

Motivation

Working Paper Series

EXTENSIONS TO A PATH-GOAL
THEORY OF MOTIVATION.¹

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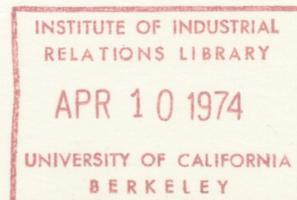
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(Working Paper 73-17)

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A B S T R A C T

This paper extends and replicates the Evans' (1970b) hypothesis concerning the way in which the behavior of the superior affects the subordinate's perceptions of expectancies and instrumentalities in the path-goal theory of motivation. Of the three moderators (the subordinate's locus of control, the subordinate's position in a web of role relationships, and the supervisor's upward influence) hypothesized, only the first was found to moderate the superior/subordinate relationship as predicted. Results for the other two moderators were equivocal. Additional implications of the path-goal model were explored - i.e. the role of motivation as a) an intervening variable between supervisory behavior and subordinate behavior, and b) as a moderator in the behavior/satisfaction relationship.

The seminal article of Georgopoulos, Mahoney and Jones (1957) extended the expectancy theories of motivation (Tolman, 1932; Lewin, 1938) to the organizational scene. The model proposed was formalized and further extended by Vroom (1964) who made a more extensive analysis of the path-goal issue. He introduced two basic probability concepts:

1. Instrumentality, which provides a probability link between two outcomes. Instrumentality represents an individual's beliefs that one outcome is associated with another - for example, that being a high performer will result in higher pay.
2. Expectancy, which provides a probability link between behavior and an outcome. Expectancy represents an individual's beliefs that an outcome is associated with his behavior - for example, that increased effort will result in higher performance.

Vroom suggested that motivation to perform is made up of two components combined multiplicatively: the valency of high performance, the attractiveness of the outcome, (which in turn is comprised of the sum, over goals, of the product of the importance of each goal and the instrumentality of high performance for the goal) and the path-goal expectancies that effort or working hard will lead to high performance. Furthermore, following Georgopoulos et al. (1957), work behavior is a function of this motivational force, subject to a number of constraints such as the individual's ability and the freedom he has to vary his behavior.³

Variants and extensions of Vroom's model have been tested and confirmed in a variety of studies - experimentally (Graen, 1969); cross-sectionally (Porter and Lawler, 1968; Gavin, 1970; and Schuster, Clark and Rogers, 1971) and longitudinally (Lawler, 1968). In addition, Porter and Lawler (1968), Graen (1969) and Evans (1970b) have further extended the model to show the relationship with job satisfaction. The path-goal theory provides a rather complete framework for understanding motivation in organizational settings.

Given that the path-goal framework has some support as a model of individual motivation in organizations, how and when do organizational factors affect motivation? Recent literature has suggested that organizational factors may affect motivation through the impact that these factors have upon instrumentalities and expectancies. Compensation, promotion, participation (Galbraith, 1968), supervisory behavior (Evans, 1970b), task complexity (House, 1971) and work group behavior (Graen, 1969) have all been reported to have an effect upon these probabilities. In addition, interactions of some of these factors with one another, and with the individual's own characteristics may also influence motivation. For example, House (1971) suggested complex interactions between supervisory behavior, task structure and the individual's tolerance for ambiguity.

Evans (1970 a, b) has used the path-goal approach to link leader behavior with employee motivation and job satisfaction, and has proposed that two conditions were necessary for the supervisor to create a situation in which subordinates perceived strong links between high performance paths

and their idiosyncratic goals: a) that the supervisor offered a range of valued rewards to the subordinate (thus showing "consideration"), and b) that he made certain that the distribution of the reward was made contingent upon performance ("initiating structure"). Evans' linkage model (following the path-goal theory) further suggests that when the goals were important to the subordinate and he saw a strong link between performance and his goals then he would tend to be a high performer. When the individual was a high performer, and there was an actual link between performance and reward, then the individual would attain his goals and experience job satisfaction. The model implies that the independent variables of the leader behaviors will only relate to the dependent variables, performance and satisfaction, if a) the independent variable (leader behaviors) relates to a set of intervening variables (path-goal links) and b) the intervening variables (path-goal links) relate to the dependent variables (performance and satisfaction). Research in two organizations tested this model (Evans, 1970b) and provided some support.

However there were differences between the two organizations studied and Evans (1970a) suggested three factors might moderate the supervisory behavior/subordinate motivation relationship: the upward influence in the hierarchy exhibited by the supervisor (Pelz, 1955); the role conflict experienced by the subordinate; and the extent to which the subordinate was Internal or External in Locus of Control orientation (Rotter, 1966), or the generalized expectancies of the subordinate that reward and punishment were based on his own behavior rather than on random occurrences.

The study reported here was designed to test these speculations as well as to replicate and extend the earlier research (Evans, 1970b). The following hypotheses were made concerning the relationship between supervisor behavior and motivation:

H₁: The more considerate the supervisor, the higher the motivation for high performance paths.

A. The greater the upward influence of the supervisor, the more likely that he could offer and deliver many rewards (consideration) to the employees, thus influencing their expectancies and increasing their motivation.

H₂: The greater the initiation of structure, the higher the motivation for high performance paths.

A. The higher the role conflict experienced by the subordinates (in that different role senders had clearly different expectations of how the individual should behave), the less effort the supervisor would have on making the distribution of the rewards contingent on performance (initiating structure).

B. The more internally controlled the subordinate, the stronger the relationship.

It was also hypothesized that:

H₃: Motivation is an intervening variable in the Leadership/Behavior relationship.

H₄: The higher the motivation (Σ Valence X Expectancy) to undertake a particular activity, the more frequently will the activity be undertaken.

H₅: Motivation is a moderator of the Behavior/Satisfaction relationship.

Method

Subjects

Subjects were 86 young managers enrolled in the first year of a part-time M.B.A. program at the University of Toronto. Median age was 25-29, and most were university graduates. All subjects had been with their present companies for about two years in a variety of functional specialities. Most (57%) had been brought up in Southern Ontario, 52% of them in large urban centers (i.e. the Toronto/Hamilton conurbation).

Measuring Instruments

Leadership Behavior: the subordinate's perceptions of leadership behavior were measured with Version XII of the Leader Behavior Description Questionnaire (Stogdill, 1968). "Upward Influence" was measured with the "Superior Orientation" subscale; "Consideration" was measured by the sum of the "Consideration," "Tolerance for Freedom" and "Integration" subscales; "Initiation" by the sum of the "Structure," "Role Assumption" and "Production Emphasis" subscales.

Role Conflict: measured with the paper and pencil questionnaire developed by Rizzo, House and Lirtzman (1968)

Powerlessness: measured with Rotter's (1966) Internal/External Control scale, which has had extensive experimental validation (Rotter, 1966; MacDonald, 1969).

Job Performance: self-rated measures of the following were obtained: Effort, Performance, Frequency of making suggestions to the superior, Frequency of following the superior's instructions, Frequency of helping fellow workers and Frequency of training subordinates.

Path-Goal Expectancies and Instrumentalities: measured by questions designed to tap: (a) (Expectancies) whether or not effort would lead to performance and (b) (Instrumentality) whether or not high performance resulted in reward of some kind.

Goal Attainment: measured with a version of Porter's (1961) instrument, tapped the facets of Self-Actualization, Self-esteem, Autonomy, Social, Security, Pay, Supervision, Promotion and Family. The Family was included to try to explore a non-work-related goal that might conflict strongly with the work-related goals. In addition, a managerial version of the JDI (Warr and Routledge, 1969) was used to measure Satisfaction with Firm, Job, Pay, Promotion Opportunities, Superior, Peers, and Subordinates.

Overall Satisfaction: this was measured with the Brayfield-Rothe Instrument (1951).

One major limitation of this study lies in the fact that the respondents are the source of all data. It is possible that individuals may have been lenient in rating their behavior, which would restrict the range of the dependent variables.

Results

Relationship Between Initiation of Structure and Consideration with
Motivational and Performance Variables

It was hypothesized (H_1 , and H_2) that high consideration and high initiation would be associated with high motivation. However, a problem emerged in testing these hypotheses. For this sample, perceived initiation and consideration were highly correlated ($R = .54$, $p < .001$), see Table 1, hence the original intention of analyzing the data through a

Table 1 here

two-way ANOVA was inappropriate. Accordingly, the technique of multiple regression was employed - motivation, and performance measures⁴ were the dependent variables, while Initiation, Consideration, Superior Orientation, I-E Control, Role Ambiguity and Role Conflict were employed as predictors. The results are presented in Table 2.

Table 2 here

Consideration consistently appeared as being positively related to motivation⁵ and to some of the performance variables; secondly, internals had higher motivation than externals; finally, in some cases motivation was higher when role conflict or ambiguity was higher.⁶

In order to test Hypotheses 1A, 2A, and 2B, the regression was run after splitting the sample on the three control variables - Superior's Upward Influence, Internal-External Control, and Role Conflict. The results for these are summarized below and in Table 3.⁷

Table 3 here

Upward Influence as a Moderator - the effect of this variable on the relationship between the dependent variables and Consideration (with which Upward Influence is correlated $r = .59$ $p < .001$) is inconsistent. The major effect of controlling for Upward Influence is that the relationship with Consideration diminishes; what relations do remain are distributed over all three levels of Upward Influence. There is, therefore, little support for Hypothesis 1A.

Role Conflict as a Moderator - with the motivation dependent variables, a bifurcation takes place (note that Consideration and lack of Role Conflict are positively related, $r = 0.48$ $p < .001$). For high role conflict, the Consideration/Motivation relationships remain high; however, for low Role Conflict about half of the Consideration/Motivation relationships remain. For the behavior dimensions, those with moderate conflict have stronger Consideration/Behavior relations. The findings for high conflict are contrary to Hypothesis 2A.

Internal-External Control as a Moderator - here the results for the motivation data are much clearer. The relationships between Consideration and Motivation remain high for the internals, they become weak for the externals; so, in addition to internals having higher motivation than externals, they also have a stronger relationship between supervisory Consideration and Motivation than externals. There is little impact on the Consideration/Performance relationship. Hypothesis 2B receives support

These results suggest that internals have higher motivation and that their motivation is more predictable from leader behavior (Consideration), i.e. they perceive and respond to environmental contingencies more consistently than do externals. The impact of upward influences and role conflict is less clear-cut. However, when role conflict is high, supervisory Consideration and Motivation Relations remain strong, the Consideration/Effort relationship is enhanced.

A further question can be raised concerning the leadership/motivation/behavior links; can it be demonstrated that motivation occupies an intervening position between leadership and behavior as suggested in hypothesis 3? One way to test this is to partial out motivation from the leadership/behavior relationship. The results for such a test are presented in Table 4. For the behaviors of "Effort," "Helping Fellows"

Table 4 here

and "Training Subordinates," it would appear that the partials drop substantially, suggesting that this linkage is appropriate; however,

for "Doing what the Boss tells" or "Making suggestions to the Boss," the consideration/behavior relationship remains just as strong after motivation has been partialled out.

The data for testing Hypothesis 4 (the relations between motivation and behavior) are presented in Table 4. For all behaviors except "Giving suggestions to Boss," the hypothesis is supported (at $p < .05$). However, correlations are generally weak and motivation rarely explains more than 10% of the variance in behavior.

In Hypothesis 5 it is suggested that when motivation is higher, there will be a stronger relation between Behavior and Satisfaction. In testing this hypothesis we noted an effect which confounded the contention that higher motivation results in a stronger relation between behavior and motivation. As motivation increases, both behavior and satisfaction increase concomitantly. The correlation data, taken alone, indicate that there is little relationship between effort and satisfaction under conditions of both high (-.13) and low (-.06) motivation, while the relation is strongest for the moderate motivation condition (.51**). However, the lack of relationship in the low and high motivation condition arises from different causes. An examination of the scatter diagrams indicates:

- a) For low motivation there exists a distribution of effort and satisfaction over the whole of both scales; however, there is no relationship between the variables.
- b) For high motivation the range of both scales is restricted. The cases cluster at the top of both.

Discussion

These results provide an extension to the path-goal theories. Wahba and House (1972) have noted the strong rationality assumptions underlying the path-goal model. Their critique is given some indirect support here by noting the differences between internal subjects and external subjects in the applicability of the model to their behavior. Internal subjects who perceive their environment as meaningful and consistent, and who feel able to control it, are more likely to be "rational" decision-makers in the sense proposed by economists and game theorists, while external subjects who see the environment as a cluster of random forces which they cannot control (even if it is benign) are more likely to make decisions that violate the rational assumptions of transitivity, independence of irrelevant alternatives and dominance of alternative strategies. The results indicate stronger support for the model among the internal subjects than among the external subjects; this finding is consistent with the model's basis in rationality assumptions. Path-goal theorists, in trying to re-create a "goal-directed man" model of behavior, have to meet the rationality assumptions required. Their data does not yet do this.

There is a further problem which path-goal theorists have not yet adequately dealt with, that is the question of conflicting path-goal instrumentalities. If an activity leads toward one cluster of goals and away from an equally important second cluster then, by our computations,

the valence of that activity would be neutral - neither desired nor not desired, in fact the same as if the goals were unimportant or the activity led nowhere. However, Dalton (1947) has demonstrated that the group who were neither rate-busters nor quota-restricters were conflicted in the valence that productivity had for them, they were ambivalent toward it - they had intermediate performance but also, it appears, suffered from psychosomatic disorders. The path-goal theory can not yet predict these kinds of outcomes.

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Footnotes

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2. Requests for reprints should be sent to M.G. Evans, Faculty of Management Studies, University of Toronto, Toronto M5S 1V4, Ontario, Canada
3. While Georgopoulos et al. (1957) found their hypothesized relationships were enhanced when the individual had freedom from barriers to vary production, research is needed to explore whether or not these barriers are implicitly taken into account by the individual when he reports his expectancies or instrumentalities.
4. Additionally, the product of instrumentalities and expectancies (EPI) - a measure of motivation unweighted by the importance of goals - was included (for each activity) as a dependent variable.
5. It should be noted that the motivation measures are not independent from each other. All contain a component of the Valence of High Performance Work.
6. It should be noted that, contrary to the findings of Graen (1969) and Evans (1970), the correlations between the independent variables and motivation are slightly higher than the correlations between the independent variables and path-goal expectancies for four out of five behaviors.

7. The tables on which these comments are based can be obtained from the author.

Table 1: Correlations between initiation of structure, consideration, upward influence, role conflict, role ambiguity and internal external orientation

	1	2	3	4	5	6
1. Initiation	-					
2. Consideration	.54***	-				
3. Upward Influence	.63***	.59***	-			
4. Role Ambiguity	.12	.51***	.17	-		
5. Role Conflict	.14	.48***	.29**	.67***	-	
6. Internal External	-.26**	-.24*	-.26**	-.24*	-.25*	-
Mean	105.70	105.84	36.16	34.35	39.36	8.36
S.D.	14.88	18.39	6.30	5.69	7.98	3.98

*** $p \leq .001$

** $p \leq .01$

* $p \leq .05$

Notes:

1. Higher score implies a more external orientation.
2. High scores imply lower conflict and ambiguity.
3. High scores imply higher satisfaction, etc.

Table 2: Multiple regression of motivation and performance with Consideration (C), Initiation of Structure (I), Upward Influence (UI), Internal-External Control (I-E), Role Conflict (RC), Role Ambiguity (RA).

Dependent Variable	R	% Variance accounted for by independent variables
PI - High Performance	.60	C 29.3, I-E -6.4
Motivation-High Performance	.63	C 31.4, I-E -8.0
PI Train Subordinates	.60	C 27.6, I-E -5.0, RC -4.0
Motivation Train Subordinates	.64	C 29.6, I-E -7.0, RC -4.6
PI Help Follows	.62	C 27.1, I-E -5.6, RA -5.3
Motivation Help Follows	.65	C 28.6, I-E -7.2, RA -6.0
PI Suggestions to Boss	.63	C 28.3, UI 5.7, I-E -2.9, RC -3.4
Motivation Suggestions to Boss	.66	C 30.4, UI 6.1, I-E -3.4, RA -4.3
PI Do what Boss Says	.57	C 24.5, UI 3.0, I-E -4.5
Motivation Do what Boss Says	.54	C 4.0, UI 25.2
Effort	.41	C 11.9, I-E -5.2
Do what Boss Says	.38	I 8.9, RC 5.2
Help Fellows	n.s.	
Performance	n.d.	
Train Subordinates	.43	S 11.9, RA 6.8
Suggestions to Boss	.30	C 8.9

Table 3: Number of significant multiple correlations between Motivation and Performance and Consideration when controlling for Upward Influence, Internal/External Control, and Role Conflict.

	Motivation?EPI Variables	Performance Variables
Number of Variables	10	6
Number of Significant multiple correlations involving Consideration		
1. No control	9	2
2. High Upward Influence	4	1
Medium Upward Influence	2	1
Low Upward Influence	3	1
3. High Role Conflict	8	1
Medium Role Conflict	0	4
Low Role Conflict	5	1
4. Internals	10	1
Externals	1	1

Table 4: Correlation between consideration, motivation and performance, including partialling motivation out of the consideration/performance relationships.

Effort	1	2	3	4
1. Effort	-			
2. Consideration	.34**	-		
3. EPI High Performance	.43***	.54***	-	
4. Motivation High Performance	.44***	.56***	.98***	-
E with C/EPI	.15			
E.C/Motivation	.13			
Do What Boss Says	1	2	3	4
1. Do What Boss Says	-			
2. Consideration	.26**			
3. EPI Do What Boss Says	.24**	.49***		
4. Motivation Do What Boss Says	.21*	.46***	.98***	
DBS.C/EPI	.22*			
DBS.C/Motivation	.24**			
Help Fellows	1	2	3	4
1. Help Fellows	-			
2. Consideration	.20*			
3. EPI Help Fellows	.19*	.52***		
4. Motivation Help Fellows	.21	.54***	.98***	
HF.C/EPI	.12			
HF.C/Motivation	.11			
Train Subordinates	1	2	3	4
1. Train Subordinates	-			
2. Consideration	.31**			
3. EPI Train Subordinates	.33**	.53***		
4. Motivation Train Subordinates	.37***	.54***	.98***	
TS.C/EPI	.18			
TS.C/Motivation	.14			
Suggest to Boss	1	2	3	4
1. Suggest to Boss	-			
2. Consideration	.30**			
3. EPI Suggest to Boss	.14	.53***		
4. Motivation Suggest to Boss	.14	.55***	.98***	
SB.C/EPI	.27*			
SB.C/Motivation	.27*			

*** p < .001

** p < .01

* p < .05