Personality and management style as predictors of management performance and effectiveness

ISU
1990
P87
c. 1

by

Patrick R. Powaser

A Thesis Submitted to the

Graduate Faculty in Partial Fulfillment of the

Requirements for the Degree of

MASTER OF SCIENCE

Major: Psychology

Signatures have been redacted for privacy

University
Ames, Iowa

1990

Table Of Contents

List of Tables

List of Figures

Abstract

The current study investigated the relationship among personality characteristics, management style and management performance. Personality data (scores on 25 Adjective Check List scales) and management style data (scores on six Managerial Style Questionnaire scales) were gathered for 500 managers from the files of a Midwestern management consulting firm. Survey materials were sent to 420 of these managers and 126 (74% male, 26% female) responded. This sample was predominantly white (96%). Criterion data consisted of supervisor ratings on ten performance dimensions.

Results indicate that personality characteristics and management style have low validity in predicting managerial performance. Zero-order correlations for the personality scales ranged from -.22 to .29. Validities for managerial style ranged from -.26 to .12. Factor analyses were conducted on the predictor and criterion scales. Three personality factors and one criterion factor emerged. The six managerial style scales were left as individual scales. Validity coefficients between the personality factors and the criterion factor ranged from -.01 to .08, and from -.07 to .09 for the managerial style scales.

The results of this study do not support the use of personality and management style instruments as predictors of managerial performance. New instruments need to be developed exclusively for use in business and industry under strict psychometric standards.

Introduction

In the 1960s and 1970s, psychological testing in business and industry came under fire. Many tests were used incorrectly, and at least some of the concern was justified (Muchinsky, 1986). Because of this concern, psychologists have been burdened with providing evidence that their tests are measuring what they purport to measure. This burden requires more work when developing and validating tests, but more importantly, ensures quality instruments are produced. Tests have swung back into favor within the business community.

This paper will provide a brief review of the use of psychological tests in industry, as well as a review of the research on personality and managerial style as they relate to managerial performance. Recent research on personality assessment in organizations is scarce even though more research on personality assessment in organizations has been reported in the past five to seven years than in the ten to fifteen years prior to that. Research on managerial style is more abundant. In both areas, renewed interest has developed over the past several years.

The present study sought to determine the relationship among individual personality constructs, management style, and assessed management performance. Personality scores from the Adjective Checklist (Gough & Heilbrun, 1983) and management style scores from the Managerial Style Questionnaire (McBer and Company, 1980b) were used as predictors of managerial performance

and effectiveness. This study assessed the criterion-related validity of the two predictors.

The importance of this study stems from the fact that organizations use these measures (i.e., personality and managerial style assessments) in employment decisions. Organizations want a tool that is both accurate and cost effective. The accuracy of these personality characteristics and managerial styles will be assessed here.

Psychological Tests

Perhaps because intelligence tests were used indiscriminantly (for purposes other than which they were developed), psychological tests came under heavy attack during the 1960s and 1970s. The Federal Government intervention that followed had a long term influence on the use of these tests (Albright, 1976).

Tenopyr (1981) argues that the uproar over psychological testing was unjustified based on the number of organizations using the instruments. Some 60% of organizations with more than 25,000 employees engaged in psychological testing, compared to only about 39% in companies with fewer than 100 employees (Prentice-Hall/American Society for Personnel Administration, 1975). Furthermore, the testing indicated above was not widespread within the organizations. Testing was usually only part of the selection process, and used for a limited number of positions.

In their *Guidelines*, the Equal Employment Opportunity Commission (1978) called for better alternatives to tests (i.e., instruments with greater validities). Muchinsky (1986) reviewed predictors commonly used in personnel selection. His assessment included: (a) intelligence tests, (b) aptitude and ability tests, (c) personality and interest tests, (d) interviews, (e) work samples, (f) situational exercises, (g) biographical information, (h) peer assessments, (i) self-assessments, (j) letters of reference, and (k) assessment center evaluations. His findings are summarized in Table 1. Note validity was not the only attribute evaluated. Also note the most widely used selection instrument, the interview, has validities lower than that of tests.

Predicting Managerial Performance

Personality tests. The use of personality tests in industrial settings began in the early 1900s. A major use of the instruments at that time was to identify people with personalities suited for sales jobs. Today, personality testing is still frequently used in selecting sales people. World War I and World War II were hotbeds of activity in developing personality tests as the armed forces needed a quick and easy way to classify soldiers. Today, literally hundreds of personality tests are on the market.

Despite the long history of using personality tests in employment situations, many psychologists are skeptical of their usefulness in industrial settings. Much of this skepticism in recent years may have stemmed from several review articles.

Table 1 Assessment of eleven personnel selection methods along four evaluative standards

	Evaluative Standards			
Selection Method	Validity	Fairness	Applicability	Cost
Intelligence Tests	Moderate	Moderate	High	Low
Aptitude & Ability Tests	Moderate	High	Moderate	Low
Personality & Interest Tests	Moderate	High	Low	Moderate
Interviews	Low	Moderate	High	Moderate
Work Samples	High	High	Low	High
Situational Exercises	Moderate	(unknown)	Low	Moderate
Biographical Information	High	Moderate	High	Low
Peer Assessments	High	Moderate	Low	Low
Self-Assessments	Low	High	Moderate	Low
Letters of Reference	Low	(unknown)	High	Low
Assessment Center Evaluations	High	High	Low	High

Note. From Muchinsky, 1986, p. 60.

Ghiselli and Barthol (1953) found little empirical support for the use of personality assessment in industrial settings. A rather grim evaluation of personality tests by Guion and Gottier (1965) concluded that personality testing should not be used in making selection decisions. Since that time, a great dearth of published research has appeared on using personality assessment in industry. Generally, in the research that was published, validity coefficients for personality tests have been found to be moderate, at best. Ghiselli (1973) reported average validities of .28 for personality tests. Schmitt, Gooding, Noe, and Kirsch's (1984) review of validity studies yielded average validity coefficients of only .15 for these tests. Hunter and Hunter (1984) conducted a meta-analysis of personality research in employment settings and found an overall validity of only .10. Similarly, a meta-analysis by Mount and Barrick (1990) indicated an overall correlation of .09 between personality dimensions and job performance criteria. These authors did find that two dimensions of personality, namely intellect and conscientiousness, achieved validities of .28 and .20 respectively.

In the past, the instruments used in personality assessment commonly were the same ones developed to identify personality disorders (e.g., MMPI). Obviously, one would not expect extremely high validity coefficients when such an instrument is used for other than its intended purpose. Personality tests designed specifically for selection purposes should yield greater validities. Anastasi (1985) indicated that during the 1970s, constructing personality tests involved greater

application of psychometrics and higher standards than ever before. Still, personality tests constructed strictly for use in industry had not fully evolved.

Probably the most comprehensive recent work on using personality assessments in industrial settings was put together by Bernardin and Bownas in 1985. This collection contains the works of a number of researchers originally presented at a 1983 symposium on personality assessment in organizations. This symposium and the resulting volume illustrate the renewed interest in personality assessment in organizations. The authors look very carefully at past research, and generally conclude that past skepticism may not be justified.

Bentz (1985) presents numerous studies conducted in a large retail sales organization demonstrating personality attributes are stable over time, and more importantly, selected attributes (e.g., sociability, self-confidence) do predict managerial performance. Follow up studies conducted seven and nine years after the initial personality assessment still showed strong relationships between personality variables and performance. Validities in these studies reached .70, much greater than would be expected based on the above review articles.

If one carefully considers the use of personality assessment in organizational settings, it becomes clear that personality judgments are made very often. These assessments tend to be subjective rather than objective, quantifiable judgments. Consider the following examples: "He certainly has the drive to be a good salesman," or "She seems intelligent and capable," or "There's no way I would hire

a loudmouth like that," or "She dresses very professionally, but her attitude leaves a little to be desired." Each of these statements looks at small pieces of a person's personality. Each piece can have a large halo effect on personnel decisions. Bernardin and Bownas (1985) provide a sound summary of both the empirical/quantitative and the more applied/subjective views of personality assessment in organizations:

> . . . the true issue becomes not whether personality variables *will* be assessed in organizations but *which* characteristics should be measured and *how* they can be assessed most validly (p. v).

In other words, employers are going to look at personality whether they have valid instruments or not. The 1980s have seen a renewed interest in using personality tests in personnel decisions (Bernardin & Bownas, 1985; Muchinsky, 1986). Rationale for continuing study in this area exists, and corresponding research is occurring.

Management style. As in a contingency theory of management, no one structure or style always works best. Data suggest that a combination of styles provides a manager the resources needed in changing situations. For example, one effective hybrid style is attained by combining authoritative and coaching styles with some democracy (McBer and Company, 1980a). Past research classified women as more accommodating and men as more exploitive. Men were, on the

average, also characterized as more authoritarian than women (Denmark & Diggory, 1966). Schein (1973), in her work on stereotypes, found that "successful middle managers were perceived to possess characteristics, attitudes, and temperaments more commonly ascribed to men in general than to women in general" (p. 99). Alternatively, Chapman (1975) found no significant differences between men's and women's management styles.

Haccoun, Haccoun, and Sallay (1978) suggested that in view of the apparent differences in male/female characteristics, women managers were expected to behave differently than male managers. Typical "female" supervisory styles, as discussed above, were viewed by subordinates as more appropriate for female than for male supervisors. Gender-specific management styles were reinforced and stereotypes prospered. These authors argued that a contingency model of management style should be used taking into account the sex of both the supervisor and the subordinate. When both factors were considered, one could make better decisions regarding the management style to use. Further, a worker's locus of control (internal *vs.* external) influenced the subordinate's satisfaction with his/her supervisor's management style (Runyon, 1973). Therefore, it appears an appropriate management style can be determined only after considering a number of factors, including the situation, subordinate characteristics, and supervisor characteristics.

The Ohio State studies (e.g., Fleishman, 1953; Fleishman & Peters, 1962; Halpin & Winer, 1957; Stogdill & Coons, 1957) suggested that two dimensions of a manager's behavior determined his/her style and effectiveness. These two dimensions, "consideration" and "initiating structure," dealt with a manager's orientation toward people and toward tasks, respectively. Blake and Mouton (1964) also considered two similar dimensions as the determinants of managerial success (although they label the dimensions differently, calling them "concern for people" and "concern for production"). These dimensions existed not on opposite ends of a continuum, but were orthogonal to each other. That is, a high level of development on one dimension did not indicate a lack of development on the other. Blake and Mouton positioned concern for people on the vertical axis and concern for production on the horizontal axis of a nine-point grid. They suggest that the most effective manager used both dimensions to their greatest extent (a so-called 9,9 manager because that person scored at the top of a nine point scale on both dimensions).

Studies of management style in the early 1960s (e.g., Hicks & Stone, 1962; Mahoney, Jerdee, & Nash, 1960) concluded that the effective manager possessed certain traits such as dominance, intelligence, assertiveness, and energy. Unfortunately, the above traits were only the tip of the iceberg. The list of favorable personality traits attributed to effective managers became so large and encompassing, that virtually no positive human attribute was omitted (Campbell,

Dunnette, Lawler, & Weick, 1970). Such a large catalog of attributes represents an impressive amount of research, but to say that an effective manager is "good" provides little useful information.

Pinder and Pinto (1974) found that a manager's age influences his/her management style. Younger managers (20-29 years old) were, on average, autocratic, poor in human relations skills, quick in decision making, and unlikely to consult with co-workers. Early middle-age managers (30-40) were inclined to gather more information than their younger counterparts before making a decision and were more courteous, yet formal. The 40-55 year old (late middle-age) managers' style seemed to be a hybrid of the two younger groups. These older managers made quick, yet informed decisions, and had greater human relations and interpersonal skills than either group of younger managers. The authors also concluded differences in managerial style were a function of age, not experience. Factors such a education level, college major, and income were not found to be significantly related to management style.

Lowin and Craig (1968) questioned whether managerial style influenced subordinate productivity (the common assumption), or whether subordinate productivity influenced managerial style. The investigators manipulated subordinate performance (using a confederate), and found the managerial style used by a supervisor differed depending on the subordinate's performance. This research

should serve as a caution in interpreting correlational data in general (i.e., correlation is not causation), as well as the performance-style interaction.

The type of organization for which one works may influence management style. Managers in non-business organizations (e.g., government, military) tend to use more directive and less participative styles than managers in business settings (e.g., banks, insurance companies) (Chitayat & Venezia, 1984). This research also cautioned against aggregating data across types of organizations.

Personality and managerial style have been theorized to predict management performance. Both concepts are abstract and difficult to measure. Nonetheless, numerous personality and style inventories are available. Some have gone through a rigorous development process while others have little or no empirical basis. The integrity of the psychological testing community suffers greatly from the latter.

The present study is a predictive criterion-related validity study of personality characteristics (measured by the Adjective Checklist, Gough & Heilbrun, 1983) and managerial style (measured by the Managerial Style Questionnaire, McBer and Company, 1980b) on subsequent management performance. Because both of these assessments are currently used in making personnel decisions, determining the predictive accuracy of the ACL and the MSQ is desirable. General literature contains little recent research on personality assessment in organizations, making this study important in a second, broader sense. The business community has

again begun to accept psychological assessment in organizations as appropriate. In addition, validity studies are needed to support industry's interests in psychological testing as well as the integrity of the industrial psychology field.

Method

Subjects

A management consulting firm in a metropolitan area of the Midwest agreed to provide ACL and MSQ scores for managers assessed within the past five years. Several of the consulting firm's clients were contacted and asked whether they would be willing to participate in this research. Consenting organizations were assured of confidentiality for the organization as well as the individual participants. These firms would benefit by having locally validated selection instruments available to them through the consulting firm. The subject pool consisted of 500 managers drawn from the files at the management consulting firm. Subjects represented a number of industries including insurance, manufacturing, foods, and service trades.

Predictors

The Adjective Check List. The Adjective Check List (ACL) (Gough & Heilbrun, 1983) contains 300 adjectives and adjectival phrases (see Appendix A) which can be used to describe a person's characteristics or attributes. The instrument was developed in the late 1940s and has been used in its current form since 1952. The 300 adjectives are combined to produce 25 scales. Appendix B illustrates these scales and provides a brief description of each. The ACL was originally designed as an instrument to evaluate others. The modal use today, however, is self-evaluation.

According to *The Ninth Mental Measurements Yearbook* (*MMY*)(Teeter, 1985; Zarske, 1985), the ACL was normed on 5,238 males and 4,144 females. Many subjects were high school, college, graduate or medical students. The sample contained delinquents and psychiatric patients as well as other adults. The sample was primarily drawn in California and New York, with some subjects from the Midwest. The representativeness of the sample has been questioned. For example, of the 5,238 males involved, 2,275 were college, graduate or medical students. The adult group also contained a high concentration of professionals (e.g., architects, business executives, research scientists). The *ACL Manual* (Gough & Heilbrun, 1983) presented no age norms.

As reported in the *ACL Manual*, internal consistencies for about half of the 25 scales were moderately high to high (described below). Lower reliabilities indicated that caution should be employed in interpreting the other half of the scales. Alpha coefficients were computed from a sample of 591 males and 588 females. For the male sample, coefficients ranged from a high of .95 on the Favorable scale, to a low of .56 on both the Succorance and Change Scales. The median alpha coefficient for males was .76. Alpha coefficients ranged from .94 for the Favorable Scale to .53 on Counseling Readiness with a median of .75 for the female sample.

Test-retest reliabilities were calculated from non-representative samples. Therefore, the coefficients should be interpreted with care. Test-retest reliabilities

for males ($n = 199$) were the highest for the Aggression Scale (.77) and lowest for the High Origence-Low Intellectence Scale (.34) with a median of .65. The female sample was much smaller with an *n* of only 45. Test-retest reliabilities for females had a median of .71, a high of .86 (Exhibition) and a low of .45 (Feminine, High Origence-High Intellectence, and High Origence-Low Intellectence Scales). Gough and Heilbrun (1983) attribute the low reliabilities to both changes in the subjects, as well as error in the instrument. Neither the *ACL Manual* nor *MMY* present any validity coefficients.

Managerial Style Questionnaire. The Managerial Style Questionnaire (MSQ) (McBer and Company, 1980b) is a self-report inventory which measures an individual's perceptions of how he/she manages. It is a relatively new assessment instrument, published in 1980. The MSQ contains 36 pairs of statements describing managerial behaviors (see Appendix C). Subjects are instructed to indicate which statement describes them more accurately. Each item chosen within a pair contributes to the subject's score on one of six managerial styles. Paired items may or may not reflect the same style. Table 2 lists the six styles and brief descriptions of each. Items are paired in a manner which helps eliminate selection biases based on social desirability. That is, the choices are not between desirable and undesirable behaviors, but rather a choice between two effective management strategies.

Table 2 Managerial styles and descriptions

Management Style	Style Column (in Appendix C)	Description
1. Coercive	A	The *Do it the way I tell you* manager who closely controls subordinates and motivates by threats and discipline.
2. Authoritative	B	The *Firm but fair* manager who gives subordinates clear direction and motivates by persuasion and feedback on task performance.
3. Affiliative	C	The *People first, task second* manager who emphasizes good personal relationships among subordinates and motivates by trying to keep people happy with fringe benefits, security, and social activities.
4. Democratic	D	The *Participative* manager who encourages subordinate input in decision making and motivates by rewarding team effort.
5. Pacesetting	E	The *Do it myself* manager who performs many tasks personally, expects subordinates to follow his or her example, and motivates by setting high standards and letting subordinates work on their own.
6. Coaching	F	The *Developmental* manager who helps and encourages subordinates to improve their performance, and motivates by providing opportunities for professional development.

Note. From McBer and Company, 1980a.

Raw scores were determined by counting the number of times a choice corresponded to each management style (see Style column in Appendix C). Raw scores were converted to percentiles and plotted on a profile provided by the publisher. Scores ten or more percentile points higher than the other scores indicate predominant management styles. Multiple predominant styles are possible. A manager with more than one predominant style probably alternates among these styles as the situation dictates (McBer and Company, 1980a). Management styles scores ten points lower than the dominant styles and ten points higher than the remaining scores are called "backup styles." These backup management styles may surface occasionally in situations where dominant styles are ineffective or inappropriate.

The publishers of the MSQ emphasize that none of the six styles is better than the others. The appropriate management style is the one that works best in a certain situation with certain people. The purpose of the inventory is to illustrate which management styles a person uses, and to sensitize these managers to the need to change styles as the situation dictates.

The MSQ was normed on 400 managers from industry, government, military, and educational organizations. The dominant style was Authoritative (33% of subjects), followed by Democratic (22%), Coaching (17%), Coercive (10%), and Affiliative and Pacesetting (each at 9%). No race or sex differences in management style were observed (McBer and Company, 1980a; 1980c).

Reliability and validity data are very limited. McBer and Company (1980c) present test-retest reliabilities from one of two samples. Table 3 lists the coefficient of stability for each of the six scales as well as for the instrument's overall mean. No time interval between MSQ administrations was indicated. Although the reliabilities for five of the six scales and the overall mean were significant at $p<.01$, the magnitude of the coefficients was lower than one would like in an instrument used for assessing individuals. The range of the significant coefficients (from .58 to .82) indicated that measurement error may have accounted for at least 18% and up to 42% of the variance in scores over time. Actual changes in the subjects' styles may have accounted for a portion of the variance. Data on another sample ($n=33$) were not presented by the MSQ publishers. The publishers indicated that all six scales achieved criterion-related validities significant at $p<.05$ or better, but did not present any validity coefficients or information on sample demographics. The MSQ is not evaluated in the *MMY*.

Criteria

The criteria involved in this research were measures of management performance/effectiveness. A performance appraisal instrument was developed by the author based on the PDI Model of Management Effectiveness (Silzer, 1986). The PDI model contains eight factors and 33 dimensions of management performance (see Appendix D). The performance appraisal instrument is presented in Appendix E. This instrument was designed to measure the eight PDI

Table 3 Test-retest reliabilities for six MSQ scales and overall mean (n = 19)

Managerial Style	Coefficient of Stability (r_{xx})
Coercive	.82***
Authoritative	.38
Affiliative	.77***
Democratic	.69**
Pacesetting	.64**
Coaching	.58**
Instrument mean	.67***

Note. From McBer and Company, 1980a. ** $p < .01$. *** $p < .001$.

factors as well as an overall managerial performance/effectiveness scale. Nine performance scores plus a composite of the nine are possible.

The nine-item form was chosen over a longer form in order to encourage a greater response rate. The nine-item form sacrifices the possibility of computing reliabilities for the criteria in order to obtain enough data to complete the study. A 34 item form (the 33 PDI dimensions plus an overall score) would probably have been too imposing, and therefore, not completed. An intermediate length form (i.e., two items per factor) was also considered, but the length, again, outweighed the possibility of assessing reliabilities. Two responses per factor would not provide much more information than would a single measure of the factor.

The performance appraisal items were quite general in nature because of the diverse number of positions that were evaluated. Although all subjects were considered managers, their levels within the organization may have differed greatly. The duties of each subject were also distinct. A more narrow instrument would not be applicable to such a sample. Criterion data was collected from the subjects' supervisors. The criterion data collection method is discussed below.

Procedure

Psychologists from a management consulting firm administered both the ACL and the MSQ to subjects as part of a preemployment assessment within the past five years. Client companies subsequently either offered positions to the subjects or did not hire the candidates. A research packet (see Appendix F) was

sent directly to subjects at their place of employment. This packet contained a cover letter, consent form, a subject's demographic questionnaire, a supervisor's demographic questionnaire, and a nine-item performance appraisal form. After completing the consent form and the subject's demographic form, subjects were instructed to pass the entire packet (including the attached addressed, stamped envelope) to their supervisors. Each supervisor then provided demographic information about him/herself, and completed a performance appraisal of the subordinate (the subject). The packet was then placed in the envelope and returned to the investigator by the date indicated on the form. Subjects whose packets were not received by the investigator within seven to ten days following the requested return date were contacted by mail and reminded to complete and return the packet.

Statistical Analyses

Preliminary analysis included calculating the following correlation matrices: (a) intercorrelations among ACL scales, (b) intercorrelations among MSQ scales, (c) correlations of the ACL scales with criterion scores, (d) correlations of MSQ scales with criterion scores, and (e) correlations of scales on the two predictors (ACL & MSQ) with demographic data (e.g., age, tenure). Basic descriptive statistics (frequencies, means, standard deviations) were calculated on the demographic information.

A factor analysis of the ACL scales was performed. Based on the factor analysis discussed in the *ACL Manual*, it was expected that the scales would group into interpretable factors. Interpreting 25 scales was cumbersome, so reducing the data should make using the ACL easier.

The subject pool was not large enough to be split into two groups for cross-validation purposes. Regressions of the criterion scores on predictor scales were calculated. ANOVAs were computed to determine whether predictor scores differed as a function of a manager's performance level.

Results

Return Rate

Predictor data were collected on 500 subjects. A number of unforseen circumstances (e.g., takeovers, reorganizations) occurred in companies that had agreed to participate; therefore, only 420 of the 500 subjects were sent questionnaires. Of these 420 questionnaires, 347 (83%) were returned. Thirty percent (126) of the 420 subjects were current employees of the participating companies and provided complete data sets. The remaining 221 were no longer with the company, never hired, or deceased. Calculations on predictor variables are based on an *n* of 500. Criterion data are based on an *n* of 126.

Sample Demographics

Of the 121 subjects who indicated their sex, 89 (74%) were male and the remaining 32 (26%) were female. Three American Indians (3%), one Black (1%) and 117 Whites (96%) responded. Ages ranged from 21 to 55 with a mean of 36.5 years and a mode of 33 years. A subject's tenure with his/her current company ranged from one month to 406 months (33 years 10 months) with a mean of 83.5 months (6 years 11.5 months) and a mode of 46 months (3 years 10 months).

Preliminary Analyses

Correlations among scales within each predictor and among the criterion scales were calculated. The correlation matrices for the 24 ACL scales, the six MSQ scales, and the ten criterion scales are presented in Appendix G. Note the

great number of significant correlations among scales within each instrument (especially the ACL and performance scales). The high correlations among scales allowed greater confidence in performing the factor analyses described later.

Correlations among Predictor and Criterion Scales

Pearson product-moment correlations were calculated among the ten criterion scales[1], twenty-four ACL scales and six MSQ scales. A 25th ACL scale (Total number of adjectives checked) was dropped from analysis because it acted as a validity scale rather than a personality scale.

Table 4 presents correlations among the ACL and criterion scales (the 24 ACL scales are described in Appendix B). Correlations range from -.22 to .29, with a great many at or below .10 in absolute value. Twenty-nine of the 240 coefficients were significant at the .05 or better level, more than twice the number expected by chance alone (i.e. ~12 significant correlations). The largest single correlation of .29 explained 8.4% of the variance in its associated criterion scale. Table 4 also contains multiple Rs for each criterion scale.

Similar results were obtained in the management style (MSQ)-management performance correlation matrix. This 6 x 10 matrix is presented in Table 5. Coefficients were generally below .10 in absolute value. Three of the 60 correlations were significant, right at the chance (5%) level.

---

[1] The ten criterion scales are composed of the nine scales presented in Appendix E plus a composite scale.

Table 4 Pearson product-moment correlations among ten management performance scales and 24 personality scales ($n = 126$)

	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
DF	12	09	02	05	-17	-01	-03	11	04	03
FAV	18*	04	12	06	-16	-03	00	07	08	05
UNFAV	-05	06	-07	-02	15	15	01	-02	01	04
SCFD	04	08	27***	27***	03	10	08	08	21**	18*
SCN	17*	06	-01	-09	07	-05	16*	13	00	06
LAB	14	29***	14	15*	08	28***	12	05	19*	21**
PADJ	06	03	04	-07	-14	-20*	05	00	-02	-04
ACH	-02	-01	12	20*	-02	01	06	05	11	08
DOM	-07	03	18*	20**	04	02	02	-05	13	08
END	-10	-07	-03	07	-02	-08	-02	-06	-06	-05
ORD	-10	-07	-06	04	-05	-10	03	-05	-09	-06
INT	20*	14	09	08	-13	02	13	18*	10	11
NUR	13	-03	-05	-05	-13	-16*	02	-01	-03	-05
AFF	12	-08	00	-10	-22**	-19*	-06	-05	-02	-09
HET	11	07	13	09	-14	-05	-07	02	09	04
EXH	06	-01	13	14	01	02	-11	00	12	06
AUT	-08	01	11	11	12	18	-02	-06	11	07
AGG	-12	05	07	18*	05	13	-02	-02	12	07
CHA	05	05	04	10	-03	16	-05	-01	10	06
SUC	02	02	-12	-08	03	03	04	10	-02	00
ABA	10	-01	-17*	-18*	-06	-04	04	05	-09	-06
DEF	12	-07	-15*	-22**	-10	-18*	03	03	-14	-10
CRS	06	07	-03	-11	-02	-04	-05	03	-03	-02
CR	02	09	07	18*	07	21**	09	-03	12	12
Mult R	48	54	53	47	50	52	55	51	48	52

Note. Decimals omitted. * $p < .05$. ** $p < .01$. *** $p < .001$. C1 = Interpersonal Skills; C2 = Communication Skills; C3 = Personal Adaptation; C4 = Motivation and Commitment; C5 = Occupational/Technical Knowledge; C6 = Cognitive Skills; C7 = Administrative Skills; C8 = Leadership Skills; C9 = Overall Performance Rating; and C10 = Composite Performance.

Table 5 Pearson product-moment correlations among ten management performance scales and six management style scales ($n = 126$)

MSQ	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
A	07	-07	02	-15	04	-09	-08	03	-06	-04
B	-02	-06	03	-03	-07	-08	-03	00	01	-02
C	06	-05	03	-11	-20*	02	-02	-10	-05	-07
D	05	11	-02	12	06	11	09	02	00	08
E	-26***	01	-15*	03	02	02	01	-09	-03	-07
F	-02	04	03	13	-04	02	01	10	08	04
Mult R	33	20	18	33	25	17	15	24	26	23

Note. Decimals omitted. * $p < .05$. *** $p < .001$.
MSQ Scale Names: A = Coercive Style; B = Authoritative Style; C = Affiliative Style; D = Democratic Style; E = Pacesetting Style; F = Coaching Style.
Criterion scale C1 = Interpersonal Skills; C2 = Communication Skills; C3 = Personal Adaptation; C4 = Motivation and Commitment; C5 = Occupational/Technical Knowledge; C6 = Cognitive Skills; C7 = Administrative Skills; C8 = Leadership Skills; C9 = Overall Performance Rating; and C10 = Composite Performance Scale.

Correlations among a subject's age, tenure, and performance scores were calculated. The sample size used in the calculation of the performance-age correlations was smaller ($n=36$) than that used to calculate the performance-tenure relationship ($n=116$) due to missing data. These correlations are presented in Table 6. A manager's score on seven of the ten criterion scales was significantly associated with his/her tenure, but not with his/her age. A manager's assessed performance decreases as tenure increases. As a manager grows older, eight out of ten facets of performance also decrease. Knowledge (cognitive skills and occupational/technical knowledge) aspects increase with age, though not significantly. Note a number of the performance-age correlations were larger than their corresponding performance-tenure correlations, yet were non-significant. None of the six MSQ scale scores were significantly associated with either age or tenure.

Factor Analysis

Because of the number of variables, factor analysis was used to determine how the ACL scales grouped, how the MSQ scales grouped, and how the criterion scales grouped. Factor analyses were conducted on each of the three instruments individually. Factoring the six MSQ scales provided little benefit over using the scales themselves. That is, the variance explained by a factor was only slightly more than that explained by an individual item (eigenvalues slightly over 1.0). Initial analyses of the ACL and criterion scales were used to determine the number of

Table 6 Pearson correlations among age, tenure and ten criterion scales

	Age (n=36)	Tenure (n=116)
C1 Interpersonal	-25	-09
C2 Communication	-20	-20*
C3 Pers. Adaptation	-06	-21*
C4 Motiv. & Commitmt.	-12	-27**
C5 Occ/Tech Knowledge	09	-03
C6 Cog. Skills	19	-24**
C7 Admin. Skills	-20	-16*
C8 Ldrshp. Skills	-13	-15
C9 Overall Rating	-21	-19*
C10 Composite Rating	-17	-23**

Note. Decimals omitted. * $p < .05$. ** $p < .01$.

factors to subsequently extract and rotate. Figure 1 presents a plot of the percent of residual variance accounted for by additional factors for both the criterion and ACL scales.

Two of the criterion scales were not included in the final factor analysis because of multicollinearity. Scale C10 (the composite scale) was not used because it was comprised of all of the other scales. Scale C9 (Overall rating) was dropped because it loaded highly on more than one factor. Their removal allowed for a more interpretable factor solution. One factor was extracted due to the drop in residual variance accounted for following the first factor in the criterion analysis. No rotation was necessary because of the one factor solution. This factor was labelled "Management Performance." Factor loadings and eigenvalues for this factor analysis are presented in Appendix H.

The plot of residual variance accounted for by the ACL scales indicates a three factor solution (see Appendix H for factor loadings and eigenvalues). The first factor consisted of the following scales: defensiveness, favorable, self control, personal adjustment, endurance, intraception, nurturance, and affiliation, all loading positively. Additionally, the unfavorable and aggression scales loaded negatively. A manager scoring highly on this scale is likely to work well with others and the factor is thus labelled "Team Player."[2] This factor has good reliability ($\alpha = .89$).

---

[2] Thanks to Dr. Jim Copley of the Student Counseling Service at Iowa State University for his help in interpreting and naming the ACL factors.

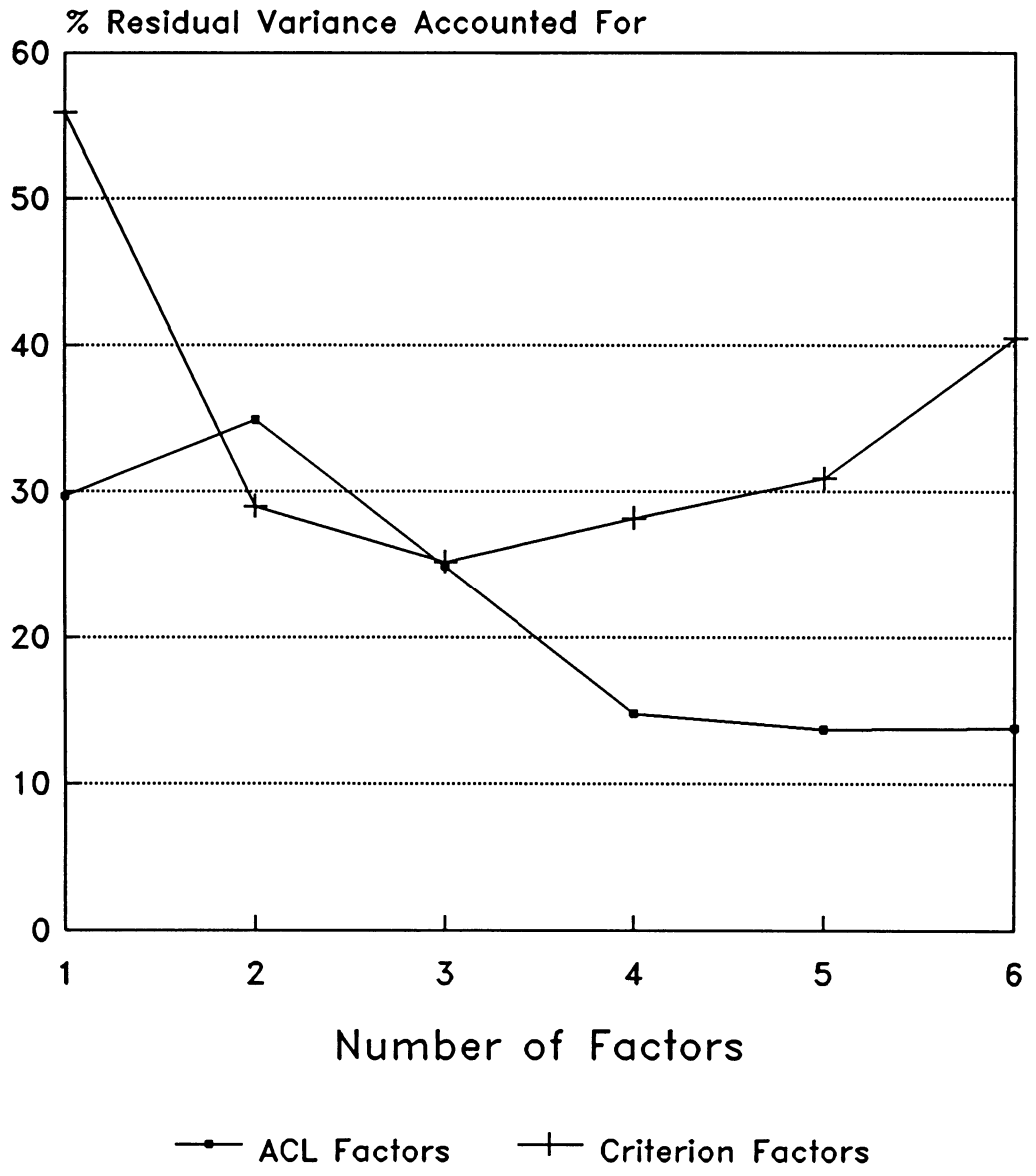

Figure 1 Variance accounted for by ACL ($n = 500$) and criterion ($n = 126$) factor

The second factor was comprised of the self-confidence, achievement, dominance, exhibition, autonomy, and aggression scales with positive loadings, and the succorance, abasement, and deference scales with negative loadings. Factor two seemed to describe a typical Type "A" person, or someone with a great need for individual power. The second factor was thus labelled "Power." Coefficient alpha for this scale was also good at .92. Factor three, labelled "Social Interaction", consisted of four scales with positive loadings (lability, heterosexuality, exhibition, and change) and two negatively loading scales (endurance and order). Reliability for this scale was slightly lower than the other two factors, yet still strong ($\alpha = .82$). A single factor analysis including all the predictor variables (i.e., 24 ACL scales and six MSQ scales) produced a correlation matrix that was unfit for factor processing and extraction.

Correlations Among Factors

The three ACL factors and the six MSQ scales were correlated with the single criterion factor. Table 7 presents correlations for the nine predictors and the single criterion factor. Correlations were calculated among the three ACL factors, the criterion factor, and age and tenure. Power (ACL factor two) scores were significantly associated with one's tenure ($r = -.24$, $p < .01$, $n = 118$), but not with one's age ($r = -.08$, $p > .05$, $n = 154$). Similarly, scores on the criterion factor were significantly associated with a manager's tenure ($r = -.23$, $p < .01$, $n = 118$) but not with a manager's age ($r = -.15$, $p > .05$, $n = 36$).

Table 7 Correlations among nine predictors and the criterion ($n = 126$)

	Management Performance
ACL Factor 1	-01
ACL Factor 2	05
ACL Factor 3	08
MSQ Coercive	-03
MSQ Authoritative	-02
MSQ Affiliative	-06
MSQ Democratic	09
MSQ Pacesetting	-07
MSQ Coaching	04

Note. Decimals omitted.

Analysis of Variance

ANOVAs were computed to determine whether any differences existed in predictor scores between current managers and those individuals not hired. A four level variable was created to allow comparisons among four groups of subjects. Three of the four groups were the current managers broken down by assessed performance. A manager's performance was calculated from scale C10, the composite scale[3]. The bottom 27% of the managers comprised the low performance group, the middle 46% contained the moderate performance group, and the remaining 27% were the high performers. The fourth group consisted of subjects not hired following the preemployment assessment.

The nine predictors (three ACL factors and six MSQ scales) were analyzed to determine whether differences existed among the four groups. The only significant difference was in the MSQ Coercive scale ($F_{3,214}=4.632$, $p=.004$) (ANOVA summary tables appear in Appendix I). Figure 2 presents plotted mean scores on the Coercive scale for each of the four groups. Both the not-hired group and the moderate performers scored lower on the Coercive scale than either the low or high performing managers. Moderate performers were the least coercive, on average, and high performers were the most coercive, on average. None of the ACL factors showed any difference among the groups.

---

[3] Analyses were also conducted on the criterion factor. Similar results were obtained.

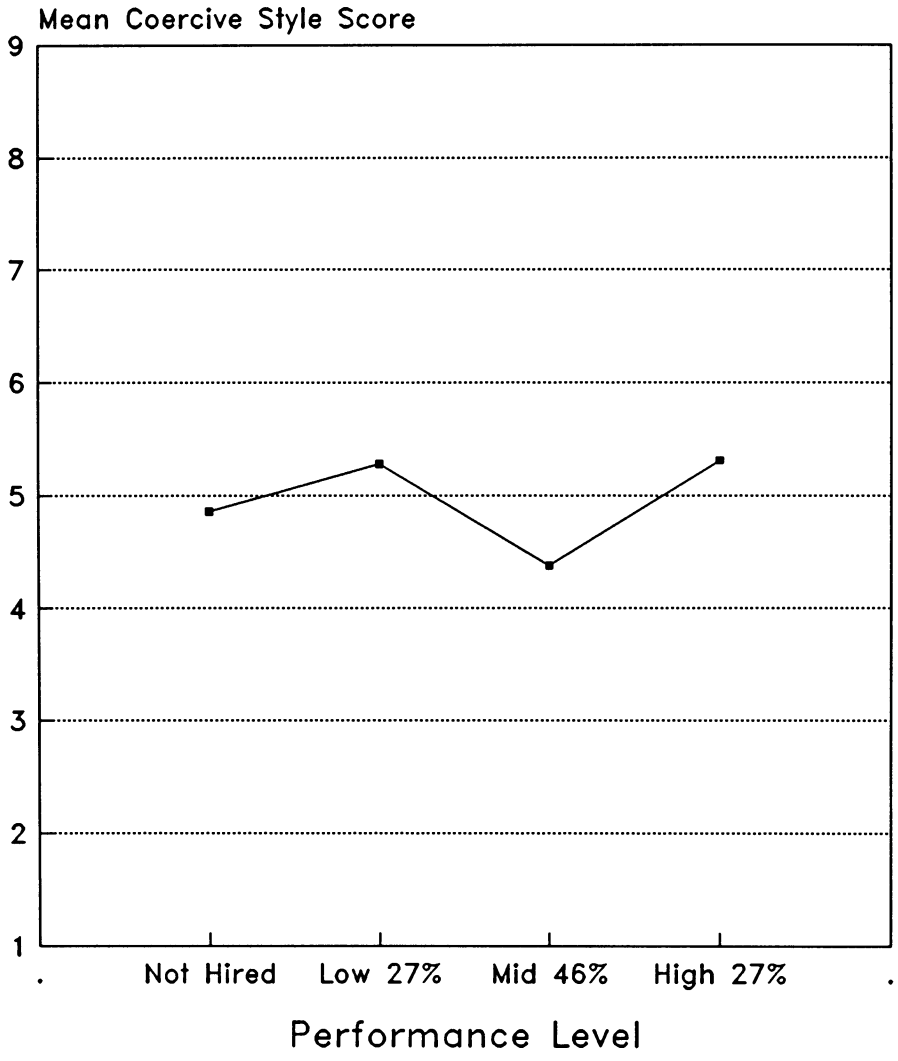

Figure 2 Mean coercive style scores for four groups

Again the nine predictors were analyzed to determine whether differences existed among the current managers ($n=126$) at different levels of performance (low, moderate, and high performers described above). In this set of analyses, two predictors were significantly different among the groups. Again, the Coercive scale scores were different among groups. The level of significance was not as high as in the previous analysis ($F_{2,117}=3.874$, $p=.023$).

Differences were also found in scores on the MSQ Affiliative scale ($F_{2,117}=3.5$, $p=.033$). Here the high performing managers were significantly less affiliative than either their moderate or low performing counterparts. Figure 3 illustrates the mean plots for the three groups for both the Coercive and Affiliative scales.

Because the majority of the ANOVAs conducted resulted in "no difference" conclusions, the 126 current managers who provided complete data sets appeared to be a representative sample of the original 500. This allowed for greater confidence in the results. Calculations investigating whether predictor scores varied by industry were not performed because of low *n*s (and associated low statistical power) within each industry. The sample was comprised predominately of white males, so, for similar reasons, race and gender differences were not calculated.

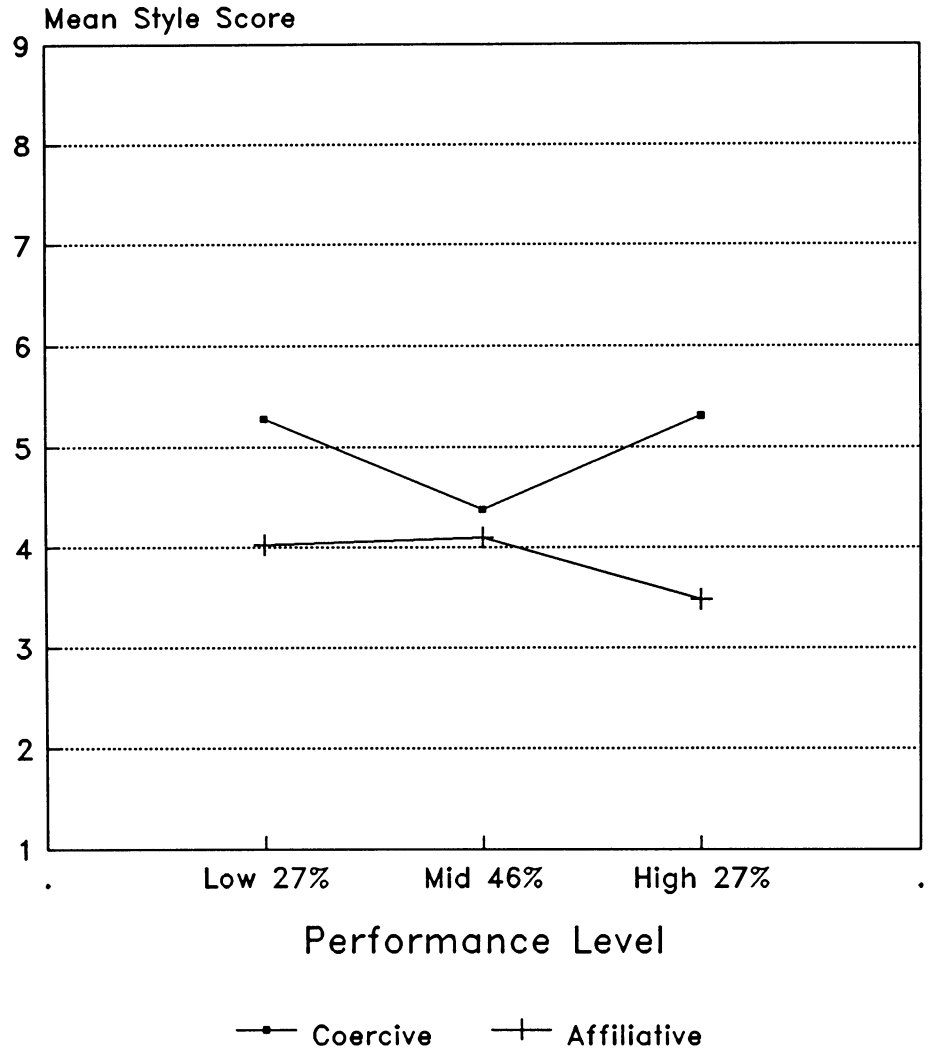

Figure 3 Mean management style scores for three performance levels

Summary

Generally it appeared that neither these personality factors nor management styles predict management performance. Zero-order validity coefficients were mostly in the teens or less. Twenty-four ACL scales were reduced to three factors through factor analysis. Eight criterion scales reduced to one factor. The MSQ scales were not changed following factor analysis. Validity coefficients computed for factor scores were even lower than the zero-order coefficients. The management performance criterion factor exhibited good reliability with an alpha of .88. The three ACL factors (Team Player, Power, and Social Interaction) attained alphas of .89, .91, and .82, respectively. Reliabilities could not be calculated for the six MSQ scales.

ANOVA results were generally non-significant, which indicated managers with different performance levels scored similarly on the predictors. The no-difference results between current managers and those assessees not hired indicated the sample of 126 managers was representative of the original sample of 500. Industry differences were not calculated because of low numbers of subjects within each industry. Gender and race differences were not calculated because of the sample demographics. The sample was predominantly white males in their mid 30s.

Discussion

The Current Research

The data gathered in the present study indicate that personality, as measured by the ACL, and management style, as measured by the MSQ, are generally not predictive of managerial performance. As illustrated in Table 4, certain ACL scales do correlate significantly with performance in specific areas of managerial performance, but overall validities are very low. Certain aspects of managerial performance (e.g., motivation and commitment, cognitive skills) may be more closely related to personality variables than other aspects (e.g., communication skills, administrative skills), and therefore more accurately predicted by a personality measure.

Validities of the MSQ scales indicate that self-reported management style does not predict management performance. Significant correlations were only at chance level, so the true validity of any of these correlations is suspect. A manager's style, per se, may not be viewed as important. What is important, perhaps, is whether or not he/she gets the job done. How this end is accomplished may not be critical.

Combining personality measures in a manner suggested by the factor analysis solution provides no more useful information than the individual scales. The single factor solution for the criterion scale factor analysis suggests raters did not differentiate among the individual performance dimensions. Rather, a great

deal of halo may have been involved. The multiple scales may have added reliability, but not validity. Reliabilities for all three ACL factors are within the range desirable for use in psychological assessment (alphas = .89, .92, .82).

Coefficient alpha could not be calculated for the six MSQ scales. The possibility exists that these reliabilities were low, influencing the magnitude of the validity coefficients. The six scales appear to be independent of one another. None grouped during factor analysis.

ANOVAs were run as another means of assessing the validity of the nine predictors (three ACL factors and six MSQ scales). The first set of analyses compared predictor scores of current managers at three different levels of performance, low 27%, middle 46%, and high 27%, with scores of individuals not hired. Only one of the nine analyses was significant, and could be due to chance. In the analysis finding a difference, non-hired and mid-performing managers scored lower on the MSQ coercive scale than did either low- or high-performing managers. If this is a true difference and not due to chance it may be interpreted as follows: Those not hired were not "forceful" enough; they were not able to defend their positions or convince others of their views. Low performing managers are perhaps too dependent on talking other people into doing their work. They may be seen as conniving and lazy. Mid-performance managers are less coercive than any of the other three groups. They may be seen as hard working and independent. They may do all of their own work, neither delegating nor pushing work on others. High-

performing managers are the most coercive of all four groups. Because they are high performers, their actions may be viewed not as coercion, but rather legitimate delegation.

Correlations among performance and tenure indicated that performance was lower for managers who had been with their organizations for longer periods of time. Supervisors may have higher expectations for managers with greater tenure. Knowledge seems to increase with age, though non-significantly. Both occupational/technical knowledge and cognitive skills were positively correlated with age. All eight other aspects of performance were negatively correlated with age, perhaps for the same reasons as the tenure-performance relationships.

The overwhelming majority of ANOVAs were non-significant, which can be viewed both negatively as well as positively. The negative aspect is no difference in predictor scores for managers performing at different levels appears to exist. That is, these measures have little, if any, validity for identifying assessees who will perform at certain managerial levels. On the other hand, the 126 complete data sets did not differ from the other 374, indicating the managers who did respond were representative of the total sample. This allows greater confidence in the results obtained by the present study. Had the 126 been different from those whose performance data could not be collected, the results may have been questioned as chance results.

Research on assessment centers has found relatively strong validity coefficients. These results have been criticized on the grounds that bias accounts for inflated performance ratings for those individuals successfully completing a rigorous assessment center. That is, if the person is good enough to get through all the demands of the assessment center, that person is surely capable of performing well on the job. A similar argument may be presented for the validity of psychological assessment. In the current research, the validity coefficients are not large enough to warrant such an attack. Had the validities had been higher, this study could have been successfully defended because not everyone who completed the psychological assessment process was selected for employment. Even though the entire sample scored similarly on most of the predictors, as evidenced by non-significant ANOVAs, the majority were not offered the positions for which they were assessed. It appears, then, that selection decisions were based on more than mere biases.

While the validities for the predictors are low (i.e., they do not seem to predict managerial performance), they may be useful in preemployment assessments for another reason. The individuals participating in the assessment process may be a homogenous group. That is, one person's qualifications may be very similar to the others vying for an open position. Results of the ACL and MSQ may help the assessor differentiate among those who have been assessed.

Therefore, while little empirical validity exists, a strong illusion of validity may "justify" using these instruments.

Prior Research

Just as one "hopes" to win a lottery, but yet fully expects not to win, it was "hoped" that personality and management style would be supported as valid predictors of management performance. Previous literature indicated that validities would be mediocre at best. Recall that previous review studies found average validity coefficients for personality measures to range from .09 (Mount & Barrick, 1990) to .28 (Ghiselli, 1973), results even higher than the average validity coefficient found in the present study. The current results are generally consistent with past research, providing support that these results are not because of chance. Had prior research found strong validities, the current research instruments and methodology could have easily been questioned.

Past research on management style has been inconsistent. Some studies have found differences in style for different levels of performance, while other studies have found no difference. Because of these inconsistencies, one cannot say the present research is consonant with past research. One could however state that the current research is not inconsistent with past research.

Methodology

As with any research, methodological problems which may influence results can be identified in the current research as well. Survey research is notorious for low return rates. While only 30% (126 of 420) of the prospective subjects returned completed questionnaires, a full 83% (347 of 420) of the questionnaires were returned, either completed or with a note indicating that the individual was never hired, no longer with the company, or deceased. Eighty-three percent is a respectable return rate.

Three levels of self-selection can be identified. First, the organizations that participated agreed to be involved in the study. The results may have been different had some organizations not agreed to participate and non-participants agreed to be involved. Second, the current employees of the participating organizations chose whether or not to complete their portion of the packet and then forward it to their supervisor. Perhaps a certain homogeneous group of managers chose not to participate. For example, low performers may not have wanted their supervisors to think about and subsequently complete the performance appraisal portion of the packet. The third level of self-selection involved the subjects' supervisors. A number of supervisors may have opted not to complete their sections of the research instrument, especially if a supervisor was asked to complete numerous appraisals. Because participation was on a completely voluntary basis, it would be difficult, if at all possible, to reduce or

eliminate the problem of self-selection. Upper management from the participating companies could have mandated that subjects and supervisors complete and return the packet, but then the integrity of the data could be questioned.

The instruments used in the current research have some problems associated with them. The Adjective Check List (Gough & Heilbrun, 1983) was not designed specifically to be used in assessing managers for selection purposes. Even when used in its intended realm, the ACL has questionable psychometric properties. The sample from which it was developed was not representative of the populations in which it is generally used. Individual items are used in multiple scales, a practice which Comrey (1988) strongly condemns. Scale reliabilities are generally lower than desirable and sample sizes used in the norming studies of the ACL varied greatly. Some samples were very adequate while others were extremely small. Each of these problems may have contributed indirectly to the poor validity coefficients obtained in the current study.

Little development and validation information about the MSQ is available, and what is available is from the publisher. Perhaps there is a wealth of proprietary research in existence, but it is inaccessible. The test publisher itself was not very helpful in identifying research sources on the instrument.

A real danger with predictors used in this research is that people are labelled and categorized. The instruments assume a person is static and behaves the same in every situation. While people may have the tendency to act in a

certain manner, situations may demand they change and use a different personality or management style. That is, situations may require a manager be dynamic, something neither of the predictor instruments considers.

The author developed the criterion scales based on a model which has been used and referred to for a number of years. The criterion factor derived from factor analysis achieved a high reliability ($\alpha = .88$). In identifying methodological problems associated with the instruments used in the current research, the criterion scales are the least open to attack.

While it is certain that the methodology of this research has had some effect on the results (as it does in all research), the extent to which this is true cannot be determined.

Recommendations

It seems that many research reports contain a section on recommendations for future research. Whether these recommendations are ever used is not easily answered. In order for industrial psychology to continue using instruments similar to those used in this research, the following changes need to be made.

First, the criterion needs to be clearly defined. What exactly contributes to exceptional management performance? How can these facets be most accurately measured? A very large scale job analysis of managers needs to be undertaken if psychologists want to accurately predict management performance in general.

Once the facets of management performance have been identified, instruments need to be developed specifically to measure these attributes. In the past tools designed for use in clinical or counseling settings have been used for selection purposes with less than acceptable results. Test development needs to be based on a thorough job analysis. Professionals involved in the selection process need to have tools which have been rigorously developed for specific needs.

While the results of this research have been less than encouraging, future research using better tools may find personality attributes are valid predictors of management performance. Much work needs to be done to develop new tools and accurately identify the criterion which is to be predicted.

References

Albright, L. (1976). Federal government intervention in psychological testing: Is it here? *Personnel Psychology, 29,* 519-520.

Anastasi, A. (1985). The use of personality assessment in industry: Methodological and interpretive problems. In H. J. Bernardin and D. A. Bownas (Eds.). *Personality assessment in organizations.* New York: Praeger.

Bentz, V. J. (1985). Research findings from personality assessment of executives. In H. J. Bernardin and D. A. Bownas (Eds.). *Personality assessment in organizations.* New York: Praeger.

Bernardin, H. J., & Bownas, D. A. (1985). *Personality assessment in organizations.* New York: Praeger.

Blake, R. R., & Mouton, J. S. (1964). *The managerial grid.* Houston: Gulf.

Campbell, J. P., Dunnette, M. D., Lawler, E. E., & Weick, K. (1970). *Managerial behavior, performance, and effectiveness.* New York: McGraw-Hill.

Chapman, J. B. (1975). Comparison of male and female leadership styles. *Academy of Management Journal, 18,* 645-650.

Chitayat, G., & Venezia, I. (1984). Determinants of management styles in business and nonbusiness organizations. *Journal of Applied Psychology, 69,* 437-447.

Comrey, A. L. (1988). Factor-analytic methods of scale development in personality and clinical psychology. *Journal of Consulting and Clinical Psychology, 56,* 754-761.

Denmark, F. L., & Diggory, J. C. (1966). Sex differences in attitudes toward leader's display of authoritarian behavior. *Psychological Reports, 18,* 863-872.

Equal Employment Opportunity Commission. (1978). Adoption by four agencies of uniform guidelines on employee selection procedures. *Federal Register, 43,* 38290-38309.

Fleishman, E. A. (1953). The description of supervisory behavior. *Journal of Applied Psychology, 37,* 1-6.

Fleishman, E. A., & Peters, D. A. (1962). Interpersonal values, leadership attitudes, and managerial success. *Personnel Psychology, 15,* 127-143.

Ghiselli, E. E. (1973). The validity of aptitude tests in personnel selection. *Personnel Psychology*, *26*, 461-477.

Ghiselli, E. E., & Barthol, R. P. (1953). The validity of personality inventories in the selection of employees. *Journal of Applied Psychology, 38,* 18-20.

Gough, H. G. & Heilbrun, A. B. (1983). *The Adjective Check List manual*. Palo Alto, CA: Consulting Psychologists Press.

Guion, R. M., & Gottier, R. F. (1965). Validity of personality measures in personnel selection. *Personnel Psychology, 18,* 135-164.

Haccoun, D. M., Haccoun, R. R., & Sallay, G. (1978). Sex differences in the appropriateness of supervisory styles: A nonmanagement view. *Journal of Applied Psychology, 63,* 124-127.

Halpin, A. W., & Winer, J. A. (1957). A factorial study of the leader behavior description questionnaire. In R. M. Stodgill and A. E. Coons (Eds.), *Leader behavior: Its description and measurement.* Columbus, OH: Ohio State University.

Hicks, J. A., & Stone, J. B. (1962). The identification of traits related to managerial success. *Journal of Applied Psychology, 46,* 428-432.

Hunter, J. E., & Hunter R. F. (1984). Validity and utility of alternative predictors of job performance. *Psychological Bulletin, 97,* 72-98.

Lowin, A., & Craig, J. R. (1968). The influence of level of performance on managerial style: An experimental object-lesson in the ambiguity of correlational data. *Organizational Behavior and Human Performance, 3,* 440-458.

Mahoney, T. A., Jerdee, T. A., & Nash, A. N. (1960). Predicting managerial effectiveness. *Personnel Psychology, 13,* 147-163.

McBer and Company. (1980a). *Managerial Style Questionnaire: Profile and interpretive notes*. Boston: Author.

McBer and Company. (1980b). *Managerial Style Questionnaire: Questionnaire*. Boston: Author.

McBer and Company. (1980c). *Trainer's Guide for the Managerial Style Questionnaire*. Boston: Author.

Mount, M. K., & Barrick, M. R. (1990, April). Another look at the validity of personality: A dimensional perspective. Paper presented at the Fifth Annual Conference of the Society for Industrial and Organizational Psychology.

Muchinsky, P. M. (1986). Personnel selection methods. In C. L. Cooper & I. Robertson (Eds.), *Review of industrial/organizational psychology* (pp. 37-70). London: McGraw-Hill.

Pinder, C. C., & Pinto, P. R. (1974). Demographic correlates of managerial style. *Personnel Psychology, 27,* 257-270.

Prentice-Hall/American Society for Personnel Administration (1975). PS/ASPA survey probes employee testing and selection procedures. *Personnel management policies and practices report*. Englewood Cliffs, NJ: Prentice-Hall.

Runyon, K. E. (1973). Some interactions between personality variables and management styles. *Journal of Applied Psychology, 57,* 288-294.

Schein, V. E. (1973). The relationship between sex role stereotypes and requisite management characteristics. *Journal of Applied Psychology, 57,* 95-100.

Schmitt, N., Gooding, R. Z., Noe, R. D., & Kirsch, M. (1984). Meta-analyses of validity studies published between 1964 and 1982 and the investigation of study characteristics. *Personnel Psychology*, *37*, 407-422.

Silzer, R. F. (1986, April). Predictions or prophecies: By data or divinity? *Symposium on psychological assessments in industry*. Symposium conducted at the First Annual Conference of the Society for Industrial and Organizational Psychology, Inc.

Stogdill, R. M., & Coons, A. E. (1957). *Leader behavior: Its description and measurement.* Columbus, OH: Ohio State University.

Teeter, P. A. (1985). Review of Adjective Check List. In J. V. Mitchell (Ed.), *The ninth mental measurements yearbook*. Lincoln, NE: University of Nebraska Press.

Tenopyr, M. L. (1981). The realities of employment testing. *American Psychologist, 36,* 1120-1127.

Zarske, J. A. (1985). Review of Adjective Check List. In J. V. Mitchell (Ed.), *The ninth mental measurements yearbook.* Lincoln, NE: University of Nebraska Press.

Acknowledgments

While a thesis is, by definition, a piece of research conducted by the individual, there is no way that I could have started, let alone completed this study without the help, insight, and guidance of a wonderful group of people. Without them I would still be in the planning stages of research.

The members of my committee deserve a lot of credit for suggesting new directions and interpretations that I could use to make this research better. Thanks goes out to Drs. Don Schuster and Sharon Griffin-Pierson for their input and suggestions. Drs. Fred Brown and Carl Roberts have been a tremendous help on the psychometric and statistical aspects of the research. When it seemed that I was stuck at a dead end with my results, they were able to come up with something a little different that helped make things easier to understand. I am very pleased to have had them on my committee.

My major professor, Dr. Paul Muchinsky, never ceases to amaze me. His knowledge of the literature and his expertise in so many areas of I/O psychology make him a perfect resource person. While he provided a lot of direction and encouragement, this project was mine and he let me do pretty much what I wanted to do. For the past two years, Paul has been a lot more than just a professor, he has been a mentor and a wealth of ideas. His love for I/O psychology is immense. Reaching his level of expertise is a goal that I think every

one of his students wants to achieve. But it is a very tough goal. To Paul, I extend my most sincere thanks.

Without the help of a number of people from Humber, Mundie & McClary in Milwaukee, Wisconsin, this project would never have gotten started. Dr. Kelley Conrad has been a source of encouragement for the past four years. He was kind enough to allow me to use the firm's files to gather the data that I needed to get this research rolling. Whenever I needed help, Kelley was there to provide support. Ann Marie Tabaska saved me a lot of time by providing much appreciated data-entry work. And Chris Escavaille always knew whatever it was that I needed to know about getting a hold of research participants. She also typed letters and made sure things went smoothly. Thanks, Kelley, Ann Marie, and Chris.

Finally, I need to extend special thanks to my wife, Jacqueline. Whenever the house was littered with journal articles, draft copies, and computer output, she understood. Even with her busy schedule, she always had time to encourage me. Her ability to transform my wandering thoughts into intelligible sentences and her editing skills have without a doubt made this thesis a much better one. Thank you so very much, Jacqueline.

Appendix A--Adjectives of the ACL

1. ABSENT-MINDED
2. ACTIVE
3. ADAPTABLE
4. ADVENTUROUS
5. AFFECTED
6. AFFECTIONATE
7. AGGRESSIVE
8. ALERT
9. ALOOF
10. AMBITIOUS
11. ANXIOUS
12. APATHETIC
13. APPRECIATIVE
14. ARGUMENTATIVE
15. ARROGANT
16. ARTISTIC
17. ASSERTIVE
18. ATTRACTIVE
19. AUTOCRATIC
20. AWKWARD
21. BITTER
22. BLUSTERY
23. BOASTFUL
24. BOSSY
25. CALM
26. CAPABLE
27. CARELESS
28. CAUTIOUS
29. CHANGEABLE
30. CHARMING
31. CHEERFUL
32. CIVILIZED
33. CLEAR-THINKING
34. CLEVER
35. COARSE
36. COLD
37. COMMONPLACE
38. COMPLAINING
39. COMPLICATED
40. CONCEITED
41. CONFIDENT
42. CONFUSED
43. CONSCIENTIOUS
44. CONSERVATIVE
45. CONSIDERATE
46. CONTENTED
47. CONVENTIONAL
48. COOL
49. COOPERATIVE
50. COURAGEOUS
51. COWARDLY
52. CRUEL
53. CURIOUS
54. CYNICAL
55. DARING
56. DECEITFUL
57. DEFENSIVE
58. DELIBERATE
59. DEMANDING
60. DEPENDABLE
61. DEPENDENT
62. DESPONDENT
63. DETERMINED

64. DIGNIFIED
65. DISCREET
66. DISORDERLY
67. DISSATISFIED
68. DISTRACTIBLE
69. DISTRUSTFUL
70. DOMINANT
71. DREAMY
72. DULL
73. EASY GOING
74. EFFEMINATE
75. EFFICIENT
76. EGOTISTICAL
77. EMOTIONAL
78. ENERGETIC
79. ENTERPRISING
80. ENTHUSIASTIC
81. EVASIVE
82. EXCITABLE
83. FAIR-MINDED
84. FAULT-FINDING
85. FEARFUL
86. FEMININE
87. FICKLE
88. FLIRTATIOUS
89. FOOLISH
90. FORCEFUL
91. FORESIGHTED
92. FORGETFUL
93. FORGIVING
94. FORMAL
95. FRANK
96. FRIENDLY
97. FRIVOLOUS
98. FUSSY
99. GENEROUS
100. GENTLE
101. GLOOMY
102. GOOD-LOOKING
103. GOOD-NATURED
104. GREEDY
105. HANDSOME
106. HARD-HEADED
107. HARD-HEARTED
108. HASTY
109. HEADSTRONG
110. HEALTHY
111. HELPFUL
112. HIGH-STRUNG
113. HONEST
114. HOSTILE
115. HUMOROUS
116. HURRIED
117. IDEALISTIC
118. IMAGINATIVE
119. IMMATURE
120. IMPATIENT
121. IMPULSIVE
122. INDEPENDENT
123. INDIFFERENT
124. INDIVIDUALISTIC
125. INDUSTRIOUS
126. INFANTILE

127. INFORMAL
128. INGENIOUS
129. INHIBITED
130. INITIATIVE
131. INSIGHTFUL
132. INTELLIGENT
133. INTERESTS NARROW
134. INTERESTS WIDE
135. INTOLERANT
136. INVENTIVE
137. IRRESPONSIBLE
138. IRRITABLE
139. JOLLY
140. KIND
141. LAZY
142. LEISURELY
143. LOGICAL
144. LOUD
145. LOYAL
146. MANNERLY
147. MASCULINE
148. MATURE
149. MEEK
150. METHODICAL
151. MILD
152. MISCHIEVOUS
153. MODERATE
154. MODEST
155. MOODY
156. NAGGING
157. NATURAL
158. NERVOUS
159. NOISY
160. OBLIGING
161. OBNOXIOUS
162. OPINIONATED
163. OPPORTUNISTIC
164. OPTIMISTIC
165. ORGANIZED
166. ORIGINAL
167. OUTGOING
168. OUTSPOKEN
169. PAINSTAKING
170. PATIENT
171. PEACEABLE
172. PECULIAR
173. PERSEVERING
174. PERSISTENT
175. PESSIMISTIC
176. PLANFUL
177. PLEASANT
178. PLEASURE-SEEKING
179. POISED
180. POLISHED
181. PRACTICAL
182. PRAISING
183. PRECISE
184. PREJUDICED
185. PREOCCUPIED
186. PROGRESSIVE
187. PRUDISH
188. QUARRELSOME
189. QUEER

190. QUICK
191. QUIET
192. QUITTING
193. RATIONAL
194. RATTLEBRAINED
195. REALISTIC
196. REASONABLE
197. REBELLIOUS
198. RECKLESS
199. REFLECTIVE
200. RELAXED
201. RELIABLE
202. RESENTFUL
203. RESERVED
204. RESOURCEFUL
205. RESPONSIBLE
206. RESTLESS
207. RETIRING
208. RIGID
209. ROBUST
210. RUDE
211. SARCASTIC
212. SELF-CENTERED
213. SELF-CONFIDENT
214. SELF-CONTROLLED
215. SELF-DENYING
216. SELF-PITYING
217. SELF-PUNISHING
218. SELF-SEEKING
219. SELFISH
220. SENSITIVE
221. SENTIMENTAL
222. SERIOUS
223. SEVERE
224. SEXY
225. SHALLOW
226. SHARP-WITTED
227. SHIFTLESS
228. SHOW-OFF
229. SHREWD
230. SHY
231. SILENT
232. SIMPLE
233. SINCERE
234. SLIPSHOD
235. SLOW
236. SLY
237. SMUG
238. SNOBBISH
239. SOCIABLE
240. SOFT-HEARTED
241. SOPHISTICATED
242. SPENDTHRIFT
243. SPINELESS
244. SPONTANEOUS
245. SPUNKY
246. STABLE
247. STEADY
248. STERN
249. STINGY
250. STOLID
251. STRONG
252. STUBBORN

253. SUBMISSIVE
254. SUGGESTIBLE
255. SULKY
256. SUPERSTITIOUS
257. SUSPICIOUS
258. SYMPATHETIC
259. TACTFUL
260. TACTLESS
261. TALKATIVE
262. TEMPERAMENTAL
263. TENSE
264. THANKLESS
265. THOROUGH
266. THOUGHTFUL
267. THRIFTY
268. TIMID
269. TOLERANT
270. TOUCHY
271. TOUGH
272. TRUSTING
273. UNAFFECTED
274. UNAMBITIOUS
275. UNASSUMING
276. UNCONVENTIONAL
277. UNDEPENDABLE
278. UNDERSTANDING
279. UNEMOTIONAL
280. UNEXCITABLE
281. UNFRIENDLY
282. UNINHIBITED
283. UNINTELLIGENT
284. UNKIND
285. UNREALISTIC
286. UNSCRUPULOUS
287. UNSELFISH
288. UNSTABLE
289. VINDICTIVE
290. VERSATILE
291. WARM
292. WARY
293. WEAK
294. WHINY
295. WHOLESOME
296. WISE
297. WITHDRAWN
298. WITTY
299. WORRYING
300. ZANY

·ndix B--ACL Scales

1. **Defensiveness**. To protect oneself from shame, anxiety, or loss of self-esteem.

2. **Number of favorable adjectives checked**. The favorability of items affects the description of self and others in personality testing. Socially desirable (i.e., favorable) items tend to be more attractive to check. Seventy-five items of the ACL make up this scale.

3. **Number of unfavorable adjectives checked**. An additional 75 items constitute the Unfavorable scale. This scale is not merely the mirror of the Favorable scale as they correlate -.68 (and not -1.00).

4. **Self-Confidence**. Measures initiation, and confidence in ability to achieve goals. Also provides and indication of shyness, inhibitions, and withdrawal.

5. **Self-Control**. Scores on this scale provide an indication of one's level of spontaneity, control, or over-control.

6. **Lability**. Open to change, adaptable.

7. **Personal Adjustment**. Provides an indication of attitude towards life (positive/negative), initiating structure, anxiety, and moodiness.

8. **Achievement**. This scale is defined: "To strive to be outstanding in pursuits of socially recognized significance."

9. **Dominance**. "To seek and maintain a role as leader in groups, or to be influential and controlling in individual relationships."

10. **Endurance**. "To persist in any task undertaken."

11. **Order**. "To place special emphasis on neatness, organization, and planning in one's activities."

12. **Intraception**. "To engage in attempts to understand one's own behavior or the behavior of others."

13. **Nurturance**. "To engage in behaviors that provide material or emotional benefits to others."

14. **Affiliation**. "To seek and maintain numerous personal friendships."

15. **Heterosexuality**. "To seek the company of and derive emotional satisfaction from interactions with opposite-sex peers."

16. **Exhibition**. "To behave in such a way as to elicit the immediate attention of others."

17. **Autonomy**. "To act independently of others or of social values and expectations."

18. **Aggression**. "To engage in behaviors that attack or hurt others."

19. **Change**. "To seek novelty of experience and avoid routine."

20. **Succorance**. "To solicit sympathy, affection, or emotional support from others."

21. **Abasement**. "To express feelings of inferiority through self-criticism, guilt, or social impotence."

22. **Deference**. "To seek and maintain subordinate roles in relationships with others."

23. **Counseling Readiness Scale**. This scale is used to identify individuals who are open to change, and may benefit from counseling.

24. **Creativity Scale**. Expressiveness, conservatism, cleverness, and cognitive ability are measured.

25. **Total number of adjectives checked**. The total number of adjectives checked provide bounds within which valid measures of the other scales lie. Checking too few items (i.e., less than 20) or too many items (i.e., greater than 250) indicates to the administrator that the entire inventory probably is invalid, and should be interpreted with caution.

Note. From Gough and Heilbrun (1983).

ndix C--MSQ Iter

	Style
1. I believe that once goals have been set, each person should have enough motivation to achieve them.	E
OR	
I give subordinates responsibility, but take it back if performance is not forthcoming.	E
2. I tell subordinates to concentrate on self-improvement and not worry about others' performance.	F
OR	
I feel that close supervision is not necessary in a situation where subordinates have participated in discussions of job-related issues.	D
3. I have high standards of performance and have little sympathy for those whose performance falls short.	E
OR	
When a subordinates' work plan is inappropriate, I suggest rethinking the matter and coming up with another plan.	F
4. I believe that subordinates' rights and feelings are more important than the immediate job at hand.	C
OR	
I reward good work and feel that punishment for poor performance has limited use.	D
5. I suggest alternative ways of doing things rather than indicating how I would do it.	F
OR	
I think subordinates should be able to find solutions to job difficulties on their own.	E
6. When subordinates suggest alternatives to me, I am not long in indicating the alternative I prefer.	B
OR	
when a subordinate disagrees with me, I take care to explain why I want something done in a certain way.	B
7. I think that disciplining employees does more harm than good.	C
OR	
I believe developing close personal relationships with subordinates is the mark of a good manager.	C
8. I reward good work and feel that punishment for poor performance has limited use.	D
OR	
When subordinates fail to perform, I calmly but firmly let them know why they failed.	B

9. I expect my subordinates to carry out plans I have prepared. A
OR
I think subordinates should be able to find solutions to job difficulties on their own. E

10. When I make a decision, I try to persuade my subordinates to accept it. B
OR
I feel that work plans should represent the ideas of my subordinates. D

11. I feel that people develop best when given the opportunity to participate. D
OR
I believe that once the goals have been set, each person should have enough motivation to achieve them. E

12. When I discipline a subordinate, I let the individual know exactly what has been done wrong. A
OR
I feel that close supervision is not necessary in a situation where subordinates have participated in discussions of job-related issues. D

13. I believe that firm discipline is important to get the job done. A
OR
I insist subordinates submit detailed reports of their activities. A

14. I believe that a popular leader is better than an unpopular one. C
OR
I believe that subordinates should be able to overcome obstacles by themselves and not be discouraged by setbacks. E

15. I believe that it is a manager's job to motivate subordinates by providing performance feedback. F
OR
I am concerned with high standards of performance and encourage subordinates to reach these standards. F

16. I encourage subordinates to act as advisors to one another when they need help. D
OR
I feel that people develop best when given the opportunity to participate. D

17. When a subordinate's plan is inappropriate, I suggest rethinking the matter and coming up with another plan. F
OR
I often give orders in the form of a suggestion, but make it clear what I want. B

18. I believe that job security and fringe benefits are important for employee happiness. C
OR
When a subordinate's work plan is inappropriate, I suggest rethinking the matter and coming up with another plan. F

19. In the long run, I will fire or transfer a person I consider to be unmanageable.	A
OR	
I discourage arguments which lead to conflicts among my subordinates.	C
20. I feel that close supervision is not necessary in a situation where subordinates have participated in discussions of job-related issues.	D
OR	
I expect my subordinates to carry out plans I have prepared.	A
21. I am more concerned with getting subordinates to follow my example than with establishing close personal relationships.	E
OR	
I believe that subordinates' rights and feelings are more important than the immediate job at hand.	C
22. I focus on improvement in subordinate performance, rather than insisting on a given level of performance.	F
OR	
I discourage arguments which lead to conflicts among my subordinates.	C
23. I believe that subordinates should be able to overcome obstacles by themselves and not be discouraged by setbacks.	E
OR	
When I make a decision, I try to persuade my subordinates to accept it.	B
24. When a subordinate disagrees with me, I take care to explain why I want something done in a certain way.	B
OR	
I think that disciplining employees does more harm than good.	C
25. I am concerned with high standards of performance and encourage subordinates to reach these standards.	F
OR	
I believe that firm discipline is important to get the job done.	A
26. I discourage arguments which lead to conflicts among my subordinates.	C
OR	
I expect my subordinates to follow my instructions closely.	A
27. I believe developing close personal relationships with subordinates is the mark of a good manager.	C
OR	
When subordinates suggest alternatives to me, I am not long in indicating the alternative I prefer.	B
28. When subordinates fail to perform, I calmly but firmly let them know why they failed.	B
OR	
I am more concerned with getting subordinates to follow my example than with establishing close personal relationships.	E

29. I expect my subordinates to follow my instructions closely.	A
OR	
I often give orders in the form of a suggestion, but make it clear what I want.	B
30. I give subordinates responsibility, but take it back if performance is not forthcoming.	E
OR	
I encourage subordinates to act as advisors to one another when they need help.	D
31. I think subordinates should be able to find solution to job difficulties on their own.	E
OR	
When I discipline a subordinate, I let the individual know exactly what has been done wrong.	A
32. I tend to rely on group consensus rather than direct supervision or control.	D
OR	
I suggest alternative ways of doing things rather than indicating how I would do it.	F
33. I try to reduce resistance to my decisions by indicating what subordinates have to gain.	B
OR	
I focus on improvement in subordinate performance, rather than insisting on a given level of performance.	F
34. I often give orders in the form of a suggestion, but make it clear what I want.	B
OR	
In the long run, I will fire or transfer a person I consider to be unmanageable.	A
35. I insist subordinates submit detailed reports on their activities.	A
OR	
I am concerned with high standards of performance and encourage subordinates to reach these standards.	F
36. I feel that work plans should represent the ideas of my subordinates.	D
OR	
I believe that a popular leader is better than an unpopular one.	C

Note. From McBer and Company, 1980b.

Appendix D--PDI Model of Management Perfor

Managerial Performance and Effectiveness	
Factors	Dimensions
Interpersonal Skills	Human Relations Skills Public Relations Skills Managing Conflict & Confrontation
Communication Skills	Informing Oral Communications Listening Written Communications
Personal Adaptation	Self-acceptance & Self-confidence Flexibility & Adaptability Balance of Independence/Dependence Coping with Stress
Motivation & Commitment	Accomplishment Drive Initiative & Urgency Persistence & Stamina Organizational Commitment Professional & Managerial Commitment
Occupational/Technical Knowledge	Industry Practices Organizational Practices Functional Area Knowledge Job Knowledge
Cognitive Skills	Innovation & Resourcefulness Financial & Quantitative Skills Problem Analysis & Decision Making Mental Ability & Perceptiveness
Administrative Skills	Handling Detail Personal Organization & Time Management Organizing Planning
Leadership Skills	Staffing, Coaching, & Developing People Delegating & Controlling Group Skills Motivating Others Leadership Styles & Influence

Note. From Silzer, 1986.

endix E--Performance Appraisal Fo

Instructions:

Use the following rating scale to evaluate the above named manager's performance.

7 = Compared to other managers, performance is excellent and serves as a model for others.

6 = Compared to other managers, performance is very good and well above average.

5 = Compared to other managers, performance is somewhat better than average.

4 = Compared to other managers, performance is average and acceptable.

3 = Compared to other managers, performance is slightly below average.

2 = Compared to other managers, performance is considerably below average with much room for improvement.

1 = Compared to other managers, performance is well below average and not satisfactory.

Interpersonal Skills

Interpersonal Skills include: Human Relations Skills, Public Relations Skills, and Managing Conflict & Confrontation.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

Communication Skills

Communication Skills include: Informing, Oral Communications, Listening, and Written Communications.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

Personal Adaptation

Personal Adaptation includes: Self-acceptance & Self-confidence, Flexibility & Adaptability, Balance of Independence/Dependence, and Coping with Stress.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

Motivation and Commitment

Motivation and Commitment include: Accomplishment Drive, Initiative & Urgency, Persistence & Stamina, Organizational Commitment, and Professional & Managerial Commitment.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

---

7 = Compared to other managers, performance is excellent and serves as a model for others.

6 = Compared to other managers, performance is very good and well above average.

5 = Compared to other managers, performance is somewhat better than average.

4 = Compared to other managers, performance is average and acceptable.

3 = Compared to other managers, performance is slightly below average.

2 = Compared to other managers, performance is considerably below average with much room for improvement.

1 = Compared to other managers, performance is well below average and not satisfactory.

Occupational/Technical Knowledge

Occupational/Technical Knowledge includes: Job Knowledge, Functional Area Knowledge, Knowledge of Organizational Practices, and Knowledge of Industry Practices.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

Cognitive Skills

Cognitive Skills include: Mental Ability & Perceptiveness, Problem Analysis & Decision Making, Financial & Qualitative Skills, and Innovation & Resourcefulness.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

Administrative Skills

Administrative Skills include: Planning, Organizing, Personal Organization & Time Management, and Handling Detail.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

Leadership Skills

Leadership Skills include: Leadership Style & Influence; Motivating Others; Group Skills; Delegating & Controlling; and Staffing, Coaching, & Developing People.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

Overall Management Performance and Effectiveness

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

·ndix F--Subject Questionnaire Packet

Name,

Hello! My name is Patrick R. Powaser, and I am a graduate student at Iowa State University. Your company has agreed to participate in a research project that I am working on in order to fulfill the requirements for a Master's degree in Industrial Psychology.

The project is investigating the usefulness of two assessments for predicting management performance and effectiveness. You have already completed these measures during your time with the psychologists at Humber, Mundie, & McClary in Milwaukee. In order to complete my research, I now need some information on your performance as a manager. All data that I collect will be for research purposes only. Neither you nor your company will be identified in the final report of this research. I do, however, need your name for the time being as I need to be able to match the test data with your performance data.

I would ask you to take just a few minutes now and complete the following two pages of information. Your supervisor will complete the rest. The next page is a consent form that the University requires. Please read and sign it. The page after that contains a number of questions asking for some basic background information. It is important that you indicate a response for each item.

Please leave the entire packet stapled together, and then forward it to your supervisor after you have completed the next two pages.

Thank you for your cooperation.

Name: Company:

Consent Form

Your participation in this research is completely voluntary. Your test scores and performance appraisal information will be used for research purposes only. Neither you nor your organization will be identified by name in the completed report of the study.

You may, at any time, request that your scores be removed from analysis. This will be possible until all data have been collected (approximately April, 1990). Upon completion of data collection, all individual subject names will be removed from the data base. Names will be used ONLY to match predictor (i.e., test) and criteria (i.e., performance) data.

The data gathered in this study will be used to determine the effectiveness of two predictors of management performance (the Adjective Check List and the Managerial Style Questionnaire). These are instruments for which I already have data. In order to complete the research, I need data on your performance as a manager. To gather this information, I need your supervisor to complete the attached form.

Again, all data is for research purposes only.

Please read the following statement, and then sign and date as indicated:

I agree to participate in this study. I understand that all information gathered from me and my supervisor is both confidential and for research purposes only. Further, I understand that I can request that my data be removed from the study at any time.

I give my supervisor permission to complete the attached appraisal form to provide information on my performance.

Signed:_____ Date:_____

After you have signed the form, please forward the entire packet to your supervisor.

Thank you for your assistance.

Any questions or concerns should be addressed to:

Patrick R. Powaser
Department of Psychology
W117 Lagomarcino
Iowa State University
Ames, Iowa 50011
515 294-1744

Please provide the following information:

Your current yearly income range:

1. Under $20,000
2. $20,000 - $30,000
3. $30,000 - $40,000
4. $40,000 - $50,000
5. $50,000 - $60,000
6. $60,000 - $70,000
7. $70,000 - $80,000
8. $80,000 - $90,000
9. $90,000 - $100,000
10. $100,000 or above

Number of months since last promotion: _____ months.

Number of months since last pay raise: _____ months.

Number of subordinates that you supervise: _____ subordina

Total time with the company: _____ years & ____ months.

Age range:

1. Under 25
2. 25 - 35
3. 35 - 40
4. 40 - 45
5. 45 - 50
6. 50 - 55
7. 55 - 60
8. 60 - 65
9. 65 or over

Sex: ___ Male ___ Female

Race:

1. American Indian
2. Black
3. Hispanic
4. White
5. Other

Your current job title: _____

Your participation in this research is crucial. This research cannot be completed without the data that you are asked to provide.

In the event that more than one of your subordinates is participating in this research, you may be asked to complete a number of evaluations for this research. Please do fill each out completely. I have tried to keep the forms as short and as simple as possible so they do not take too much of your time. Again, it is very important to fill out each form completely.

First, please provide the following information about yourself:

Age range:
1. Under 25
2. 25 - 35
3. 35 - 40
4. 40 - 45
5. 45 - 50
6. 50 - 55
7. 55 - 60
8. 60 - 65
9. 65 or over

Sex: ___ Male ___ Female

Race:
1. American Indian
2. Black
3. Hispanic
4. White
5. Other

Your current job title: _____

Please take a few minutes now to complete the nine item performance appraisal form on the next two pages for the person named above.

After you have completed the this page and the next, please place the entire packet in the attached envelope and mail it back to me. The envelope is already stamped and addressed for your convenience.

PLEASE RETURN THIS PACKET BY: JANUARY 31, 1990

Thank you for your help and time.

Instructions:

Use the following rating scale to evaluate the above named manager's performance.

7 = Compared to other managers, performance is excellent and serves as a model for others.

6 = Compared to other managers, performance is very good and well above average.

5 = Compared to other managers, performance is somewhat better than average.

4 = Compared to other managers, performance is average and acceptable.

3 = Compared to other managers, performance is slightly below average.

2 = Compared to other managers, performance is considerably below average with much room for improvement.

1 = Compared to other managers, performance is well below average and not satisfactory.

Interpersonal Skills

Interpersonal Skills include: Human Relations Skills, Public Relations Skills, and Managing Conflict & Confrontation.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

Communication Skills

Communication Skills include: Informing, Oral Communications, Listening, and Written Communications.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

Personal Adaptation

Personal Adaptation includes: Self-acceptance & Self-confidence, Flexibility & Adaptability, Balance of Independence/Dependence, and Coping with Stress.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

Motivation and Commitment

Motivation and Commitment include: Accomplishment Drive, Initiative & Urgency, Persistence & Stamina, Organizational Commitment, and Professional & Managerial Commitment.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

Name:

---

7 = Compared to other managers, performance is excellent and serves as a model for others.

6 = Compared to other managers, performance is very good and well above average.

5 = Compared to other managers, performance is somewhat better than average.

4 = Compared to other managers, performance is average and acceptable.

3 = Compared to other managers, performance is slightly below average.

2 = Compared to other managers, performance is considerably below average with much room for improvement.

1 = Compared to other managers, performance is well below average and not satisfactory.

Occupational/Technical Knowledge

Occupational/Technical Knowledge includes: Job Knowledge, Functional Area Knowledge, Knowledge of Organizational Practices, and Knowledge of Industry Practices.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

Cognitive Skills

Cognitive Skills include: Mental Ability & Perceptiveness, Problem Analysis & Decision Making, Financial & Qualitative Skills, and Innovation & Resourcefulness.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

Administrative Skills

Administrative Skills include: Planning, Organizing, Personal Organization & Time Management, and Handling Detail.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

Leadership Skills

Leadership Skills include: Leadership Style & Influence; Motivating Others; Group Skills; Delegating & Controlling; and Staffing, Coaching, & Developing People.

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

Overall Management Performance and Effectiveness

Rating: 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___

ndix G--Correlation Matrice

13	14	15	16	17	18	19	20	21	22	23	24
--											
66	--										
31	39	--									
-21	03	37	--								
-56	-24	06	60	--							
-69	-42	01	55	73	--						
-12	04	30	50	47	32	--					
01	-26	-03	-18	-32	-10	-10	--				
36	00	-06	-54	-71	-60	-24	59	--			
55	27	-07	-62	-85	-75	-50	35	76	--		
-03	-11	-21	-26	-16	-09	-21	03	13	18	--	
-35	-16	-02	36	56	48	47	-19	-37	-54	-07	--

Correlations among six MSQ scales

	A	B	C	D	E
B	-05	--			
C	-32***	-05	--		
D	-52***	-30***	-02	--	
E	-26***	-21***	-32***	-01	--
F	02	-41***	-27***	-12**	-05

Note. Decimals omitted. ** $p < .01$. *** $p < .001$.
A=Coercive Style; B=Authoritative Style; C=Affiliative Style; D=Democratic Style; E=Pacesetting Style; F=Coaching Style.

Correlations among ten criterion scales

	C1	C2	C3	C4	C5	C6	C7	C8	C9
C2	59***	--							
C3	56***	51***	--						
C4	30***	49***	53***	--					
C5	24**	37***	37***	50***	--				
C6	41***	57***	51***	60***	65***	--			
C7	40***	53***	47***	54***	36***	49***	--		
C8	66***	59***	61***	52***	41***	52***	51***	--	
C9	61***	69***	71***	75***	55***	66***	67***	78***	--
C10	69***	77***	76***	77***	65***	79***	72***	81***	93***

Note. Decimals omitted. ** $p < .01$. *** $p < .001$.
C1 = Interpersonal Skills; C2 = Communication Skills; C3 = Personal Adaptation; C4 = Motivation and Commitment; C5 = Occupational/Technical Knowledge; C6 = Cognitive Skills; C7 = Administrative Skills; C8 = Leadership Skills; C9 = Overall Performance Rating; and C10 = Composite Performance Scale.

Appendix H--Factor Loadings and Eigenvalue

Factor loadings and eigenvalue for one criterion factor

	FACTOR
C1	.69782
C2	.78522
C3	.76700
C4	.75070
C5	.63982
C6	.79492
C7	.71747
C8	.81436
Eigenvalue	4.47459

Factor loadings and eigenvalues for three ACL factors

ACL Scale	FACTOR 1	FACTOR 2	FACTOR 3
DF	.58357	.23909	-.00752
FAV	.86859	.21702	.16116
UNFAV	-.79119	-.02864	.11625
SCFD	.17680	.84303	.25052
SCN	.59550	-.33340	-.49482
LAB	-.03127	.07577	.69592
PADJ	.82359	-.02295	-.11630
ACH	.34425	.81496	-.16566
DOM	.19016	.90820	.06584
END	.52579	.47930	-.57901
ORD	.39388	.33473	-.69423
INT	.71402	-.00051	-.08966
NUR	.80559	-.37562	.08212
AFF	.80277	.00552	.17785
HET	.33579	.01522	.62071
EXH	-.11288	.54582	.56918
AUT	-.44559	.67563	.35998
AGG	-.57581	.67281	.18063
CHA	-.06614	.24271	.73998
SUC	-.30554	-.56692	.08943
ABA	.10153	-.86407	-.08461
DEF	.36410	-.76610	-.34290
CRS	-.12240	-.13883	-.34096
CR	-.22662	.47133	.36180
Eigenvalues	7.12325	5.87740	2.74450

ɘndix I--ANOVA Summary Tables

ANOVA of Coercive Management Style by four performance/employment levels

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects (performance)	50.613	3	16.871	4.632	.004
Explained	50.613	3	16.871	4.632	.004
Residual	779.520	214	3.643		
Total	830.133	217	3.825		

ANOVA of Coercive Management Style by three performance levels

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects (performance)	29.484	2	14.742	3.874	.023
Explained	29.484	2	14.742	3.874	.023
Residual	445.183	117	3.805		
Total	474.667	119	3.989		

ANOVA of Affiliative Management Style by three levels of performance

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects (performance)	14.519	2	7.260	3.500	.033
Explained	14.519	2	7.260	3.500	.033
Residual	242.647	117	2.074		
Total	257.167	119	2.161		

ANOVA of Coercive Management Style by four performance/employment levels (performance measured by the criterion factor)

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects (performance)	53.385	3	17.795	4.908	.003
Explained	53.385	3	17.795	4.908	.003
Residual	764.968	211	3.625		
Total	818.353	214	3.824		

ANOVA of Coercive Management Style by three performance levels (measured by the criterion factor)

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects (performance)	33.899	2	16.949	4.487	.013
Explained	33.899	2	16.949	4.487	.013
Residual	430.631	114	3.777		
Total	464.530	116	4.005		

ANOVA of Affiliative Management Style by three levels of performance (measured by the criterion factor)

Source of Variation	Sum of Squares	DF	Mean Square	F	Signif of F
Main Effects (performance)	14.843	2	7.422	3.643	.029
Explained	14.843	2	7.422	3.643	.029
Residual	232.234	114	2.037		
Total	247.077	116	2.130		