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Corporate Manager's Leadership Style and Existence of Employee Health Promotion Programs

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ABSTRACT

The establishment and the quality of health promotion programs depend on supportive corporate management. However, there is a paucity of research investigating the area of leadership in corporations as it relates to health promotion programs. In general, the research on health promotion consists primarily of types of programs, cost effectiveness, and physiological responses to specific health behaviors.

The purpose of this study was to examine the relationship of corporate managers' leadership style, determined by Likert's Profile of Organizational Characteristics, and the existence of employee health promotion programs. One hundred eighty-seven corporate officers in Northeastern Ohio completed the questionnaire entitled Corporate Leadership Styles and the Existence of Employee Health Promotion Programs which included questions from Likert's Profile of Organizational Characteristics, general information, demographic data, and questions about the effects of health promotion. Multiple linear regression procedures were used to analyze the variance in predicting one variable to another. The F test was applied to determine statistical significance at the .05 level.

The results of hypothesis testing for the sample indicated leadership style, as measured by Likert's Profile of Organizational Characteristics, does not aid in predicting the existence of an employee health promotion program. Leadership styles of the respondents in this study clustered around System 2 and System 3. System 2, the benevolent-authoritative system, and System 3, the consultive system, are intermediate systems. These systems resemble the extreme from which they deviate. However, data from a subset of the sample (managers from corporations with health promotion programs) indicated knowledge of leadership style may be used to predict corporate officers' perception that health promotion programs increase employee morale. In addition, data from this subset indicated corporate officer participation in the decision to establish a health promotion program leads to a predictive relationship that health promotion programs are cost effective, increase employee productivity, and decrease absenteeism.

INTRODUCTION

Historically, the practice of medicine and, therefore, health care was disease and acute care oriented. In the years between 1875 and 1924 medical advances were based on environmental factors such as improved sanitation and antiseptic surgery. From around 1925 to 1950, discoveries of sulfa and penicillin decreased the mortality rate by providing a "cure" for infectious diseases. Americans viewed the physician as a person who could cure their ills. Medicine has continued to respond with cures, such as open heart surgery, organ transplants, and pharmaceutical break throughs such as synthesis of hormones and genetic engineering of DNA. Until recently, this curative approach to health care has continued without scrutiny, in spite of the fact that 7 of the 10 leading causes of death in the United States during the 1980's are related, directly or indirectly, through risk factors, to behavior or lifestyle (Brady, 1983).

As a nation, we have expended large amounts of money for health care. In the years from 1960 to 1978, annual health care expenditures increased over 700%. Hookman (1984) notes that although the national inflation rate declined in 1983 and 1984, hospital room costs increased in 1981, 1982, and 1983. Three hundred and thirty-two billion dollars, or 10.5%, of the Gross National Product was spent on health care in 1982. This exceeds federal outlays for defense by nearly $150 billion and averages out to $1,365 per person, or $140 more than in 1981. To a large extent, the increased expenditures focused on disability and disease, not prevention (Department of Health, Education, and Welfare, 1979). Fielding (1984) reports that health promotion programs do not work if not strongly supported by top management.

A nationwide survey (Health Maintenance, 1973) of barriers toward better health and ways of overcoming them conducted among representative samples of the American public, business, and labor leaders indicates that:

> in the real world, the actual level of participation (in employer sponsored preventive health programs) would depend on the quality and availability of the programs, as well as the quality of the campaign within the company used to sell the employees (p. 82).

It would appear that Corporate America is striving to improve its competitiveness and productivity in the world market. A healthy workforce is essential since high absenteeism and poor performance due to physical or mental problems diminish productivity. Corporate management is one of the keys to the success of health promotion programs.

PROCEDURES

The population for this study included corporate managers of manufacturing companies within Northeastern Ohio that have 500 or more employees and were identified in the Ohio Directory of Manufacturers (1986). All 310 companies which met the previously stated criteria were surveyed. The total design method (TDM) was utilized in conducting this survey. Dillman (1978) notes that:

> in order to maximize the quantity and quality of survey responses, attention must be given to every detail that might affect response behavior. The TDM relies on a theoretically based view of why people do and do not respond to questionnaires and a well confirmed belief that attention to administrative details is essential to conducting surveys (p. viii).

Of the 310 companies surveyed, one hundred eighty-seven questionnaires were returned, representing 60% response rate.

The research design that was used was ex post facto. This ex post facto study was guided by hypotheses. Alternative or rival hypotheses are hypotheses that propose explanations for the effect other than the stated

ones. Internal validity of the design can be increased when more of the rival hypotheses can be eliminated. However, Newman and Newman (1977) state:

> one must still keep in mind that by its very nature ex post facto research can never have total internal validity. Therefore, causation can never be inferred (p. 125).

The instrument used to identify the leadership style of corporate officials was the Profile of Organizational Characteristics (POC). This instrument which measures managerial styles was developed by Rensis Likert, and has been used extensively in previous research (Likert, 1978). Likert's Profile of characteristics identifies four leadership styles: (a) System 1, exploitive-authorative; (b) System 2, benevolent-authorative; (c) System 3, consultive; and (d) System 4, participative-group.

Likert Associates (personal communication, March 13, 1986) report the 18-item Form S usually yields split-half reliabilities in the .90 to .96 range when applying the Spearman-Brown formula for estimating reliability from the r between two halves of the form. Validity of the POC, found the rank order correlation (rho) between POC scores and performance data for a West Coast manufacturing firm was +.61. Data from 10 pairs of plants in Yugoslavia and two firms in Japan show consistent differences in profiles between high and low performing plants or departments in the expected direction.

Since this investigator was interested in the relationship of leadership style, personal characteristics, and demographic variables to the existence of health promotion programs the POC was only one component of the questionnaire. The POC was reproduced in booklet form. Transitional statements were used to facilitate transition from the POC questions to

demographic data and, finally, questions about health promotion. The questionnaire booklet was entitled Corporate Leadership Styles and the Existence of Employee Health Promotion Programs.

STATISTICAL ANALYSIS

Specific research hypotheses were derived from the following research questions.

1. Are there differences in leadership styles (predictor variable) as identified on Likert's Profile of organizational characteristics instrument, of managers in corporations whith health promotion programs and those in corporations without such programs (criterion variable)?

2. Are there differences in leadership styles (predictor variable) of managers who favor health promotion programs (criterion variable) and those who do not?

3. Are there differences in leadership styles (predictor variable) of managers who have always advocated the establishment of health promotion programs and those who were not initially favorable but support such programs (criterion variable) after seeing them in operation?

4. Do age, sex, education, tenure in position, tenure with the corporation, or previous area of specialization within the corporation (predictor variables) relate to perceptions of health promotion programs (criterion variable)?

5. Is there a relationship between the managers leadership style (predictor variable) and the managers perception of health promotion programs (criterion variable)?

6. Does the origin of the idea for the health promotion program (predictor variable) or the manager's participation in the decision to provide a health promotion program relate to the manager's perception (criterion variable) of the program?

The F test was used to test the statistical significance of the proposed relationships in the research hypotheses. The F test was chosen because it is very robust. The assumptions of random selection of subjects and normal distribution of the variables can be violated without doing serious harm to the procedure.

Multiple linear regression was used in analyzing the variance in predicting from one variable to another and in covarying some of the variables to test the alternative hypotheses. Multiple linear regression was chosen because it is more flexible than traditional analysis of variance. With multiple linear regression, one can write the models that reflect the specific research question being asked. In addition, Newman (1976) points out that with multiple linear regression one can test relationships between categorical variables, between categorical and continuous variables, or between continuous variables.

Two tailed tests of significance were used to test the relationship of those variables where the direction of the correlation was uncertain. The .05 level of significance was used since it was the opinion of the investigator that the consequences of rejecting a true null hypothesis were not so serious as to warrant a more stringent confidence level.

Since four leadership styles were being tested, a correction for multiple comparisons was made if the overall F was significant. Newman and Newman (1977) report:

> When an overall F is significant and there are more than two groups, the question of where the difference is, always arises. To find out where the difference is, one generally runs multiple comparisons between the groups. That is, Group 1 is compared to Group 2, Group 1 is compared to Group 3, Group 2 is compared to Group 3, etc. As the number of comparisons (tests of significance), which are not independent of each other, increases, the more likely one will find significance (p. 221).

A variety of corrections may be used to control for alpha error buildup when making multiple comparisons. This researcher used $\frac{\alpha}{n-1}$.

Power analyses were performed to determine the probability of making a Type II error. Effect size (f^2) was subjectively set at .15 which is defined as medium effect. The following formula noted by Newman and Newman (1983) was used to calculate power:

$$L = f^2 v$$

where: N = number of replications
$v = df_2 (N - m_1)$
$u = df_1 (m_1 - m_2)$
m_1 = number of linearly independent vectors in full modal
m_2 = number of linearly independent vectors in restricted modal

Power was calculated for the most stringent modal case, that is, the case in which power would be the lowest; therefore, the power estimates that follow for this study will be at least this high or higher. Three power estimates were given for small .02, medium .15, and large .35 effect sizes. For this study, therefore, power for effect size would be .15 if effect size was truly small for this population. Medium effect size would be .85 and large effect would be .92. Therefore, we can be fairly certain that if a medium or large effect does exist in the population, this study would be capable of detecting it. This study has low power and could detect a small effect size in a population 15 times out of 100. However, since the researcher is most interested in at least medium size effects, the researcher feels the power is sufficient for this study.

RESULTS

A vast majority of corporate officers are male, between ages 30 and 59, and have approximately 4 years experience as a corporate officer. This majority of corporate officers have at least a bachelor's degree. Of the companies returning completed questionnaires, 88 offer health promotion programs and 99 do not offer health promotion programs.

Of the respondents, 163 (88%) favor health promotion at the worksite. The majority of the respondents in this study were clustered in two systems. Systems 2, benevolent-authorative, and System 3, consultive. This study addressed six research questions. Responses from the entire sample (N = 187) were used to answer Research Questions 1 and 2 and related hypothesis. A subset (n = 88) of the sample responses from corporations with health promotion programs were used to answer Research Questions 3 through 6 and related hypotheses.

Hypotheses 1 through 10 relate to Research Question 1. These hypotheses and results are stated in Table 1. An examination of table one reveals that there is not a significant difference among leadership styles in predicting whether a corporation has a health promotion program. Leadership styles are not significantly different over and above corporate officer title, age, or gender, tenure in current position, tenure with corporation, education, and area of specialization in corporation prior to current position.

Hypothesis 11 relates to Research Question 2 and Hypotheses 12 and 13 relate to Research Question 3. These hypotheses and results are detailed on Table 2. An examination of Table 2 reveals the there is not a significant difference among leadership styles of managers who favor health promotion programs at the worksite and those who do not. Nor is there a significant difference among leadership styles in managers who always advocated the establishment of health promotion programs and those who initially were not in favor of the program, but now support such a program.

Table 1

Results of Hypotheses 1-10

Hypothesis	R^2	df	Alpha	F	P	s/ns
1. There is a significant difference among leadership styles in predicting whether a corporation has a health promotion program.						
Full Model	.071	17/162	.05	.729	.770	NS
Restricted Model	.0					
2. Leadership style, as measured by Likert's Profile of Organizational Characteristics, will be significantly different between corporations that have a health promotion program and ones that do not over and above corporate officer title, age, and sex.						
Full Model	.099	18/151	.05	.648	>.05	NS
Restricted Model	.029					
3. Leadership style, as measured by Likert's Profile of Organizational Characteristics, will be significantly different between corporations that have health promotion programs and ones that do not over and above years in current position and years with corporation.						
Full Model	.106	18/154	.05	.734	>.05	NS
Restricted Model	.029					
4. Leadership style, as measured by Likert's Profile of Organizational Characteristics, will be significantly different between corporations that have health promotion programs and ones that do not over and above highest degree held and area of specialization prior to current position.						
Full Model	.192	18/147	.05	.909	>.05	NS
Restricted Model	.102					
5. Age of the corporate officer accounts for a significant amount of variance in predicting the presence of a health promotion program.						
Full Model	.014	4/182	.05	.653	.625	NS
Restricted Model	.0					
6. Sex of the corporate officer accounts for a significant amount of variance in predicting the presence of a health promotion program.						
Full Model	.002	1/185	.05	.332	.466	NS
Restricted Model	.0					
7. Education of the corporate officer accounts for a significant amount of variance in predicting the presence of a health promotion program.						
Full Model	.055	6/180	.05	1.768	.108	NS
Restricted Model	.0					
8. Tenure as a corporate officer accounts for a significant amount of variance in predicting the presence of a health promotion program.						
Full Model	.0200	3/183	.05	1.244	.2948	NS
Restricted Model	.0					
9. Tenure with the corporation accounts for a significant amount of variance in predicting the presence of a health promotion program.						
Full Model	.014	3/183	.05	.906	.441	NS
Restricted Model	.0					
10. Previous area of specialization in the corporation prior to becoming a corporate officer accounts for a significant amount of variance in predicting the presence of a health promotion program.						
Full Model	.045	6/177	.05	1.409	.213	NS
Restricted Model	.0					

Table 2

Results of Hypotheses 11, 12, and 13

Hypothesis	R^2	df	Alpha	F	P	s/ns
11. There is a significant difference in leadership style in managers who favor better health promotion programs at the worksite and those who do not favor health promotion programs.						
Full Model	.090	17/160	.05	.957	.531	NS
Restricted Model	.0					
12. There is a significant difference in leadership style in managers who have always accepted the establishment of health promotion programs and those who were not initially in favor of the program, but now support such programs.						
Full Model	.122	15/65	.05	.606	.860	NS
Restricted Model	.0					
13. There is a significant difference between corporate officers who initially favored health promotion programs and those who later favored health promotion programs based on whether or not they participated in the decision to establish the program.						
Full Model	.017	1/84	.05	1.533	.219	NS
Restricted Model	.0					

Hypotheses 14 through 37 relate to Research Question 4. These hypotheses and results are detailed in Tables 3-5. An examination of Tables 3-5 reveals there is not a significant difference in demographics as they relate to the officers' perception of cost effectiveness of health promotion programs.

Table 3

Hypothesis 14 - 23

Hypothesis	R^2	df	Alpha	F	P	s/ns
14. Age of corporate officer accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as cost effective.						
Full Model	.015	4/81	.05	.311	.870	NS
Restricted Model	.0					
15. Sex of corporate officer accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion as cost effective.						
Full Model	.0004	1/84	.05	.033	.856	NS
Restricted Model	.0					
16. Education of the corporate officer accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as cost effective.						
Full Model	.071	4/79	.05	1.017	.420	NS
Restricted Model	.0					
17. Tenure in the current position accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion as cost effective.						
Full Model	.042	3/82	.05	1.208	.312	NS
Restricted Model	.0					
18. Tenure with the corporation accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as cost effective.						
Full Model	.0419	3/82	.05	1.196	.3164	NS
Restricted Model	.0					
19. Previous area of specialization within the corporation accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as cost effective.						
Full Model	.046	6/78	.05	.635	.702	NS
Restricted Model	.0					
20. Age of the corporate officer accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as increasing employee morale.						
Full Model	.017	4/81	.05	.352	.841	NS
Restricted Model	.0					
21. Sex of the corporate officer accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as increasing employee morale.						
Full Model	.010	1/84	.05	.356	.875	NS
Restricted Model	.0					
22. Education of the corporate officer accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as increasing employee morale.						
Full Model	.065	6/79	.05	.929	.479	NS
Restricted Model	.0					
23. Tenure in current position accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as increasing employee morale.						
Full Model	.022	3/82	.05	.617	.610	NS
Restricted Model	.0					

Table 4

Hypothesis 24 - 33

Hypothesis	R^2	df	Alpha	F	P	s/ns
24. Tenure with the corporation accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as increasing employee morale.						
Full Model	.029	3/82	.05	.834	.481	NS
Restricted Model	.0					
25. Previous area of specialization within the corporation accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as increasing employee morale.						
Full Model	.057	6/78	.05	.943	.469	NS
Restricted Model	.0					
26. Age of the corporate officer accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as increasing employee productivity.						
Full Model	.048	4/81	.05	1.052	.385	NS
Restricted Model	.0					
27. Sex of the corporate officer accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as increasing employee productivity.						
Full Model	.007	1.84	.05	.616	.434	NS
Restricted Model	.0					
28. Education of the corporate officer accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as increasing employee productivity.						
Full Model	.088	6/79	.05	1.270	.280	NS
Restricted Model	.0					
29. Tenure in position accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as increasing employee productivity.						
Full Model	.084	3/82	.05	2.909	.063	NS
Restricted Model	.0					
30. Tenure with the corporation accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as increasing employee productivity.						
Full Model	.052	3/82	.05	.914	.439	NS
Restricted Model	.0					
31. Previous area of specialization with the corporation accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as increasing employee productivity.						
Full Model	.070	6/78	.05	.986	.440	NS
Restricted Model	.0					
32. Age of the corporate officer accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as increasing employee productivity.						
Full Model	.020	4/81	.05	.424	.791	NS
Restricted Model	.0					
33. Sex of the corporate officer accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as increasing employee productivity.						
Full Model	.003	1/84	.05	.262	.609	NS
Restricted Model	.0					

Table 5

Hypothesis 34 - 37

Hypothesis	R^2	df	Alpha	F	P	s/ns
34. Education of the corporate officer accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as decreasing absenteeism.						
Full Model	.043	6/79	.05	.597	.731	NS
Restricted Model	.0					
35. Tenure in current position accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as decreasing absenteeism.						
Full Model	.009	3/82	.05	.267	.849	NS
Restricted Model	.0					
36. Tenure in the corporation accounts for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as decreasing absenteeism.	.021	3/82	.05	.991	.626	NS
Full Model	.0					
Restricted Model						
37. Previous areas of specialization, within the corporation, account for a significant amount of variance in predicting whether the corporate officer perceives the health promotion program as decreasing absenteeism.						
Full Model	.017	6/78	.05	.231	.965	NS
Restricted Model	.0					

Hypotheses 38 through 42 relate to Research Question 5. These hypotheses and results are detailed in Table 6. An examination of Table 6 reveals that there is not a significant difference among leadership styles in predicting the managers' perception of health promotion programs as cost effective, increasing employee productivity, or decreasing absenteeism. There is not a significant difference in leadership styles of corporate officers who participated in the decision to establish a health promotion program and those who did not. However, there is a significant difference among leadership styles in predicting the managers' perception that health promotion programs increase employee morale.

Table 6

Hypotheses 38-42

Hypothesis	R^2	df	Alpha	F	P	s/ns
38. There is a significant difference among leadership styles in predicting the corporate official's perception that the health promotion program is cost effective.						
Full Model	.131	13/166	.05	.667	.788	NS
Restricted Model	.0					
39. There is a significant difference among leadership styles in predicting the corporate official's perception that the health promotion program increases employee morale.						
Full Model	.401	13/166	.05	2.930	.0013	S
Restricted Model	.0					
40. There is a significant difference among leadership styles in predicting the corporate official's perception that the health promotion program increases employee productivity.						
Full Model	.105	13/166	.05	1.490	.134	NS
Restricted Model	.0					
41. There is a significant difference among leadership styles in predicting the corporate official's perception that the health promotion program decreases employee absenteeism.						
Full Model	.145	13/166	.05	.752	.724	NS
Restricted Model	.0					
42. There is a significant difference among leadership styles in corporate officers who participated in the decision to establish a health promotion program, and those who did not participate in the decision.						
Full Model	.049	13/67	.05	.991	.872	NS
Restricted Model	.0					

Hypotheses 43-50 relate to Research Question 6. These hypotheses and results are detailed on Table 7. There is not a significant difference in where the idea for a health promotion program originates and the managers' perception of whether the program is cost effective, increases employee morale, increases employee productivity, and decreases absenteeism.

Table 7

Hypothesis 43-50

Hypothesis	R^2	df	Alpha	F	P	s/ns
43. There is a significant difference in where the idea for the health promotion program originated in predicting the manager's perception of whether the program is cost effective.						
Full Model	.007	4/81	.05	.153	.961	NS
Restricted Model	.0					
44. There is a significant difference in where the idea for the health promotion program originated in predicting the manager's perception of whether the program increases employee morale.						
Full Model	.068	4/81	.05	1.479	.216	NS
Restricted Model	.0					
45. There is a significant difference in where the idea for the health promotion program originated in predicting the manager's perception of whether the program increases employee productivity.						
Full Model	.057	4/81	.05	.777	.543	NS
Restricted Model	.0					
46. There is a significant difference in where the idea for the health promotion program originated in predicting the manager's perception of whether the program decreases employee absenteeism.						
Full Model	.056	4/81	.05	1.218	.309	NS
Restricted Model	.0					
47. There is a significant difference if the employee participates in the decision to adopt [illegible] health promotion program in predicting the manager's perception of whether the program is cost effective.						
Full Model	.133	1/84	.05	12.925	.0005	NS
Restricted Model	.0					
48. There is a significant difference if the employee participates in the decision to adopt [illegible] health promotion program in predicting the manager's perception of whether the program increases employee morale.						
Full Model	.018	1/84	.05	1.622	.206	NS
Restricted Model	.0					
49. There is a significant difference if the employee participates in the decision to adopt [illegible] health promotion program in predicting the manager's perception of whether the program increases employee productivity.						
Full Model	.065	1/84	.05	5.885	.017	S
Restricted Model	.0					
50. There is a significant difference if the employee participates in the decision to adopt [illegible] health promotion program in predicting the manager's perception of whether the program decreases employee absenteeism.						
Full Model	.058	1/84	.05	5.19	.025	S
Restricted Model	.0					

There is not a significant difference in where the idea for the health promotion program originated and the manager's perception of the program. Nor is there a significant difference in the managers' perception that the program increases employee morale, when the manager participates in the decision to establish the program. However, there is a significant difference in the managers' perception that the program was cost effective, increased employee productivity and decreased employee absenteeism when the manager participated in the decision to establish the program.

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