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THE IMPACT OF ROLE STRAIN ON THE PERFORMANCE
OF SALESPEOPLE: A MULTIDIMENSIONAL RELATIONSHIP

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THE IMPACT OF ROLE STRAIN ON THE PERFORMANCE OF SALESPEOPLE:

A MULTIDIMENSIONAL RELATIONSHIP

A theoretical process model defining two different types of coping behaviors relating to role strain and performance is developed. A new analysis methodology, based on Confirmatory Canonical Variate Analysis, is applied to test several predictions derived from the model. It is shown that role strain is both negatively and positively related to performance and that personality and demographic variables determine the directionality of the relationship. Several implications for sales force management can be drawn from the study results.

Introduction

Effective sales force management requires an understanding of the relationships between salesperson performance and organizational factors that affect this performance. Factors which substantially affect sales performance need to be pinpointed as major areas for managerial input. And, the mechanisms underlying the relationships need to be investigated to suggest strategies for managing and controlling the sales force.

Past research has identified a number of organizational, situational, and personality variables that have an impact on job performance and job satisfaction. The Michigan model of role stress (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964) identifies role conflict, role ambiguity, and role overload as three critical sources of stress in organizations. Job holders experience role strain as a consequence of these factors. Among the outcomes of role strain that have been investigated are attitudinal constructs such as dissatisfaction, job interest, innovation, and propensity to leave the organization (e.g., Donnelly & Ivancevich, 1975; Hamner & Tosi, 1974; House & Rizzo, 1972; Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964; Johnson & Stintson, 1975). Some studies have also investigated the relationship between role variables and performance. This relationship is an important one, for, as Hickson (1960) argues, the specification of roles is the major control variable available to organizational designers. Since performance is a valued outcome in organizations, its relationship to controllable role variables is obviously an important area for study.

However, the research studies that have examined the link between role strain and performance have been relatively few and have yielded inconsistent results. For instance, House and Rizzo (1972) and Bagozzi (1978) reported a negative correlation between role strain and performance. Schuler (1975)

found the same negative relationship, but only at the lower levels of the organization. On the other hand, Tosi (1971) failed to find any relationship between role strain and performance. Berkowitz (1980) also reported insignificant correlation between role strain and objective performance indicators. Another problem with these studies is that limited attention has been directed at identifying the processes that account for the obtained relationships between role strain and performance. Finally, the impact of variables that may moderate the role strain-performance relationship, such as individual differences, has yet to be examined.

The purpose of this study is to examine two facets of the role strain-performance relationship that have not been addressed in previous research: (1) the processes responsible for the relationship between role strain and performance and (2) the impact of individual differences variables on the role-strain performance link. To achieve these objectives, patterns of coping behavior initiated in response to increasing role strain are identified and related to their impact on job performance. Then a model, which draws upon theories of organizational stress and describes how individual difference variables and patterns of coping behavior may be related, is presented. This model forms the basis for hypothesized relationships between individual factors and the role strain-performance link. A new methodology for the testing of these hypotheses is developed and applied to measures of individual difference variables and role strain-performance in an industrial selling context. Finally, implications for sales force management and suggestions for future research are outlined.

Role Strain and Coping Responses

Individuals occupying sales positions are often expected to fulfill a variety of expectations communicated by both customers and management.

Customers demand lower prices, faster shipments, and special orders, whereas management asks for higher sales and reduced operating expenses. According to Pruden (1969), the salesperson is "the man in the middle. He is caught in the middle of the inherent conflict between seller and buyer...."

The demands introduced by the diversity of role expectations often give rise to role conflict, role ambiguity, and job overload—all factors which contribute to role strain. In response to these perceived pressures, individuals may adopt behavioral patterns to cope with the increasing stress of the conflict, ambiguity, and overload.

The responses of individuals faced with stress have been the focus of several theoretical models. These models focus on the coping activities used by the individuals in response to the perceived environmental demands. The two broad categories of coping activities which are delineated are behavioral (Type I) coping and intrapsychic (Type II) coping (Mechanic, 1962; Vroom, 1964; Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964; Lazarus, 1966; White, 1974; Lazarus & Launier, 1978; Valliant, 1977).

The first kind, behavioral coping, refers to activities individuals undertake to attain valued outcomes when faced with stress. These activities include increased information seeking (Lazarus, 1966) and taking direct action, such as exerting higher levels of effort (Hall, 1972). The basic psychological mechanism responsible for increases in such types of activities is the increased arousal induced by the stressful environment.

Behavioral coping has been shown to be an effective way of handling a variety of stress stimuli. Janis (1958) found information seeking to be a response to the stress of undergoing surgery. Mechanic (1962) found that an increase in the stress felt by candidates for a Ph.D. qualifying examination led to more studying on their part. Finally, Hall (1972) reported that women

respond to the stresses of managing dual career families by exerting higher levels of effort.

The net impact of these coping activities on role strain and performance can be seen more clearly if we realize that these activities are characteristically task-relevant and problem-oriented. For example, salespersons may search for information about their customers, products, etc., when faced with role-related pressures. Their effectiveness as salespeople will increase as a result. Recall, however, that this behavior occurs under conditions of increasing role strain. In sum, behavioral coping activities will lead to a positive relationship between role strain and performance.

The other kind of coping, intrapsychic coping, consists of actions that aid the individual in accepting the present position without altering it. Humor (Mechanic, 1962), cognitive defense mechanisms (Lazarus, 1966), or changing perceptions of the situation (Hall, 1972) are all instances of intrapsychic coping activities. These activities focus on the reduction of felt stress and anxiety. Consequently, they may be quite detrimental to the attainment of job-related tasks and goals. For instance, as felt role strain increases, a salesperson may respond by simply denying the existence of conflicting demands or by reducing the flow of such anxiety-raising information. However, this can impede the flow of task-relevant information and reduce the individual's motivation to engage in problem-solving behaviors, thus decreasing performance. Thus, intrapsychic coping would result in a negative relationship between role strain and performance.

The coping processes described imply that role strain and performance can be related in both a positive and a negative fashion. If so, this may account for the fact that previous studies relying on zero-order correlations have yielded inconsistent results. Such a multidimensional relationship cannot be

investigated by examining the zero-order correlation between role strain and

performance, because the presence of both negative and positive relationships

in the data tends to cancel out. It should be noted that we are not suggest-

ing a curvilinear relationship (which would also tend to nullify the simple

correlation coefficient). Instead, both processes operate simultaneously,

and the extant levels of each vary from individual to individual.

Together, these processes explain an individual's overall reaction to

role strain and the impact of role strain on his or her performance. For

example, if an individual is more inclined to respond to role strain with

Type I responses rather than Type II responses, role strain will result in

better performance.

The levels of Type I and Type II coping responses exhibited by an

individual may depend upon a variety of factors that exist in a particular

situation or organization. Perhaps the most important factor is the individ-

ual himself. Some people feel less stress than others or consider stressful

situations challenging. Others become paralyzed when confronted with stressful

situations and experience difficulty in handling such problems. Thus, indi-

vidual differences can affect patterns of coping responses.

Coping Responses and Individual Differences

Individual difference variables have typically been studied in terms of

their direct impact on either role strain or performance. They have also

been studied in terms of how they are used to moderate the relationship

between role strain and some outcome variable (e.g., satisfaction). Studies

in this vein have investigated, among other traits, introversion-extroversion

(Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964), need for clarity (Lyons, 1971),

and need for achievement (Johnson & Stintson, 1975).

In contrast, this study considers the impact of individual difference variables on coping behaviors. It is through these coping responses that individual difference variables have an impact on the role strain-performance relationship. Two classes of individual difference variables are examined: (1) demographic variables and (2) personality variables.

Demographic Variables

The empirical studies relating role strain to demographics present inconclusive results. For instance, Indik, Seashore, and Slesinger (1964) found no generalizable relationships between age, education, and role strain. However, Wolfe and Sneok (1962) found that age and education were negatively associated with role strain. They suggested that an adaptability or coping phenomenon could account for the age relationship. Older people are considered to have acquired, through experiential learning, an ability to live with stressful job demands, and hence do not perceive as high a level of role strain as do younger people.

This notion of adaptability can be used to predict the impact of age on the Type I and Type II processes previously outlined. It can be expected that an older person is relatively more skilled at task-related behaviors as a result of experiential learning over time. Consequently, increasing levels of stress should produce relatively higher levels of problem-solving behaviors. Older individuals should be more capable of activating the Type I process. In addition, these individuals have learned to live with strain and are, therefore, less motivated to reduce the level of felt role strain. They should be more skilled at focusing on relatively more important and informative cues and be largely able to screen out the anxiety-raising aspects of the role. In sum, age should correlate positively with Type I processes and negatively with Type II processes.

Experience, the second demographic variable studied here, should have a parallel effect on these processes. Experience, like age, affects Type I and Type II processes through an adaptability phenomenon. An experienced person has become, through experiential learning, relatively more skilled at problem-solving and also at screening some of the anxiety-raising aspects of the role. Thus, experience should also correlate positively with Type I and negatively with Type II processes.

Personality Variables

Self-esteem and conformity are the two personality traits included in this study. Generalized self-esteem is viewed as a relatively enduring trait that is defined as the extent to which one views oneself as a competent, need-satisfying individual (Korman, 1970). Korman's theory of work motivation suggests that individuals in organizations choose interpersonal behaviors and effort levels that maximize the consistency between their self-esteem and the demands of a job. This consistency principle will work to move people with high self-esteem out of jobs that are incongruent with their perceptions of their own abilities. Thus, a match between perceived ability and demands can be expected for individuals with high self-esteem. Its net impact is to raise the level of Type I processes; the self-selection phenomenon described above will tend to increase the capacity to evoke problem-solving behaviors.

The impact of self-esteem on Type II processes can also be examined in a similar fashion. From the above discussion, it follows that high self-esteem tends to make an individual more selective in terms of the manner in which sent role expectations are accepted. Further, individuals with high self-esteem are less responsive to social influence (Marlowe & Geegan, 1969), which makes them relatively less likely to perceive all of the conflicting role expectations

and informational ambiguity that produce role strain. This selectivity and resistance to influence combine to reduce the motivation to evoke intrapsychic coping mechanisms. In sum, self-esteem can be expected to correlate negatively with Type II processes.

Conforming individuals tend to be more susceptible to social influence and group pressures. They tend to modify behaviors in order to be consistent with externally set standards. In fact, conformity has been defined as "changes in behavior or belief toward a group as a result of real or imagined group pressure" (Kiesler & Kiesler, 1969, p. 2). Such individuals, when placed in roles with a great deal of conflicting expectations, attempt to conform to these expectations to a greater degree than others. In other words, conforming individuals tend to accept social influence or sent role expectations in a relatively less discriminating fashion. Therefore, they are likely to experience a higher degree of role strain than nonconformers. However, the increased perception of sent role expectations on the part of conforming individuals provides them with increased amounts of task-relevant information which should enhance their ability to evoke problem-solving behavior and, hence, improve their performance. It is hypothesized that the net impact of high role strain counter-balanced by increased task-relevant information will result in raising the level of Type I processes.

With regard to Type II processes, a conforming individual accepts relatively more influence or sent role expectations and thus is less likely to evoke intrapsychic coping responses to reduce felt role strain. This is the case partly because such individuals perceive that the felt strain is the consequence of their voluntary action (i.e., accepting conflicting expectations) and partly because they have grown accustomed to relatively greater degrees of

conflicting expectations arising from their greater acceptance of social influence. Thus, conformity can be expected to reduce levels of Type II processes.

Table 1 summarizes the predicted associations between the independent variables (age, experience, self-esteem, and conformity) and the Type I and Type II processes associated with the role strain-performance relationship. Figure 1 summarizes the overall model and the various constructs.

Insert Table 1 and Figure 1 About Here

Method

Sample

The data were gathered from a large firm that manufactures and markets pharmaceutical and health products. Respondents were the 300 salespeople that constituted the company's sales force. These respondents were requested to complete a questionnaire pertaining to felt role strain, personality traits, and demographic characteristics. Two hundred and seventy-five questionnaires were returned (a response rate of 91%). Performance data were obtained from company records.

It was known from past research that a salesperson sample would be likely to exhibit considerable variation on the variables of interest, especially role strain. As Kahn, Wolfe, Quinn, Snoek, & Rosenthal (1964) and others have pointed out, personnel occupying positions that cause them to come into contact with role senders from outside the organization are in particularly stressful situations. The structure of the sales force studied in this investigation was such that there were wide variations in the number and diversity of role senders. Finally, the local sales force was monitored by a number of performance indices which afforded multiple measures of this construct. In sum, the setting appeared highly appropriate for testing the specified hypotheses.

Measures

The Job Related Tension (JRT) Index (Kahn, Wolfe, Quinn, Snoek, &

Rosenthal, 1964) was used to measure felt role strain. This 15-item index

(α = .818) is composed of four basic facets of role strain as subjectively

experienced: (a) direct conflicts, (b) job overload, (c) ambiguity (specif-

ically as related to information required for effective job performance), and

(d) problems arising out of the necessity of exerting influence without

legitimate authority.

Self-esteem and conformity were measured with the Jackson Personality

Inventory (JPI) (Jackson, 1967). The JPI consists of 16 scales. The entire

instrument was administered to the respondents, but only the measures on

self-esteem and conformity were retained for this study. The JPI has been

shown elsewhere to have adequate reliability and convergent and discriminant

validity (Jackson, 1967). In this study, the reliabilities for conformity

and self-esteem were .787 and .717, respectively.

Age and experience were measured via questionnaire items. Four different

measures of experience were taken, all of which were found to be strongly

intercorrelated (in the .80 to .90 range).

Three performance measures were available from company records:

(1) market share attained by a salesperson in his/her territory; (2) change in

sales volume attained relative to that attained in a comparable past period,

and (3) subjective management rankings. The model intercorrelations (Table 2)

indicate that the three measures do not seem to be measuring the same con-

struct. Of the three measures, the most relevant appears to be the subjective

management rankings, because performance is, in actuality, normatively defined

by management. Subjective management rankings are likely to be the basis for

allocating rewards within the company, and they would tend to be viewed by the respondents as the performance dimension by which their behavior is judged, because such rankings take into consideration both objective and subjective data. The more objective measures of performance can be used as proxy variables for the ranking measure in order to provide consistency checks on the obtained results.

Insert Table 2 About Here

Analysis Procedure

In order to allow testing of the hypotheses, composite measures of strain and performance are formed. Operationally, the hypothesized relationships between strain and performance may be written as two linear functions in the same space: one with a positive slope (Type I) since they correlate positively as the consequence of behavioral coping; the other with a negative slope (Type II) since they correlate negatively as the consequence of intrapsychic coping. Consequently,

(1) Type I behaviors $= b_{11}p + b_{12}rs$, and

   Type II behaviors $= b_{21}p - b_{22}rs$,

   where p = performance ($p \geq 0$) and rs = role strain (rs ≥ 0).

The equations summarizing the whole set of hypotheses can be written:

(2) $b_{11}p + b_{12}rs = c_1(w_{11}ag + ex + w_{13}se + w_{14}co) + u_1$, and

   $b_{21}p - b_{22}rs = -c_2(w_{21}ag + w_{22}ex + w_{23}se + w_{24}co) + u_2$,

   where ag = age (ag ≥ 0), ex = experience (ex ≥ 0), se = self-esteem (se ≥ 0), and co = conformity (co ≥ 0).

The simultaneous testing of the hypotheses expressed in (2) can be accomplished by forming linear variate pairs of the variables on both sides of the equations. Note that the criterion variables, Type I and Type II behaviors, are defined as linear combinations of actual observations. As a result, it is not possible to employ traditional methods of hypothesis testing. Instead, we will have to use statistics associated with the testing of (1) variate relationships and (2) similarity of equation structure.

Ordinary Least Square or maximum likelihood can be used to estimate the parameters of equations (2) if certain restrictions are imposed. It is assumed that the random disturbances u_i have zero means and constant variances, and that the c_j are symmetrical. Other restrictions of variances are standardization of parameter coefficients (b_{ij}, w_{ij}), and orthogonality for variates (except, of course, for corresponding pairs). Maximum likelihood also requires distributional assumptions that our data failed to meet. Consequently, least squares was used to estimate the model parameters.

Using two criterion variables for two equations, we obtain a full rank canonical solution. As has been shown by Cliff and Krus (1976), a canonical solution with more than one variate pair may be rotated without violating the substantive properties of the original solution. By the postmultiplication of both criterion and explanatory set loadings to the same orthonormal transformation matrix, the sum of the canonical correlations ($c_1 + c_2$) will not change. At the same time, it is possible to relax the identification constraint of cross-variate independency.

For any hypothesis testing study, it is desirable that a unique solution is obtained. Since the directionality of all variable relationships has been specified in equations (2), a target matrix with +1.00 and -1.00 entries for the loadings (Table 3B) is constructed. By maximizing the fit between this

matrix and the canonical loadings matrix, we will find a unique solution,

given certain restrictions. Following the work of Green (1952) and Cliff

(1966) in rigid factor rotation, Schönemann's (1966) confirmatory Procrustes

rotation was applied to the original canonical variates. Thus, we form a

matrix $\underset{\sim}{Z}$ from the target matrix $\underset{\sim}{T}$ and the empirical (canonical loadings)

matrix $\underset{\sim}{L}$:

$$(3) \quad \underset{\sim}{Z} = \underset{\sim}{L}'\underset{\sim}{T}.$$

We extract the eigenvectors of $\underset{\sim}{Z}'\underset{\sim}{Z}$, $\underset{\sim\sim}{ZZ}'$, and $\underset{\sim}{V}$ and $\underset{\sim}{P}$ from the equations:

$$(4) \quad \underset{\sim}{Z}'\underset{\sim}{Z} = \underset{\sim\sim\sim}{VYV}', \text{ and}$$

$$\underset{\sim}{Z}\,\underset{\sim}{Z} = \underset{\sim}{P}\,\underset{\sim}{Y}\,\underset{\sim}{P}',$$

where $\underset{\sim}{Y}$ is the diagonal matrix of eigenvalues. The transformation matrix is

$$(5) \quad \underset{\sim}{Q} = \underset{\sim}{P}\,\underset{\sim}{V}'.$$

The confirmatory Procrustes solution is given by

$$(6) \quad \underset{\sim}{T}^* = \underset{\sim}{Q}\,\underset{\sim}{L}.$$

Since Q is chosen in such a way that the matrix of errors ($\underset{\sim}{E} = \underset{\sim}{T} - \underset{\sim}{T}^*$) is mini-

mized in a least squares fashion, the solution is unique and may be tested for

convergence. To assess the similarity between $\underset{\sim}{T}$ and $\underset{\sim}{T}^*$, the coefficient of

congruence (CC), as suggested by Wrigley and Newhaus (1955), is used. This

measure is sensitive to pattern as well as magnitude differences in the two

matrices.

Results

The main hypothesis concerning the existence of two independent coping

behaviors (Type I and Type II) is strongly supported by the data. The results

are presented in Table 3. For the overall pattern and magnitude of loadings

coefficients, the congruence (CC) is very high (.92), indicating a strong

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Insert Table 3 About Here
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similarity between the hypothesized target matrix and the obtained empirical results. While Oblique Procrustes methods often show extremely high congruence, it should be kept in mind that the orthogonal rotation used here does not capitalize on "free" intra-set variate correlations. As in the canonical correlation method, these correlations are not allowed to "improve" the fit, and are therefore set to zero. In fact, the canonical solution supports the findings of two different coping behaviors. Both canonical correlation coefficients are significant (at .001 and .002, respectively), and the loadings exhibit strong similarity to the target loadings (CC = .79). The first canonical variate shows a positive relationship between performance and role strain (as evidenced by the loadings of .81 and .44), thus representing a Type I response. Conversely, a Type II response is evident in the second variate where performance and role strain are negatively associated (as evidenced by loadings of -.58 and .90). Exactly the same interpretations flow from the rotated Procrustes solution.

The validity of the coping responses finding was further examined by performing similar analyses using change in sales and market share as performance variables. Because these variables are moderately correlated with management judgment concerning the performance of salespersons (Table 2), weaker relationships were expected. As seen in Table 4, the Type I process captures most of the shared variance. The residual variation for the second pair (the Type II process) is too small to be statistically significant. However, the direction and overall pattern of variable relationships remain unchanged.

Insert Table 4 About Here

The impact of the predictor variables on Type I and Type II processes is assessed by inspecting the loadings in the Procrustes solutions (Table 3C).

Similar to factor analysis, a confirmatory canonical loading is the correlation between an observed variable and a corresponding variate (component). With least squares estimation, there is no direct statistical test for the significance of canonical loadings. To some extent, the analyst has to rely on subjective judgment in determining whether or not a particular variable relationship is substantial enough to warrant interpretation. The cutoff point for a loading coefficient is affected by sample size and the total number of variables in the solution. The lower the ratio of sample size to the number of variables, the higher the loading that is required. For studies involving a sample size larger than 200 and fewer than 10 variables (as in this analysis), it is probably safe to regard a factor loading above .15 as statistically different from zero (Child, 1970). Translated into the confirmatory canonical analysis, where only criterion sets are interpreted as constructs, this would imply a cutoff value of .15 for the criterion set loadings and $.15/c_j$ for the explanatory set loadings (i.e., .44 for the first variate and .38 for the second).

Accordingly, Table 3 indicates that experience and age are positively related to Type I and negatively related to Type II (although the age loading of -.36 falls somewhat short of the established cutoff value of .38). As for the personality variables, self-esteem, as hypothesized, is positively related to Type I and negatively related to Type II. Conformity is strongly related to Type I in the expected direction and weakly related to Type II. Although the latter is not in the predicted direction, the loading of .29 falls below the cutoff value for this variate and cannot be considered as statistically different from zero.

In summary, the hypotheses derived from the coping behaviors model, except for those relating Type II and conformity, were supported by the results. In

particular, the two-dimensional nature of the role strain-performance relationship found strong support. Experience was positively related to the problem-solving (Type I) process and negatively related to the intrapsychic coping (Type II) process. Both conformity and self-esteem were positively related to the behavioral coping process. Self-esteem was also negatively related to the intrapsychic coping process.

Discussion and Implications

The multidimensional relationship between role strain and performance that was developed by drawing on the notion of coping responses was supported strongly in the present study. The two types of relationships emerged in all of the models tested. Additionally, our predictions regarding the impact of the predictor variables on these relationships were, by and large, supported. For instance, we used the notion of experiential learning to predict the impact of age and experience. Both of these variables correlated positively with the Type I response, thus lending support to the idea that experienced job holders will tend to increase performance when faced with stressful job roles. Conversely, these variables correlated negatively with the Type II response, which suggests that increased role strain is less likely to reduce performance of experienced workers because these workers do not need to evoke intrapsychic coping activities as much as less experienced individuals.

With regard to the personality variables, we used a cognitive consistency explanation to generate our predictions about self-esteem. These predictions were supported very well. Self-esteem reduced the levels of intrapsychic coping and increased behavioral coping. Conformity was also expected to increase behavioral coping and reduce intrapsychic coping; however, we found that conformity tended to increase both kinds of coping. Unexpectedly, the

data showed that conformity was not negatively related to the Type II process (or intrapsychic coping responses). A possible explanation for this may be found in the nature of the selling job. Personal selling is very prone to conflicting role expectations. When this stress is compounded by the conformist's propensity to accept social influence, the resulting levels of strain may be so high that intrapsychic coping becomes essential, and the net impact of conformity in this context might be to increase the levels of intrapsychic coping.

There are several theoretical, methodological, and managerial implications that emerge from this study. Earlier studies found positive, negative, and no relationships between role strain and performance. From a theoretical perspective, the present study, by delineating a set of processes that relate role strain to performance and other constructs, it provides a possible explanation for the inconsistent results obtained previously. Given the two opposite relationships that exist simultaneously between role strain and performance, the net zero-order correlation is an index composed of conflicting items, and its size and sign would depend on the levels of each relationship. Consequently, different samples with different absolute values on role strain and performance would generate inconsistent results.

Although our explanation for the divergent results produced by previous studies is supported by the notion of behavioral and intrapsychic coping processes as well as by the data, more work needs to be done to test the process explanations more directly. For instance, future research might focus on direct measures of the two types of coping responses that are posited to intervene between felt strain and performance. Anderson (1976) obtained such measures in a field study of performance under stress, but no validity or reliability results were reported. This line of inquiry, giving explicit

attention to the processes, seems more likely to yield a better understanding of the phenomena involved, in contrast to the often bivariate tests of theoretical models that have been employed in the past.

Methodologically, the study demonstrates the utility of confirmatory canonical analysis in the testing of multidimensional relationships. The relationships could not have been uncovered or tested via traditional correlation and regression techniques, because these techniques do not describe multidimensional relationships between variables. Admittedly, a stronger test would involve directly measuring the coping processes and then estimating the resulting regression models. Our data did not lend themselves to this type of analysis.

The managerial significance of the results relating self-esteem and conformity to performance is to temper the enthusiasm with which researchers interpret zero-order correlation coefficients or regression weights between such variables and performance and to use them to prescribe norms for personnel selection. Such interpretations are valid only if the underlying mechanisms are understood and empirically supported. For instance, the experiential learning mechanism seems to be supported quite strongly by the findings relative to age and experience effects. Thus, if reduction of role strain is a managerial goal, it could be achieved by facilitating experiential learning. Strategies to do this would include hiring experienced personnel and implementing a policy of lateral transfers for new employees to increase the variety of situations experienced. Role-playing exercises and simulation games would also boost experiential learning.

There are several other managerial implications of the findings. Consider, for instance, the two-dimensional nature of the role strain-performance relationships. It is usually believed that increased role specificity (through

the development of formal job specification and formal communication channels)
would lead to decreases in role conflict and ambiguity and, hence, in felt
role strain. This strategy to reduce role strain has often been prescribed
as a means of reducing negative outcomes, such as the level of job dissatis-
faction that comes with role strain. However, viewed within the framework of
the mechanisms isolated in this study, such a strategy may actually have
deleterious effects with respect to performance. Because the mechanisms them-
selves determine performance, management efforts should attempt to affect them
directly, rather than to affect the levels of the role variables (e.g., role
conflict and ambiguity). For example, if a selling job is too stressful,
management efforts should be directed at increasing Type I responses rather
than simply helping individuals reduce strain. A possible way of doing this
would be to teach salespersons to respond to information ambiguity by actively
searching for further information that could potentially resolve or reduce
inconsistencies. A commonly used alternative approach--formalizing roles and
communication channels--would decrease performance because, as was mentioned
above, although it would reduce information ambiguity, it would also block out
potentially valuable information relevant to task performance.

Table 1

Summary of Hypotheses

	Type I	Type II
Age	(+)	(−)
Experience	(+)	(−)
Self-esteem	(+)	(−)
Conformity	(+)	(−)

Figure 1

Model of Coping Responses

```
                                              Role Strain
 ┌─────────────────────────────────────          (+)
 │                                            Performance
 │
 │                         Behavioral Coping
 │                             (Type I)
 │
 │
 │
 Individual              Patterns of
 Difference              Coping
 Variables               Behavior
 │
 │
 │                       Intrapsychic Coping
 │                            (Type II)
 │
 │                                            Role Strain
 │                                                (−)
 └─────────────────────────────────────       Performance
```
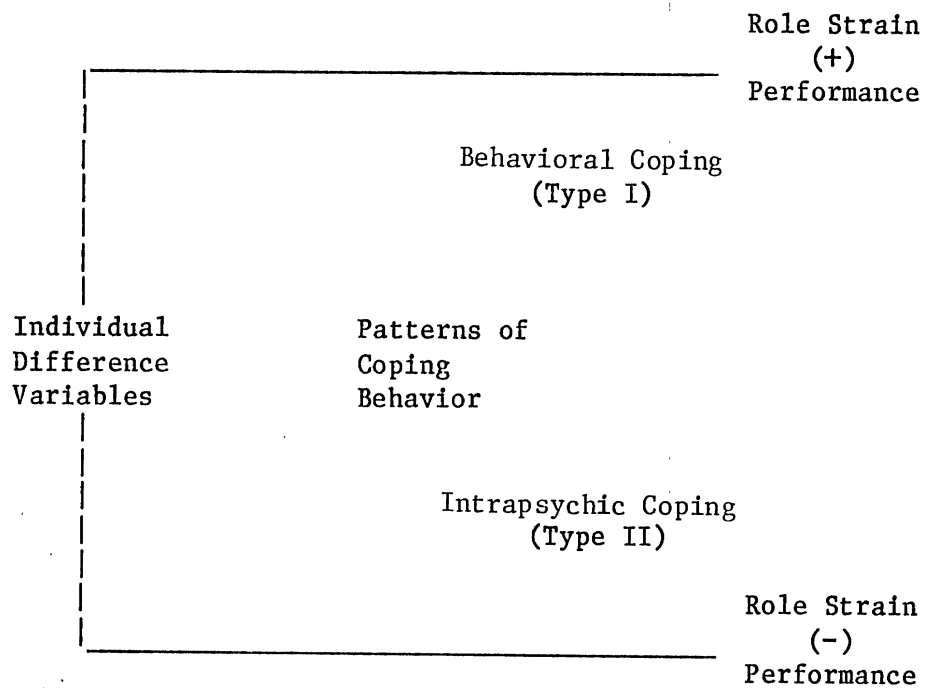
Table 2

Correlations Between Performance Indications

	1	2	3
1. Change in Sales	1.0		
2. Market Share	.263	1.0	
3. Subjective Ranking	.220	.385	1.0

Table 3

Confirmatory Canonical Correlation

	(A) Canonical Solution		(B) Target Matrix		(C) Procrustes Solution	
	Type I	Type II	Type I	Type II	Type I	Type II
PERFORMANCE	.81	-.58	1	-1	.56	-.82
ROLE STRAIN	.44	.90	1	1	.72	.69
AGE	.67	-.14	1	-1	.58	-.36
EXPERIENCE #1	.74	-.30	1	-1	.59	-.54
#2	.74	-.30	1	-1	.59	-.54
#3	.86	-.33	1	-1	.69	-.60
#4	.74	-.26	1	-1	.61	-.50
CONFORMITY	.53	.50	1	-1	.67	.29
SELF-ESTEEM	-.12	-.88	1	-1	.41	-.79
CANONICAL CORRELATION	.44 (p=.001)	.30 (p=.002)			.34 (p=.002)	.40 (p=.002)

COEFFICIENT OF CONGRUENCE (CC)[a]: PROCRUSTES/TARGET = .92

CANONICAL/TARGET = .79

$$a \quad CC = \frac{\sum_{i=1}^{k} \lambda_{ti} \lambda_{t*i}}{\left[\left(\sum_{i=1}^{k} \lambda_{t*i}^{2}\right)\left(\sum_{i=1}^{k} \lambda_{ti}^{2}\right)\right]^{1/2}}$$

where

λ_{t*} is the column loadings entries of a factor solution

λ_{t} is the column entries of a target matrix

k is the number of variables

Table 4

Validity Assessment of Type I and Type II Processes

| | Criterion Pairs | Canonical Weights | |
		Variate 1	Variate 2
(a)	Change in Sales	.39	.94
	Role Strain	.98	-.24
	Canonical Correlation	.35	.16
	Significance	.002	n.s.
(b)	Market Share	.39	.93
	Role Strain	.94	-.33
	Canonical Correlation	.34	.19
	Significance	.001	n.s.
		Type I	Type II

NOTE: Age, experience, conformity, and self-esteem are retained as the predictor variables.

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