Data were gathered from self-report questionnaires and completed by organizational members ($n = 81$) within the National Cancer Institute's Cancer Information Service, a geographically-dispersed federal government health information program. The model provided a poor overall fit to the data ($\chi^2 = 4.34$, with $df = 3$), $p>.05$ with two nonsignificant paths. These results are discussed with specific concern for the validation of the role conflict and ambiguity measures, as well as the implication that the model holds for future research.

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Region 6: (GA, NC, SC)	CIS at Duke Comprehensive Cancer Center
Region 7: (FL, PR)	CIS at Sylvester Comprehensive Cancer Center/University of Miami
Region 8: (AL, LA, MS)	CIS at University of Alabama at Birmingham
Region 9: (AR, KY, TN)	CIS at Kentucky Cancer Information Service
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Chapter 1

INTRODUCTION

The constructs role conflict and role ambiguity have received much attention from sociological, psychological, communication, as well as managerial scholars (see Fisher & Gitelson, 1983 and Jackson & Schuler, 1985 for a complete list). From Kahn, Wolfe, Quinn, Snoek, & Rosenthal's (1964) role explication decades ago, the literature on role conflict and role ambiguity has grown considerably.

Despite some of the equivocal results of various empirical studies, both role constructs are described as role stressors (Kahn et al. 1964; Schaubroeck, Cotton, & Jennings, 1989; Coverman, 1989; Siegall, 1992). The literature has identified several correlates of role conflict and ambiguity, including many structural variables such as: formalization, participation in decision making, span of subordination/supervision, size, and organizational level (Kahn et al., 1964; Greene, 1978; Morris, Steers, & Koch, 1979; Organ & Greene, 1981; Nicholson & Goh, 1983). Many negative psychological, emotional, and behavioral outcomes have also been associated with both role stressors.

These include: tension, anxiety, dissatisfaction, absenteeism, as well as lack of commitment, low performance, low involvement, and reduced levels of autonomy (Brief & Aldag, 1976; Rizzo, House, & Lirtzman, 1970; Van Sell, Brief, & Schuler, 1981; Fisher & Gitelson, 1983; Jackson & Schuler, 1985).

Chapter 2

LITERATURE REVIEW

Role Theory

Kahn, Wolfe, Quinn, Snoek, and Rosenthal (1964) have usually been credited for introducing and explicating the concepts of roles and role processes as well as popularizing both constructs in the organizational literature. However, before these researchers, other works predated Kahn et al. (1964) with the initial concept of role. In 1936, Linton brought the idea of role to the social science forefront. Others followed in relating the construct of role to their respective fields (Newcomb, 1950; Merton, 1957, Shibutani, 1961). These authors proposed the notion of a role as the primary means of linking the person with her/his environment. In a historical context, the concept of role linked psychology to sociology. It is where structural and personal forces meet that a role is created, altered, and maintained. These early researchers formed the beginning of role theory. A role, then, can be defined as, "a set of expectations about behavior for a position in a social structure" (Rizzo et al. 1970; p. 155)

In 1964, Kahn et al. (1964) extended these ideas to organizational settings. They fully explicated what a role was and how it was created through a theory that incorporated the Role Episode Model. The theoretical framework of the role episode consists of five major elements: organizational factors, attributes of the person or personal factors,

interpersonal factors, the role sender (including her/his role expectations and sent role), and the focal person (including her/his received role and role behavior). The role sender is the individual who conveys expectations of behavior to another person. In most cases, the person who fulfills this position is a supervisor. The focal person, on the other hand, is the individual who receives the role expectations sent from his/her superior.

These ideas can be captured in Burt's (1991) concept of structural equivalence where, "similar actors have similar patterns of relations with others. Pattern similarity defines social boundaries around reference groups and feelings... creating homogeneous beliefs and behavioral tendencies among equivalent actors" (p. 8). Thus, organizational members are influenced by their role sets. As a specific extension of Burt's assumptions, it could be argued that those individuals who occupy a similar position within the hierarchy will also, through similar communication patterns, feel and perhaps act similar to those who hold the same position within the organization. The same could be said for those individuals who hold the same roles or who interact with the same role sets (Johnson, 1993).

A role is the summation of the necessary requirements defining what the behaviors of a member within a certain position should be. As a way of operationalizing systems, Katz and Kahn (1966) refer to roles as, "the building block[s] of social systems and the summation of the requirements with which such systems confront their members as individuals" (p. 197). Similarly, role expectations are the set of activities that a person is responsible for engaging in as part of her/his position within the organization. These expectations are task-related; however, this is not the limit of their content. They also

provide norms of both professional and social behavior. Expectations can be explicit, implicit, direct, or vague; they can also compete with each other. This is where the concepts of role conflict and ambiguity develop.

Kahn et al. (1964) originally conceptualized both role conflict and role ambiguity as multi-dimensional constructs. In addition, Kahn et al. (1964) proposed two different types of role conflict and ambiguity: subjective and objective. In this sense, objective means quantifiably "real," verifiable conditions in the environment in which contradictory (conflict) or unclear (ambiguity) messages are sent by the role sender(s). Subjective role conflict and ambiguity is the internal, psychological state of the focal person; it is the individual's perceptions of such messages. Kahn et al. (1964) suggested that the existence of one type does not necessarily include the existence of the other type. In other words, if one experiences objective role conflict, she/he may or may not experience subjective role conflict and vice versa.

Role Conflict. Kahn et al. (1964) also created a typology of role conflict. Because individuals receive role expectations at any given time, these expectations can compete with one another. The target individual is said to have psychological conflict because of the pressure from these competing expectations. Thus, the first, and most popularized type of role conflict is, sent role conflict, and is defined as:

> the simultaneous occurrence of two (or more) sets of pressures such that compliance with one would make more difficult compliance with the other. In the extreme case, compliance with one set of pressures excludes completely the

> possibility of compliance with another set; the two sets of pressures are mutually contradictory. (p. 19)

Other types of role conflict include: intra-sender, incompatible role expectations from a member of the role set; inter-sender, incompatible role expectations from two or more members of a role set; inter-role, incompatible expectations from individuals of two or more different role sets; person-role (others refer to this as intra-role), role requirements violate a person's morals, beliefs, etc.; role overload, is the combination of person-role and inter-sender conflict.

The underlying assumption with these different types of role conflict is that a person is able to experience multiple contexts of conflict depending upon the individual's referent organizational network. This possibility is explicated through role theory which specifies that organizational members belong to various role sets, or networks. Because of the vast membership in these networks, conflicts are able to more readily develop. Kahn et al. (1964) gave labels to different types of role conflict to emphasize the many nuances of the construct itself.

The importance of one type of conflict over another may be contingent upon which role set is most salient to organizational members. For instance, duties that a priest may feel contradict his religious morals will probably be more important (at least perhaps the need to alleviate the conflict) than different expectations that come from a fellow priest. That is, it would be expected that the priest may view person-role conflict as a more

important consequence than intra-sender conflict. The significance of one facet of role conflict, then, is contingent upon the context embedded within an individual's role set(s).

It could be argued that intra-sender, inter-sender, and inter-role conflict are common forms of conflict within organizations and thus need to be investigated; therefore, they will be the focus of this paper.

Role Ambiguity. Kahn et al. (1964) define role ambiguity as, "the degree to which required information is [un]available to a given organizational position" (p. 26). Role holders fulfilling that organizational position can experience four types of ambiguity. The first is the uncertainty about the focal person's requirements or scope of responsibilities. The second refers to the uncertainty about the set of behaviors that are necessary to fulfill those responsibilities. Third, the focal person may be uncertain about whose expectations must be met, role sender A or role sender B? Forth, and last, refers to the uncertain consequences of role behaviors on the focal person herself/himself or the organization as a whole.

Together, these four types can be partitioned into two major dimensions of ambiguity: task and socioemotional. The first three types fall under the task dimension where Kahn et al. (1964) suggested that task ambiguity, "results from lack of information concerning the proper definition of the job, its goals and the permissible means for implementing them," (p. 94). The last type, uncertain consequences, falls under the rubric of socioemotional uncertainty where this dimension of ambiguity, "manifests itself in a person's concern about his [her] standing in the eyes of others and about the consequences of his [her] action for the attainment of his [her] personal goals," (p. 94).

Kahn et al. (1964) recognize that not receiving adequate information to perform one's duties can stem from various causes: inadequate communication, availability of information, nonexistent information, etc. All of these factors contribute to the focal person experiencing role ambiguity.

Role conflict and role ambiguity have been explicated in the preceding paragraphs. Kahn et al. (1964) asserted that these two role constructs were expected to be independent of each other and that the simultaneous occurrence of both was unlikely. In addition, from their explication it seems as if role conflict could result from role ambiguity and vice versa, as the definitions of each allow for crossover points (King & King, 1990). Therefore, the relationship between these two role constructs is vague, even as conceptualized by their creators.

Since Kahn et al. (1964), there have been a host of researchers that have used these role concepts to theoretically ground their empirical or conceptual research (Rizzo, House, & Lirtzman, 1970; Lichtman & Hunt, 1971; Schuler, Aldag, & Brief, 1977; Batlis, 1980; Kemery, 1991; O'Driscoll, Ilgen, & Hildreth, 1992; Sawyer, 1992). Each have supplemented or slightly altered Kahn et al.'s (1964) initial explication of role constructs; however, little theoretical work has been developed since the original inception of role conflict and role ambiguity.

Many relationships have been hypothesized between and among role conflict and ambiguity and other variables. Brief and Aldag (1976) reported significant, negative correlations between role conflict and task identity, autonomy, work satisfaction, supervisory satisfaction, and perceived work quality; significant positive correlations were

found for anxiety-stress, tension, and propensity to leave the organization. For role ambiguity, the same study found significant, negative correlations for feedback from job and performance ratings. Likewise, significant, positive correlations were found for anxiety-stress, tension, propensity to leave, and turnover.

Meta-analyses performed since then have corroborated these results. The first meta-analysis of the correlates of role conflict and ambiguity was done by Fisher and Gitelson (1983). Using 42 studies, these researchers found significant, negative mean correlations between role conflict and organizational commitment, job involvement, satisfaction with job (e.g., pay, co-workers, and supervision), and participation in decision making. Role conflict was also found to be significantly related to boundary spanning: those who reported higher levels of role conflict also reported higher levels of boundary spanning activity. Role ambiguity was found to be significantly and negatively related to the same constructs including boundary spanning. In addition, Fisher and Gitelson report that both tenure and age is also negatively correlated with role ambiguity while education was positively related to the same role construct.

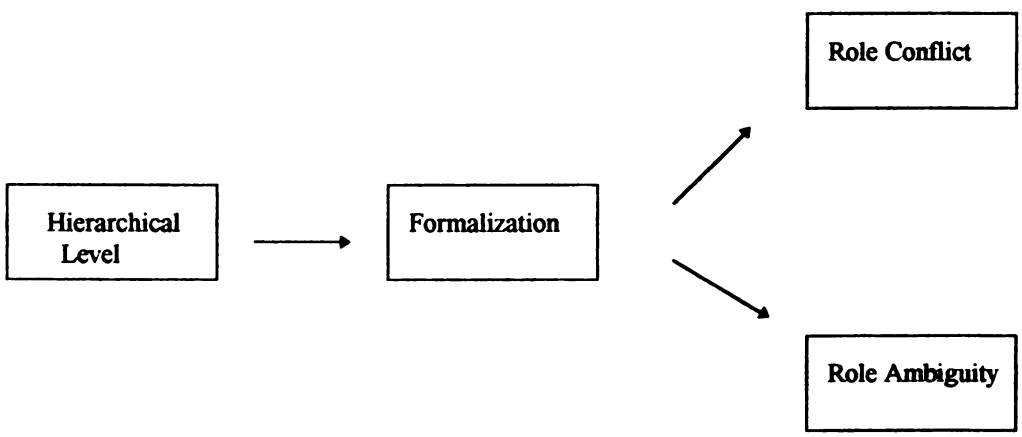
A second meta-analysis of these two variables was offered by Jackson and Schuler (1985). Negative average weighted correlations, which were within a 90 percent confidence interval not containing zero, were reported between role conflict and task identity, feedback from others and task, leader initiating structure, participation, job satisfaction (various aspects), commitment, involvement, and organizational level. Positive average weighted correlations, within the same confidence interval, were found between role conflict and locus of control, task/skill variety, tension/anxiety, and the

propensity of an individual to leave her/his organization. These same relationships were found for role ambiguity, except for three cases. Task/skill variety did correlate with role ambiguity; however, it was negative but not within the confidence interval specified. The second exception was with regard to the locus of control construct, while the correlation was in the positive direction, it was in a confidence interval that did include zero. Most importantly, at least for this study, formalization was negatively correlated with role ambiguity within the 90 percent confidence interval. Note that there was no significant relationship found between formalization and role conflict.

While some of these hypothesized relationships above have been supported or partially supported by research, others have not. The negative relationship between formalization and role ambiguity has repeatedly been shown to exist; however, research on the relationship between formalization and role conflict has demonstrated inconclusive results. Organ and Greene (1981), while finding the traditional strong ($r = -.40$) correlation between formalization and role ambiguity, found that formalization and role conflict were positively correlated ($r = .24$). They attributed this latter relationship to discrepancies between organizational requirements and professional norms. To the contrary, Morris, Steers, and Koch (1979) found a significant, negative relationship between formalization and role conflict. As can be ascertained from above, the nature and strength of the relationship between formalization and role conflict is unclear. Some researchers hypothesize and empirically support a positive relationship, while others anticipate and demonstrate a negative correlation.

The following study was undertaken to offer insight into the relationship between role conflict and formalization by explaining the function of organizational level. More specifically, two avenues will be investigated in an attempt to reconcile these findings. First, a definite, negative relationship between formalization and role conflict will be hypothesized. Secondly, a direct, causal relationship will be applied from a structural variable (formalization) to role conflict. This same model will also examine the relationship between formalization and role ambiguity. Finally, this study will extend previous research by testing the model of the impact of hierarchical level on role conflict and role ambiguity as mediated by formalization. This model is presented in Figure 1.

Figure 1:
Formalization as a Mediator of Hierarchical Level, Role Conflict, and Role Ambiguity



The Model

Hierarchical Level. Past researchers have described the construct of hierarchical level in various ways. Organizational level (Schuler, 1977; Mossholder, Bedeian, & Armenakis, 1981), functional role (Johnson, Meyer, Chang, Ethington, Pobocik, & LaFrance, 1995), and position have also been offered to describe the same conceptualization. For the purposes of this investigation, hierarchical level can be defined as a person's position on a scalar chain within an organization (Jablin, 1987). Graphically, it can easily be seen on an organizational chart where a chief executive officer's position, for example, is fixed at the top of the hierarchical chain and where unsupervisory workers are displayed at the lower level of the chart.

Much research regarding role conflict and role ambiguity have considered hierarchical level as a moderating variable of role stressors and behavioral or psychological outcomes. Schuler (1977) found that organizational level and participation in decision making moderated the relationships among role perceptions, satisfaction, and performance. Likewise, Mossholder, Bedeian, and Armenakis (1981) found that organizational level and self-esteem were moderators of role stressors, satisfaction, and performance. While these moderating relationships were found to be significant, they accounted for a small proportion of the variance in the dependent variables.

Hierarchical level has also been posited as an antecedent to role conflict and role ambiguity. In their meta analysis of both role stressors, Jackson and Schuler (1985) reported that previous research had found no relationship between organizational level

and role conflict nor role ambiguity. This relationship directly contrasts the data that Kahn et al. (1964) initially reported where they hypothesized that higher level employees would experience more role ambiguity because they had more direct contact with the uncertain environment. The task, then, seems to be in determining the position of hierarchical or organizational level within a causal model.

The higher an individual is on the organizational chart, the higher that person's hierarchical level within the organization. Again consider the chief executive officer, an individual who is at one of the highest levels within an institution, who will have fewer written rules, policies, or procedures than an individual at lower levels of the organizational hierarchy. The chief executive officer is often required to fulfill different roles that mandate her/him to perform unique duties at different times; because of this flexibility required of the job, there can be virtually no standardization of operating procedures. In stark contrast, an individual who is stationed at the lower level within an institution's hierarchy, a retail cashier for example, will have very specific, written policies and procedures to follow while performing her/his duties. With this example in mind, it is hypothesized that a higher hierarchical position (the exogenous variable in the model) within an organization will lead to a decrease in the level of formalization an individual will experience.

Formalization. Pierce and Delbecq (1977) conceptualized formalization as, "a form of control employed by bureaucratic organizations, [and] refers to the degree to which a codified body of rules, procedures or behavior prescriptions is developed to handle decisions and work processing" (p. 31). Jablin (1987) notes the explicitness of

formalization. As he states, it is, "the degree to which the behaviors and requirements of jobs are explicit..." (p. 404). Formalization may be achieved through the utilization of procedures manuals, standardization of operating procedures, or the presence of job descriptions. As a result of its importance as an index of organizational structure, formalization has recently been included in the National Organization Study (Marsden et al.1994). For the purpose of this investigation, formalization (the mediating variable) can be seen as the degree to which organizational members perceive the existence of policies, procedures, and rules that precisely define their daily activities. Therefore, the first hypothesis is generated,

H1: A person residing at a higher position within an organization's hierarchy will experience a direct decrease in the level of formalization related to her/his job.

Role Conflict. Role conflict, for this study will be defined as the, "incongruity of the expectations associated with a role" (Van Sell, Brief, & Schuler, 1981). The source or sender of these expectations may vary. Perhaps an organizational member receives contradictory expectations from the same sender or she/he may receive conflicting expectations from more than one supervisor. Kahn et al. (1964) proposed that the communication "style" between the focal person and role sender was an important variable to be considered in the role process. When expectations of the subordinate are contradictory, the quality of communication between the supervisor and subordinate suffer.

In their seminal work, Kahn et al. (1964) theorized that the relationship between formalization and role conflict would be negative. Following this lead, a negative relationship is hypothesized for this study. If an organization is highly formalized (e.g., established, written policies and procedures exist), then the expectations of an individual working under those policies are known. Therefore, the chance that conflict may arise between such expectations decreases considerably. Thus,

H2: A person who has a highly formalized position within an organization will experience a direct decrease in her/his level of role conflict.

Role Ambiguity. As previously stated, role ambiguity has often been conceptualized as the degree to which information regarding a person's role expectations, means of performing organizational duties, or the outcomes of organizational behavior associated with her/his role, is either vague or lacking (Van Sell et al.1981).

Also in keeping with past literature, it is proposed that formalization will also be negatively correlated with role ambiguity. This relationship is intuitive. If there are clear policies and procedures specified for organization members' duties, then their uncertainty on how to perform those duties is greatly diminished. In addition, it is predicted that there is a direct causal relationship between formalization and role ambiguity. Therefore,

H3: A person who has a more formalized position within her/his institution will experience a direct decrease in her/his level of role ambiguity.

Chapter 3

METHODS

This research was conducted in the National Cancer Institute's (NCI) Cancer Information Service (CIS), a geographically-dispersed federal government health information program that disseminates cancer information to the public. The CIS was established in 1975 by the NCI to disseminate accurate, up-to-date information about cancer to cancer patients, the relatives and friends of cancer patients, health care professionals, and to the general public. Over the past 20 years, the CIS has compiled a remarkable record of achievement in fulfilling the critically important function for the NCI (Morra et al.1993a). The public health mandate of the CIS is grounded in the National Cancer Act of 1971 and the amendments to that act made over the past 20 years (Morra, et al.1993b). The core element of the 1971 National Cancer Act that led to the formation of the CIS stipulates that the NCI, "Provide a program to disseminate and interpret... for practitioners and other health professionals, scientists, and the general public, scientific and other information regarding the causes, prevention, detection and treatment of cancer." In response to this mandate, the CIS currently maintains a network of 19 regional offices that are typically linked to NCI-funded regional cancer centers. The activities of the CIS network are coordinated and supervised by the Office of Cancer Communications at the NCI. These activities fall into two broad categories:

1) responding to requests for information over the telephone (the CIS operates a toll-free telephone number, 1-800-4-CANCER, in which callers are automatically triaged to their regional office from response from a professional cancer information specialist, and 2) conducting community outreach activities. The communication outreach programs of the CIS can be further subdivided into mass media campaigns that promote use of the CIS toll-free telephone number and/or encourage specific cancer prevention and control behaviors (e.g., smoking cessation or screening mammography), and more interpersonal community outreach efforts that typically involve working with community intermediaries.

The data used for this investigation were part of the eighth recurring quarterly data collection period of a larger study that took place in August 1995. Each individual participating in the larger project within the CIS was mailed a series of questions relating to various organizational issues as well as a network questionnaire. These questionnaires were sent with a stamped, self-addressed return envelope to the respondents approximately ten days prior to the sample time period. In addition, a personalized letter was included to explain the various issues that would be examined and urge participation in the data collection. Concurrently, an e-mail was sent to all participants to notify them that they would be receiving the questionnaire. In addition, an e-mail was sent the day after the sample time period had concluded and reminded respondents to return their questionnaires. Through these extensive follow-up efforts, a very satisfactory response rate (90 percent) was achieved. A total $\underline{N} = 81$ was the size of the sample.

Operationalization. Hierarchical level was assessed using a directory and organizational chart of the CIS where the following positions were ranked from a higher to a lower level within the hierarchy: National Cancer Institute, Office of Cancer Communications and Public Inquiries (level 1), Principal Investigators (level 2), Project Directors (level 3), Telephone Service Managers and Outreach Coordinators (level 4).

The remainder of the constructs were measured using scales comprised of 11 point, Likert-type items. Formalization, a perceptual self-report instrument, was assessed using five items. These items were used and validated in a previous study investigating perceived organizational innovativeness (Johnson, Meyer, Berkowitz, Ethington, & Miller, 1995). Examples of formalization items are: "The policy and procedures manual for the CIS covers what happens in a typical day;" "Policies and procedures are strictly enforced at the CIS;" and, "I follow established procedures exactly." Standardized alpha was α= .80 for this measure.

Role conflict was operationalized using all eight items from the Rizzo, House, and Lirtzman's (1970) role conflict scale. Six items, addressing different aspects of role conflict, were also added, making the total number of items equal to 14. Examples of such items include: "I have to do things that should be done differently;" and, "I receive an assignment without the manpower to complete it;" "I have to buck a rule or policy in order to carry out an assignment."

Role ambiguity was assessed using all six items from the Rizzo et al. (1970) scale and again an additional five items were included for a total of 11 items measuring the role construct. Items such as the following were included: "I feel certain about how much

authority I have;" "Clear, planned goals and objectives exist for my job;" and, "I know what my responsibilities are." All items were reversed coded so that the higher the number, the more role ambiguity a person would report experiencing. For both scales, Rizzo et al. (1970) had originally used seven-point Likert-type items; as stated earlier, CIS members responded utilizing an 11 point scale.

While there have been criticisms of the Rizzo et al. (1970) scales and conceptualizations (King & King, 1990; Kelloway & Barling, 1990) there has also been support (Schuler, Aldag, & Brief, 1977). Based on these comments and criticisms, additional items were added to these scales to solidify a good measure of both constructs.

In addition, organizational members were specifically asked to respond to each item on two levels: within her/his office and across the CIS network. However, for the purposes of this study, since macro-structural variables were being assessed, so too would the role constructs at a macro level: across the network. Data gathered on role conflict and role ambiguity within individuals' offices are not part of these analyses because these perceptions are held at a more micro level.

Individual item means and standard deviations for the formalization, role conflict, and role ambiguity scales are contained in the Appendix. The basic statistics for the scales averaged across items were as follows: formalization, $\underline{M} = 3.20$, $\underline{SD} = 2.00$; role conflict, $\underline{M} = 4.42$, $\underline{SD} = 2.28$; and role ambiguity, $\underline{M} = 6.94$, $\underline{SD} = 1.61$.

Analysis

Confirmatory Factor Analysis. A confirmatory factor analysis was performed on the data with the initial theory that there were a total of three factors to which 30 items belonged. These factors were role ambiguity, role conflict, and formalization. As a result, a total of eight items were deleted from the matrix. Item number ten from the role ambiguity scale as well as items number 13, 14, 15, 18, 23, 24, and 25 from the role conflict scale were removed (see the Appendix). Another confirmatory factor analysis was performed on the remaining 22 by 22 matrix.

While the standardized item alpha coefficient is an indicator of the reliability of the measure, a more advanced statistical technique will provide two different tests gauging the validity of a scale. Confirmatory factor analysis is such a technique (Hunter & Gerbing, 1982). Three criteria utilized in this type of analysis includes establishing face validity or homogeneity of item content, internal consistency and parallelism.

The 22 items were found to be face valid based on item content; each item appears to be tapping its theoretically-based factor. Internal consistency is a test employed through confirmatory factor analysis to determine if the correlations among the items are as predicted for the factor model. This is ultimately achieved through comparing the obtained versus predicted correlations between items. The larger the difference, the larger the error. The predicted correlations are generated among items one through ten, 11

through 17, and 18 through 22 using the internal consistency theorem. This theorem calculates a predicted correlation by multiplying the factor loadings.

The expected and error correlation matrix, shown in Table 1, displays the residuals for all 22 items in the upper diagonal. While there are some larger errors (e.g., error = .23), the percentage of items for which the errors are greater than sampling error is 4.44 percent for role conflict and 4.76 percent for the role ambiguity scale. For formalization, none of the errors were greater than sampling error.

Table 2 shows the intercorrelation and factor matrix. There seems to be no substantial cross-loadings on any of the factors. For role ambiguity, the factor loadings ranged from .59 to .94, with the highest cross-loading at -.62. The range of factor loadings for the role conflict measurement was from .53 to .86, while the greatest cross-loading value was .33. Last, the range of the factor loadings for formalization was from .43 to .86; the highest cross-loading was -.42 for this factor. Thus, it appears as if all three measurements have achieved internal consistency.

Parallelism, the second test within confirmatory factor analysis, is generated by taking the product of the factor loadings and multiplying that product by the correlation between the constructs themselves. These predicted correlations between items one and ten, 11 and 17, as well as 18 and 22 are also in Table 1. As can be seen, some of the residuals are higher than one would expect or find optimal (e.g., error = .26). The percentage of items for which these errors are larger than sampling error is 3.23 percent. With a sample size of N=81, the size of the residuals, as well as the percentage or errors in proportion to sampling error, was acceptable.

Using confirmatory factor analysis, scale reliabilities were calculated. For role ambiguity, standardized $\alpha = .94$; while the role conflict scale received a standardized $\alpha = .86$. Standardized $\alpha = .79$ was achieved for the formalization scale.

From these four criteria, face validity, internal consistency, parallelism, and standardized reliabilities, one can be confident in all three scales: role ambiguity, role conflict, and formalization.

Path Analysis. To test the above hypotheses regarding the predicted path model, shown in Figure 1, a path analysis was performed on the data (Hunter & Hamilton, 1995). The construct hierarchical level varied in range from one to four, with one being hierarchically higher on the organizational chart. Note that this would then create a positive correlation or path coefficient between hierarchical level and formalization, so that the higher the level the higher the perception of formalization. This coding of the hierarchy was taken directly from the CIS' organizational chart and confirmed by experts within the network.

Table 1

The Expected and Error Correlation Matrix*

#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
1		4	4	3	5	0	8	4	4	2	5	4	2	9	13	13	1	9	3	7	2	20
2	36		12	0	3	3	12	1	15	3	12	6	1	1	9	1	11	12	15	11	26	31
3	45	43		0	1	2	18	5	11	3	8	7	9	2	6	3	2	3	6	3	4	9
4	54	53	65		3	4	5	3	4	1	0	8	7	4	12	9	1	7	6	8	2	14
5	57	55	69	84		1	1	3	2	3	4	6	5	7	3	10	1	10	2	14	5	13
6	56	54	67	82	86		2	1	2	1	4	6	2	1	10	10	13	17	9	17	12	8
7	44	42	53	64	68	66		0	7	2	17	5	20	1	13	3	13	5	11	3	10	1
8	52	51	63	77	81	79	62		5	1	1	11	2	2	7	12	2	2	2	6	5	6
9	50	48	60	73	77	75	59	71		2	4	1	10	10	8	6	3	3	8	4	3	17
10	56	54	67	82	86	85	66	79	75		10	2	16	6	0	1	4	1	2	3	1	10
11	13	12	15	19	20	19	15	18	17	19		7	3	4	8	10	7	23	6	10	21	5
12	16	15	19	23	24	24	19	22	21	24	39		17	2	7	1	4	3	7	0	4	7
13	17	16	20	24	26	25	20	23	22	25	41	51		13	3	5	4	15	3	4	8	5
14	12	11	14	17	19	18	14	17	16	18	30	37	39		8	3	1	17	2	16	9	14
15	17	17	20	25	26	26	20	24	23	26	43	53	55	40		2	6	2	5	2	6	20
16	15	15	19	23	24	23	18	21	21	23	38	48	50	36	52		6	5	5	2	6	22
17	19	19	23	28	30	29	23	27	26	29	48	60	63	46	65	58		18	0	3	10	9
18	-23	-22	-27	-34	-35	-35	-27	-33	-31	-35	-10	-12	-13	-9	-13	-12	-15		13	1	7	6
19	-19	-19	-23	-29	-30	-29	-23	-27	-26	-29	-8	-10	-11	-8	-11	-10	-13	38		12	1	0
20	-29	-29	-35	-43	-46	-45	-35	-42	-40	-45	-12	-16	-17	-12	-17	-15	-19	58	49		7	6
21	-26	-25	-31	-38	-40	-39	-30	-37	-35	-39	-11	-14	-14	-10	-15	-13	-17	50	43	65		0
22	-14	-14	-17	-21	-22	-22	-17	-21	-19	-22	-6	-8	-8	-6	-8	-7	-9	29	25	37	32	

* The lower diagonal contains the expected/predicted correlations (without decimals) for all items; the upper diagonal shows the residuals.

Table 2

The Intercorrelation and Factor Matrix*

#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	RA	RC	F
1	37																						**61**	27	-42
2	40	35																					**59**	29	-62
3	41	31	54																				**73**	20	-33
4	57	53	65	78																			**89**	37	-53
5	62	58	70	87	89																		**94**	35	-47
6	56	57	69	78	85	85																	**92**	43	-37
7	36	30	71	59	69	64	52																**72**	13	-31
8	56	52	68	74	78	80	62	74															**86**	37	-47
9	46	63	49	77	75	77	66	66	68														**82**	29	-47
10	54	57	70	81	83	86	68	80	73	85													**92**	26	-54
11	18	24	7	19	16	23	-2	17	21	9	31												19	**56**	-1
12	12	21	12	31	30	30	14	33	20	22	32	50											28	**70**	-22
13	19	17	11	17	21	27	0	21	12	9	38	68	53										19	**73**	-9
14	3	10	16	13	12	17	13	15	6	12	34	39	26	28									15	**53**	-30
15	30	26	14	37	29	36	7	31	31	26	51	46	52	48	58								33	**76**	-26
16	28	14	16	32	34	33	21	33	27	24	28	49	55	33	54	47							33	**68**	-26
17	20	30	21	29	29	42	10	29	23	25	55	56	59	47	59	64	74						32	**86**	-16
18	-32	-34	-24	-41	-25	-18	-22	-31	-28	-34	13	-15	2	-26	-15	-7	3	45					-36	-9	**67**
19	-22	-34	-17	-23	-28	-20	-12	-29	-18	-31	-14	-17	-8	-6	-16	-15	-13	25	33				-29	-18	**57**
20	-22	-40	-32	-35	-32	-28	-32	-36	-36	-42	-2	-16	-13	-28	-19	-17	-16	59	61	74			-42	-23	**86**
21	-28	-51	-27	-40	-35	-27	-20	-32	-38	-40	10	-10	-6	-19	-9	-19	-7	57	44	58	57		-42	-12	**75**
22	-34	-45	-8	-35	-35	-30	-16	-27	-36	-32	-11	-15	-3	-20	-28	-29	-18	35	25	31	32	19	-37	-26	**43**
RA	**61**	**59**	**73**	**89**	**94**	**92**	**72**	**86**	**82**	**92**	19	28	19	15	33	33	32	-36	-29	-42	-42	-37	**100**	**37**	**-57**
RC	27	29	20	37	35	43	13	37	29	26	**56**	**70**	**73**	**53**	**76**	**68**	**86**	-9	-18	-23	-12	-26	**37**	**100**	**-27**
F	-42	-62	-33	-53	-47	-37	-31	-47	-47	-54	-1	-22	-9	-30	-26	-26	-16	**67**	**57**	**86**	**75**	**43**	**-57**	**-27**	**100**

* The underlined numbers along the diagonal display the reliabilities for each item. The factor loadings are bolded where, RA= role ambiguity, RC= role conflict, and F= formalization

Chapter 4

RESULTS

Correlations. The correlations for the four constructs are shown in Table 3. There was a significant, negative correlation found between hierarchical level and role conflict ($p = .02$). This surprising finding is examined in the discussion section of this paper.

As can be seen, there seems to be no relationship between organizational level and role ambiguity. Again, this may be attributable to the CIS specifically. As a government agency, where the policies and procedures of the daily routine may be firmly established, other environmental elements (e.g., the budget, contract renewals, etc.) contributing to role ambiguity may be more salient to organizational members.

A significant correlation was found between role conflict and role ambiguity. While past research as shown such a correlation, when partialing out their shared antecedent variable, formalization, as well as organizational level, the correlation between the role constructs drops to a non-significant $pr = .22$.

Figure 4 shows the results of the path run. The model provided a poor fit to the data. None of the indirect links were significant (at $p<.05$) and the overall chi-square for the entire model was $\chi^2 = 4.34$, with $df = 3$ ($p>.05$). Despite this finding, two of the three predicted paths had zeroes within their 95 percent confidence intervals. The reproduced correlations for the indirect links were relatively low; between hierarchical level and role conflict, $r=.04$

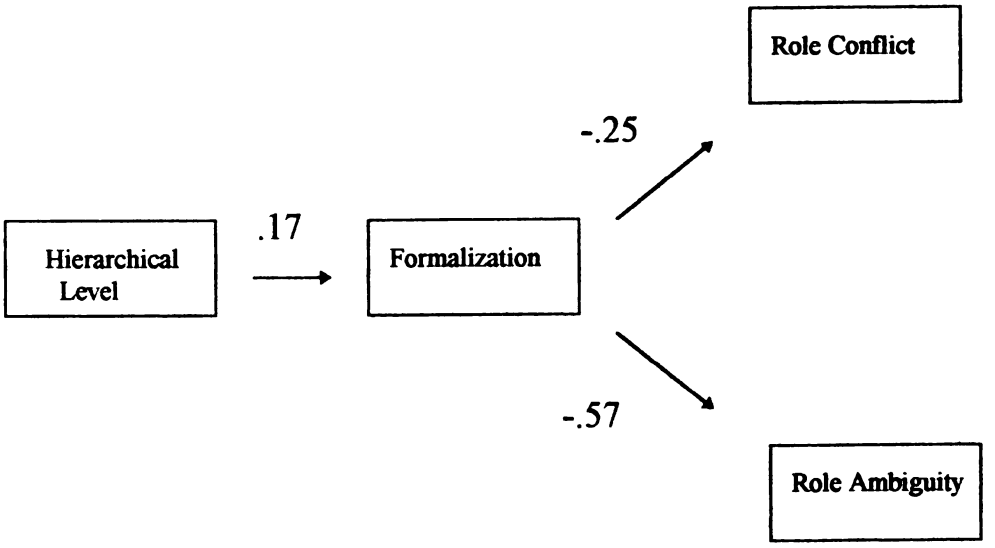
Table 3

Correlations Among Constructs

Variable	Level	Formalization	Conflict
Level			
Formalization	.15		
Conflict	-.29*	-.21	
Ambiguity	-.08	-.49**	.34**

*p<.05. **p<.01

Figure 2
Path Model with Path Coefficients



with r=.10 between level and role ambiguity. Within this model, role conflict and role ambiguity were shown to have a correlation of r=.14.

Hypothesis one was not supported; organizational level was not a significant predictor of the level of formalization experienced by individuals whereby those individuals at the lower level of the hierarchy, overall, did not seem to experience higher levels of formalization ($Path_{level/formal} = .17$). This path had a 95 percent confidence interval that included zero ($-.07 \leq p \leq .41$).

Hypothesis two was not supported by the data in that formalization failed to be an adequate predictor of role conflict ($Path_{formal/role\ conflict} = -.25$). The 95 percent confidence interval around this point ($-.51 \leq p \leq .01$) also included zero.

Hypothesis three was strongly supported by the model. Higher levels of formalization did cause lower levels of role ambiguity ($Path_{formal/role\ ambiguity} = -.57$). The 95 percent confidence interval around this point did not included zero ($-.77 \leq p \leq -.37$).

Chapter 5

DISCUSSION

It is probably most fitting to begin the discussion section with some brief words regarding Rizzo, et al.'s (1970) role conflict and role ambiguity scales. While the scales' inception was achieved through exploratory factor analysis, their continued growth has come from their repeated usage within the social sciences; this has been despite some opposition. King and King (1990) reported problems with the measures and a seemingly lack of convergent and discriminant validity. These authors also criticize the research community whose attention has shifted away from the nomological network of hypothesized relationships first posited by Kahn et al. (1964).

This study attempted to somewhat bridge the gaps between the conceptualizations of role conflict and role ambiguity as well as improving their measurements. Additional items were added to the role conflict and role ambiguity measurements based upon the conceptualizations and theoretical framework initially introduced by Kahn et al. (1964). Using confirmatory factor analysis, half of the items that had to be discarded were Rizzo et al.'s (1970) items. Using this type of statistical validation technique, which is based upon a priori assumptions between and among items and factors, internal consistency and parallelism were successfully achieved. Thus, supporting the new scales purported here.

There has also been support for the Rizzo et al.(1970) scales; however, that support has usually come through the implementation of exploratory, rather than confirmatory, factor analysis (Schuler, Aldag & Brief, 1977). This study offers two new scales that have been scrutinized under four validating elements: face validity, internal consistency, parallelism, and reliability. Through a statistical technique that requires a "theory first" approach, confirmatory factor analysis, along with much theoretical consideration, provides a bridge between the nomological framework and the measurements of role conflict and role ambiguity.

With that stated, additional conceptual work needs to be done with items for each scale. Future research that attempts to measure these role concepts ultimately needs to address the various types of role conflict and ambiguity first proposed by Kahn et al. (1964) to determine their actual existence in the workplace. While Kahn et al.'s (1964) conceptualizations are well-thought out and profound in providing an understanding of role theory, the intricacies of such concepts may be far from distinguishable for organizational members. It may be asking individuals to differentiate between and among the types of role conflict and role ambiguity that contributes to the variation of responses to many of the items.

While this possible dilemma poses no initial threat for the framework of the role constructs, the way researchers measure both role conflict and role ambiguity would have to be altered. Thus, in the "final" analysis, future research must first try to establish the existence of all the types of role conflict and role ambiguity; it is only with this information that future researchers can create measurements that reflect experiences shared by the organizational members who suffer from role conflict and role ambiguity. While this is

proposed for future work and will take time (and perhaps more importantly money), the current study offers a path regarding the salience of certain items. Knowing which items seem to work and those that do not, provides an effective springboard from which other, hopefully better items, can be generated.

This study choose to investigate the relationships between structural variables and perceptions of role conflict and role ambiguity. While it was shown that formalization mediates the relationship between hierarchical level and role conflict/role ambiguity, the path coefficients, not equal to 1.00, seem to indicate that the model should be expanded to include additional variables. Future studies that include informal network measures, such as prominence or power measures, would no doubt contribute invaluable information to the understanding of how role conflict and role ambiguity function within organizations. Which is more important, formal or informal structures on the perceptions of role conflict and role ambiguity as experienced by organizational members? This is an important research question that must be empirically addressed if the research on such topics is to broaden its framework.

Another interesting finding to be further investigated, needs to be addressed in more detail here. The relationship found between hierarchical level and role conflict was a bit of a shock although not shocking. Kahn et al. (1964) had suggested a negative relationship between the two variables. This would seem plausible since those individuals at the lower strata of the hierarchy have more supervisors, who have more messages instructing them what to do and thus increases the chances that a higher frequency of messages are contradictory.

Equally as plausible is an argument that reverses such a relationship. Organizational members at the higher echelons experience different types of conflict pressures today. As organizations compete for ever-dwindling resources, top decision makers must face enormous pressure and demands that often times conflict with their personal beliefs or executive board wants. Take an example where a chief executive officer must make a decision where solution A means laying off thousands of workers or solution B that entails placing her/his organization at risk of bankruptcy (which the board is ardently against). Solution A evokes a moral dilemma (intra-role conflict); solution B could create intra-sender conflict. Taken together, both solutions may embody sent role conflict. Thus, the evidence presented in this study, that moderately support the idea of those members at higher levels within the organization experience more role conflict than those at lower levels, seems to be consistent within organizations today.

Focusing on the organization studied in this investigation may also contribute to this finding. Contractual organizations are often embedded in other, perhaps larger organizations. Such is the case with the CIS, whose 19 regional offices are "housed" within community organizations. This situation may be especially salient for those members who reside in higher positions and who must abide by the sometimes conflicting rules or policies of both the CIS and its host institution. Thus, the negative correlation found between hierarchical level and role conflict is reasonable given the substantiative changes witnessed in organizations today; in addition, this relationship may be especially salient to the CIS specifically.

The confidence intervals around the paths specified in the first two hypotheses included zero ($Path_{level/formal} = -.07 \leq p \leq .41$; $Path_{formal/role\ conflict} = -.51 \leq p \leq .01$). This

nonsignificant finding should lead future researchers to apply different models; specifically, it may be the case that formalization is a moderator, rather than mediator as posed in the current study. Formalization and hierarchical level may both directly contribute to role conflict and role ambiguity.

While offering many insights, this like all other studies, also has a few limitations. The first of which is the static nature of the investigation. As was stated in the previous paragraphs, this study is part of a larger project where future investigations will look at such relationships over time. However, this specific study concentrates on the first point in time when role construct data was collected, therefore creating a strong baseline measurement for the CIS. While it provides insights not already established, many questions regarding time emerge. Do role conflict and role ambiguity have a time factor? Are they static? Are they processes rather than outcomes? Are they cyclical in that everyone experiences either or both at different times in their organizational lives? How long does each last? These important questions can only be answered through longitudinal analysis.

A second limitation that many may find with this research is that it investigates macro- and micro-level variables simultaneously. This "fear" can be somewhat alleviated because the formalization measure is an individual perception measure that rests firmly upon the reality experienced by most CIS members who live with binders and binders of procedures manuals on a daily basis. In other words, the measurement, while on the micro level, closely reflects the macro level (if it were to be indexed). The focus was shifted to only include perceptions of role conflict and role ambiguity across members' offices in an attempt to limit suspicion of this data.

A third limitation to this study possibly includes the former. In doing research, individuals must limit the scope of their topic and considerations. In doing so, they may also eliminate data that possibly hold keys to the locked doors of unanswered questions. While the focus across the CIS offices was necessary, future analysis including within members' offices will hopefully provide further insight to both role constructs. In addition to this type of analysis, other analyses would be fruitful to perform. This would include, but would not be limited to, comparing the means between organizational level and role conflict/role ambiguity. Because the standard deviations for the role conflict items were, in general, larger, this may provide additional information needed to pose new research questions and hypotheses. In addition, regression formulas may also provide detailed information regarding the specific contributions of each variable.

Lastly, a fourth limitation is the measurement of hierarchical level. While formal organizational charts and experts were consulted, the hierarchy within the CIS is complex. As is consistent with the above discussion on new organizational forms, it is difficult to draw perfect hierarchical levels within institutions today. This is the case with the CIS who, as stated earlier, has offices residing in larger organizations. Due to this environment, members have sometimes parallel hierarchies, one for the host institution and one for the larger organization. Individuals' formal reporting relationships are not as clear as they once were; with the increasing types of new organizational structures, the construct of organizational level may have to be measured differently.

In summary, the model in Figure 1 provided a poor fit to the data. Hierarchical level was not a predictor of individuals' perceptions of formalization whereby the lower the organizational level, the higher the perception of formalization. In addition, no

significant relationship was found between formalization and role conflict for organizational members. The strongest, and perhaps most intuitive relationship was found in the negative path between formalization and role ambiguity where the higher one perceived her/his level of formalization within the organization, the lower the perception of role ambiguity.

APPENDIX

APPENDIX

INDIVIDUAL ITEM STATISTICS FOR THE ROLE PERCEPTIONS AND FORMALIZATION QUESTIONNAIRES

Directions: The following statements ask your opinion about the job you perform in the CIS. Each item is designed to tap various attitudes you may have toward specific responsibilities that are associated with your job. We would like you to respond by indicating how much you agree or disagree with each statement on a scale of 0 to 10 where 0 indicates **"total disagreement"** and 10 indicates **"total agreement."** Please answer each question as honestly as possible; as always, all responses will remain strictly confidential.

*Role Ambiguity**	*Within* your office	*Across* the CIS network
1. I feel certain about how much authority I have.		M = 4.1 SD=2.7
2. Clear, planned goals and objectives exist for my job.		M = 3.7 SD = 2.5
3. I know that I have divided my time properly.		M = 3.1 SD = 2.4
4. I know what my responsibilities are.		M = 2.5 SD = 2.4
5. I know exactly what is expected of me.		M = 3.1 SD = 2.3
6. Explanation is clear of what has to be done.		M = 3.3 SD = 2.2
7. I am confident in performing my duties.		M = 2.3 SD = 1.9
8. I feel certain how I will be evaluated.		M = 3.7 SD = 2.6
9. The duties that come with my job are clear to me.		M = 2.9 SD = 2.5
10. My job duties change with time.**		M = 2.2 SD = 2.8
11. I typically know what is expected of me as part of my job.		M = 2.8 SD = 2.3

* Items 1-6 are from Rizzo et al. (1970).

** Item was removed from analysis.

Directions: The following statements ask your opinion about the job you perform in the CIS. Each item is designed to tap various attitudes you may have toward specific responsibilities that are associated with your job. We would like you to respond by indicating how much you agree or disagree with each statement on a scale of 0 to 10 where **0** indicates **"total disagreement"** and **10** indicates **"total agreement."** Please answer each question as honestly as possible; as always, all responses will remain strictly confidential.

*Role Conflict**	*Within* your office	*Across* the CIS network
12. I have to do tasks that should be done differently.		M = 5.8 SD = 3.1
13. I receive an assignment without the manpower to complete it.**		M = 4.9 SD = 3.1
14. I have to buck a rule or policy in order to carry out an assignment.**		M = 3.0 SD = 2.7
15. I work with two or more groups who operate quite differently.**		M = 6.9 SD = 3.2
16. I receive incompatible requests from two or more people.		M = 4.3 SD = 3.0
17. I do things that are apt to be accepted by one person and not accepted by others.		M = 5.3 SD = 3.1
18. I receive an assignment without adequate resources and materials to execute it.**		M = 4.9 SD = 3.1
19. I work on unnecessary tasks.		M = 3.9 SD = 3.0
20. I often find conflicting rules and procedures for my job duties.		M = 4.4 SD = 3.1
21. My supervisor and colleagues have contradictory expectations of me.		M = 3.3 SD = 3.0
22. There are important differences between what I expect as part of my job responsibilities and what others expect.		M = 4.2 SD = 3.0
23. I personally disagree with some of the tasks that are expected of me as a result of my position.**		M = 3.4 SD = 3.0
24. My job description is not compatible with what I feel should be doing.**		M = 2.9 SD = 2.5
25. I do not have enough resources to complete my job responsibilities.**		M = 5.0 SD = 3.2

* Items 12-19 are from Rizzo et al. (1970).

** Items were removed from analysis.

CIS INNOVATION SURVEY

Directions: The following statements deal with your opinions about the climate for **intervention strategies** within the CIS nationally. Intervention strategies are initiatives that relate to the development or implementation of new methods for reaching target audiences such as counseling protocols for special target populations, targeted outreach activities using the telephone, responses to calls associated with communication campaigns, and other national initiatives like those developed by this program project.

We would like you to respond by indicating how much you agree or disagree with each statement on a scale of 0 to 10 where **0** indicates **"total disagreement"** and **10** indicates **"total agreement."** Please answer these questions for the CIS as a whole, rather than focusing on purely local concerns.

Formalization	
1. The policy and procedures manual for the CIS covers what happens in a typical day.	M = 6.7 SD = 2.07
2. Policies and procedures are strictly enforced at CIS.	M = 7.06 SD = 2.02
3. I follow established procedures exactly.	M = 6.74 SD = 2.10
4. My job requires that I comply with set procedures	M = 7.33 SD = 2.38
5. My job description is similar to what I actually do when I am at work.	M = 6.96 SD = 2.09

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