INTELLECTUAL ABILITY, PERSONALITY, AND VOCATIONAL INTEREST AS PREDICTORS OF SUCCESSFUL JOB PERFORMANCE IN RESTAURANT MANAGERS

THESIS

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By

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The history and use of tests of intellectual ability, personality, and vocational interest is briefly discussed as background for an exploratory study in the use of these instruments in predicting successful restaurant manager performance. Most previous research regarding managerial potential has focused on perceptions of managerial ability rather than on performance issues. Sixty-eight restaurant managers were tested in order to assess general intellectual ability, personality traits, and vocational interests as predictors of performance criteria. Based on previous research, it was hypothesized that general intellectual ability, vocational match, masculinity, ascendance, and sociability would be positively correlated with effective job performance ratings. Results of the study did not confirm these predictions.
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CHAPTER I

INTRODUCTION

Restaurant management has become a major occupational field over the past several years. The independent restaurant owner and the privately owned restaurant are quickly being replaced by the restaurant chain, and managed by individuals selected by large organizations. Since the profitability of any restaurant within a chain is directly proportional to the quality of product and services provided by that establishment, selection of effective restaurant managers has become an increasing concern for those working within the field of personnel selection. Selection strategies typically used in the past include biographical information, the employment interview, and tests of mental ability and aptitude. While measures of specific abilities, aptitudes, and behavioral characteristics have been shown to be fairly good predictors of successful performance in many occupations, very little research has been devoted specifically to restaurant manager selection.

Ghiselli (1973) gathered hundreds of validation studies on all methods of predicting job performance. Each study yielded a correlation coefficient between the predictor and some measure of job performance. Ghiselli grouped these
studies by what he called "job families", and analyzed the variance of validity across these groups. He concluded that "tests are only valid on a sporadic basis, that validity varies from one setting to another because of subtle differences in job requirements that have not yet been discovered," and that "no predictor could be used for selection in any given setting without justifying its use with a validation study conducted in that exact setting" (Hunter & Hunter, 1984, p. 77).

The present study is an attempt to provide some empirical evidence for use of several selection instruments within the context of restaurant manager selection. Specifically, the tests investigated the relevance of general mental ability, personality measures, occupational interests, and interpersonal relations to restaurant manager performance.

General Intellectual Ability

General intellectual ability has been crowned by some theorists as the most important, if not the only, measurement necessary in order to predict successful job performance. Most research in this area is derived from selection-oriented correlational analysis. "The results of such research are interpreted as showing that a measure of g is sufficient in employee selection for nearly all occupations--that what will be called specialized abilities (e.g., numerical, spatial, sales, mechanical, leadership)
are of minor importance, at best. In effect, a measure of $g$
is said to be sufficient as a descriptor of work-relevant
abilities..." (Prediger, 1989, p. 2). In a special issue of
the *Journal of Vocational Behavior* (1986), Hunter reviewed
meta-analyses of hundreds of studies. His conclusion was
that general cognitive ability predicts job performance in
all jobs, whether the criteria be objective or subjective,
and that with very few exceptions, tailoring aptitude
composites to match the job does not improve prediction
above and beyond that of general cognitive ability alone.

Thorndike (1986), in this same issue, noted that:
In its beginnings, ability testing focused on
providing a measure of general cognitive
functioning--of something approximating Spearman’s
$g$. The Binet test in its various forms and
adaptations provided a single score that was
viewed as providing a general predictor of
academic competence and of ability to function
effectively in living and work. (Thorndike, 1986,
p. 332)

Thorndike further explained that focus later shifted to
multiple specific abilities, which were thought to provide
better prediction than was possible with a general measure
of cognitive ability. He did not propose that any single
test be used as a measure of general ability; that a good
measure of general ability would be one that samples widely
from a number of different tasks. However, he did believe that general ability, measured in this fashion, may provide the best predictor available with samples of the size that are typically encountered in personnel selection.

Hawk (1986) advocated measures of cognitive ability as being the most important, if not the only measures necessary in order to predict successful performance. He stated that Spearman's $g$ was "a very real phenomenon", and that measurement of specific aptitudes added little or nothing to the prediction of performance. He further contended that "$g$ predicts performance in a very wide range of (perhaps all) human activities" and that the "proper use of tests of $g$ can greatly improve the accuracy and value of personnel selection" (Hawk, 1986, p. 411).

Cronbach and Gleser (1965) reported that "The general ability test is virtually the only test whose coefficients consistently come within the range from .40 to .80, and this fact has made it the most universal of procedures for psychological assessment" (Cronbach & Gleser, 1965, p.140). In a comparative review of 185 reports of the validity of intelligence tests used to select employees in various occupations, Ghiselli and Brown (1948) reported a validity coefficient of .40 for supervisors.

Intelligence has generally been found to be correlated with "leader emergence." Stogdill (1948) reported positive correlations between intelligence and leader emergence in 23
out of 33 studies reviewed. Mann's (1959) review supported this relationship, though correlations were generally low.

Other researchers submit that the reason for the predictive validity of tests of general mental ability is the fact that all mental tests are correlated with one another to some extent. These theorists argue that "general mental ability" may not be as much a naturally occurring trait as an artifact of psychometrics.

In contrast, Jensen (1986) argued that general mental ability

is correlated with various phenomena that are wholly independent of both psychometrics and factor analysis, such as the heritability of test scores, familial correlations, the effects of inbreeding depression and of hybrid vigor, evoked electrical potentials of the brain, and reaction times to elementary cognitive tasks which have virtually no intellectual content. This evidence of biological correlates of \( g \) supports the theory that \( g \) is not a methodological artifact but is, indeed, a fact of nature. (p. 301)

There is evidence that while tests of general mental ability are the most pragmatic selection devices in some contexts due to economic and time constraints, greater overall utility may be achieved using a more "job-specific" or "situation specific" approach. Researchers supporting this hypothesis argue that each job requires special and
unique abilities, the assessment of which can account for more variance in job performance than can any single measure of "general mental ability." Assessment of "unique" abilities peculiar to particular jobs, however, is often not a cost-effective process, and results may not be easily generalized to predictions of effective performance in other jobs.

Variability across job task requirements and settings may make such selection strategies unfeasible for the traditional personnel researcher, since the generalization of results is often of considerable interest. In other words, a much greater return can be expected from development of selection strategies that can be used for a multitude of job categories than in expending a great deal of effort, time, and expense in perfecting a selection instrument for use with a small, unique, or situation-specific population.

An alternate point of view was taken by Gottfredson (1984). She reported a study that presented evidence that cognitive and non-cognitive demands of work are in fact related to the activities workers are expected to perform on the job. She collected a large amount of data from 274 U.S. Census groups, and conducted a principal components analysis.

According to her criteria, retention of 10 independent principal components (called factors)
was warranted. Together, these 10 factors accounted for 75% of the occupational group variance in job dimension and GATB scores. The first factor, which Gottfredson called 'general intelligence or intellectual difficulty' accounted for 26% of total variance. The other nine factors accounted for nearly twice as much variance (49%). Gottfredson's results show that the cognitive and non-cognitive abilities characterizing diverse occupations differ and that specialized abilities, taken together, are substantially more effective than g in differentiating occupations. (Prediger, 1989, p. 4)

**Personality Measures**

There is a paucity of literature regarding personality and interest variables as predictors of effective job performance. "Trait theories have not been seriously considered by leadership researchers since Mann (1959) and Stogdill (1948) reported that no traits consistently differentiated leaders from non-leaders across a variety of situations" (Lord, DeVader, & Alliger, 1986, p. 402). In addition, much of the early literature reported findings as being related to "leader performance," when in actuality, they referred to "leader emergence."

A study by Ghiselli (1963), however, reported five major traits displayed by effective managers. These were
The traits reported were:

1. Initiative—a willingness to try new things
2. Intelligence—high verbal and symbolic abilities
3. Perceived occupational level—seeing oneself as deserving of high status
4. Self-assurance—a favorable self-evaluation
5. Supervisory ability—ability to direct others’ activities.

Numerous reviews of the literature have failed to discover a single specific "leadership trait." Current research has all but abandoned this search in favor of an "interaction" model, which assumes that leadership is not a stable attribute which resides within the person, but rather an "adaptive" quality which allows some individuals to respond effectively as leaders in certain situations. While this thinking does imply the existence of some leadership qualities, these qualities would, in fact, be the potential for the emergence of leadership behaviors under certain conditions, as opposed to an inherent desire and ability to lead others in all situations.

Kenny and Zaccaro (1983) investigated the "trait theory" of leader emergence through use of a rotational model, i.e., they examined the stability of leadership across different situations by rotating persons across different tasks and situations. They found that while...
leadership was a stable characteristic, it was more a "potential" than a trait in the more traditional sense. Using a social relations model, they estimated the percent variance in leadership due to "trait" or "potential" as between 49% and 82%.

There is some evidence, however, that personality and interest variables could increase predictive validity when used in conjunction with measures of general intellectual ability. Baehr and Orban (1989) hypothesized that personality measures having "low loadings on g" would predict successful performance at least as well as cognitive measures and that

the best prediction of performance would be obtained from a combination of cognitive and personality measures. The results indicated that each set of predictors [general cognitive measures and personality measures] increased validity over and above what could be explained by the other and thus support the hypothesis that the best prediction is obtained from a combination of the measures. (Baehr & Orban, 1989, p. 270).

Rawls and Rawls (1974) reported a study in which 150 executives from a large Southern utilities company were rank ordered according to successful job performance. For the analysis, 30 "successful" and 30 "unsuccessful" executives were selected. They were administered two personality

Day and Silverman (1989) administered a cognitive ability test (Wesman Personnel Classification Test - Form B) and a personality inventory (Jackson Personality Research Form - Form E) to a group of accountants. Performance was rated on six dimensions. Their findings indicated that, even with the effects of cognitive ability taken into account, three personality scales (orientation towards work, degree of ascendency, and degree and quality of interpersonal orientation) were significantly related to important aspects of job performance.

A review of the relationships between personality and performance in small groups by Mann (1959) identified seven dimensions of ability which affected group performance. The dimensions were intelligence, adjustment, extraversion, dominance, interpersonal sensitivity, masculinity, and conservatism.

There has been a great deal of research effort over the past several years devoted to the analysis of Masculinity-
Femininity measures as being related to successful manager performance. Unfortunately, most of these studies have focused on these traits as being descriptive of good manager "perceptions" as opposed to good manager "performance."

Powell and Butterfield (1989) had subjects rate characteristics of a successful manager on the Short Bem Sex-Role Inventory. Successful managers were seen as more masculine (and less androgynous) than unsuccessful managers. However, as mentioned above, this researcher measured leadership perceptions, not leader performance. Brenner and Greenhaus (1979) demonstrated that some stereotyped "masculine" behaviors were more predominant in managers as opposed to non-managers. In particular, managers were described as "more achievement-oriented, more dominant, and less nurturant" than non-managers. Results of the study indicated, however, that these perceptions were more related to the subject's managerial status than to his or her gender.

Baril, Elbert, Mahar-Potter, and Reavy (1989) used Spence's Personal Attributes Questionnaire to assess the sex-role orientation of 65 first-line supervisors from seven organizations. These sex-role orientations were correlated with supervisory ratings of job performance.

Contrary to the basic hypothesis and the theoretical literature, those who scored high on both masculinity and femininity (androgynous) and low on both (undifferentiated) were rated by their superiors as
least effective. The most effective supervisors were high on either masculinity or femininity but not both. (Baril, et.al., 1989, p. 234)

Rice and Lindecamp (1989) correlated success of 102 small retailers (using annual income as the criterion measure) with their Jungian personality types. For the total sample of small retailers, there was a significantly greater number of extroverts than introverts, a greater number of sensing than intuitive types, and a greater number of judging than perceiving types.

Ghiselli and Barthol (1953) conducted a survey of various professional journals and books from about 1919 to 1952 in an attempt to provide an overview of the validity of personality tests as a basis for employment selection in a variety of occupational categories. Their conclusion regarding personality inventories for the selection of general supervisors was that "there have apparently been few studies made on the efficacy of personality inventories for higher level supervisors. Contrary to expectations, the mean validity coefficient of only .14 is low and the distribution is somewhat scattered" (Ghiselli & Barthol, 1953, pp. 18-19).

Ghiselli (1973) later conducted another survey of personnel selection tests used from about 1920 to 1973. Tests in the survey included tests of intellectual abilities, tests of spatial and mechanical abilities, tests
of perceptual accuracy, tests of motor abilities, and personality tests. Validity coefficients were presented for a variety of occupational groups, including managerial occupations. He concluded that for the managerial occupations,

tests of intellectual abilities, spatial and mechanical abilities, and perceptual accuracy tend to be the best, and are of moderate validity... Measures of personality and interest also are of moderate value in predicting the level of proficiency executives and administrators attain on their jobs, but they are much less useful for foremen. (Ghiselli, 1973, pp. 467-468). Lord, Devader, and Alliger (1986) used the meta-analytic technique of validity generalization to re-analyze the data presented by Mann (1959) in his review of the literature on personality traits as related to leadership perceptions. Their findings supported the hypothesis that several characteristics (intelligence, masculinity-femininity, and dominance) were significantly correlated with leader emergence. They also showed that much of the variability across studies reviewed by Mann could be explained by methodological factors. These conclusions do not support the conclusions of the earlier analyses.

**Interest Inventories**

John Holland (1959, 1966, 1973) proposed a model by which a person's interests are assessed by means of
selection of the desirability of certain vocations. In essence, he used a personality inventory composed entirely of vocational titles to assess the subjects suitability and/or potential for success within certain occupations. "The level of a person's occupational achievement is encouraged by the congruence of his work environment" (Holland, 1973, p. 43). Congruence refers to the degree of fit between a person and his or her environment.

Congruity theorists argue, in brief, that the greater the degree of similarity between the person's vocational interests and the interests called for in the job, the more likely it is that there will be a successful match and that the person will perform the job well and stay with it.

In general terms, congruity theory is also the basis of personnel psychology, in which personal characteristics (usually abilities) are matched to job demands. (Lowman, 1991, p. 31)

Prediger (1982) did a study which applied a slightly varied theoretical framework to Holland's vocational preference model. Results "appear to provide substantial support for the [Holland's] theory-based dimensions." He went on to say "These results suggest why interest inventories based on the people-similarity rationale work" (Prediger, 1982, p. 282).
Advantages of Multiple Assessment Methods

The possibility of incremental validity as a function of combined intellectual, personality, and interest variables is of monumental importance for most organizations since higher selection validity translates directly into dollar savings. Hunter and Schmidt (1982) applied a utility model to the entire national work force. They estimated "in 1980 that productivity differences between complete use of cognitive ability tests and no use of the tests would amount to a minimum of $80 billion per year. That is, productivity differences due to use or nonuse of present tests would be, in the current state of the economy, about as great as total corporate profits, or about 20% of the total federal budget" (Hunter & Hunter, 1984, p. 72).

With regard to test fairness, the use of "intelligence testing" as a form of selection has been shown to adversely affect some ethnic groups.

Unfortunately, the use of cognitive ability tests presents a serious problem for American society; there are differences in the mean ability scores of different racial and ethnic groups that are large enough to affect selection outcomes. In particular, blacks score, on the average, about one standard deviation lower than whites, not only on tests of verbal ability, but on tests of numerical and spatial ability as well (e.g., see
U.S. Employment Service, 1970). Because fewer black applicants achieve high scores on cognitive ability tests, they are more likely to fall below selection cutoff scores than are white applicants. For example, if a test is used to select at a level equivalent to the top half of white applicants, it will select only the top 16% of the black applicants. This difference is adverse impact as defined by the courts. (Hunter & Hunter, 1984, p. 73)

Differential (or specific) aptitude theory assumes that measurement of specific aptitudes, if used as part of a selection process, can increase the validity of employment selection over and above the use of general mental ability measures alone. In other words, "this theory holds that optimal selection is attained by identifying and measuring the specific aptitudes that are used in job performance, not by selection based on general mental ability. The black-white difference is sometimes smaller for such aptitudes than for general mental ability" (Schmidt, 1988, p. 282).

Since cognitive ability tests are shown to be very effective predictors of performance, the most pragmatic solution appears to be the integration of mental abilities measures with other measures, such as personality and interest variables. Ghiselli (1966) reported that:
"For managerial occupations as a whole, measures of intellectual abilities would appear to give the best predictions of job proficiency, with a validity coefficient of the order of .25. Tests of perceptual accuracy and personality traits have lesser value, with validity coefficients slightly below .20" (Ghiselli, 1966, p. 34). A selection procedure by which multiple indices of ability are considered might reduce adverse impact potential. "Validity could be increased in some jobs by adding the appropriate second predictor and using it with the appropriate weight. If that second predictor has less adverse impact, then the composite selection strategy would have more validity and less adverse impact than the use of ability alone" (Hunter & Hunter, 1984, p. 95). Schmidt (1988) agrees that "by deliberately choosing aptitudes with smaller differences, it might be possible to reduce adverse impact" (Schmidt, 1988, p. 282).

The present study is an attempt to verify findings/trends reported in previous studies regarding general intellectual ability, personality variables and interaction styles, and vocational interest choices in predicting successful performance in restaurant managers. It was expected that there would be a positive correlation between the quantitative, linguistic, and total scores of the Thurstone Test of Mental Alertness and job performance (Brown, 1948; Cronbach & Gleser, 1965; Ghiselli & Brown,
According to Holland's and Prediger's predictions, the "Enterprising" personality type should be most predominant within this sample, and that the "ESC" profile (i.e., Enterprising, Social, and Conventional subscales rank ordered as the 3 highest scores on the test) would be the most predictive of successful job-match. (Holland, 1959, 1966, 1973; Prediger, 1982). A positive relationship between this personality type and job performance would lend theoretical impetus to Holland's model as a selection aid. Firo-B scores were expected to demonstrate a relationship the "expressed" and "wanted control" scales and performance, as these scales would appear to be correlates of the "Dominance" trait investigated by Rawls and Rawls (1979) and "Degree of Ascendancy" reported by Day and Silverman (1989). On the Guilford-Zimmerman instrument, past research indicates that there is a positive correlation between successful job performance and the "Ascendance," "Sociability," and "Masculinity" scales (Day & Silverman, 1989; Rawls & Rawls, 1974; Powell & Butterfield, 1989; Lord, DeVader & Alliger, 1986; Brenner & Greenhaus, 1979; Mann, 1959). No correlations were expected from the Differential Factors Opinion Survey.
Subjects

The subjects were 68 managers and assistant managers of a local restaurant chain (50 managers, 18 assistant managers). The sample was 86% male (n = 59) and 14% female (n = 9); the mean age of the subjects was 35.2 years. Only those subjects who had held their positions for at least 120 days were considered for data analysis.

The persons providing the ratings used as criterion measures in this study were district managers of the same restaurant chain. The mean age of the raters was 45.5 years. These district managers had supervised the subjects for an average of 33.9 months.

Procedure

A concurrent experimental design was used in which each subject’s scores on the following instruments were correlated with several measures of successful job performance:

Predictors

Thurstone Test of Mental Alertness (Thurstone & Thurstone, 1952). Although labeled a test of "mental alertness," this is actually a test of verbal and
mathematical abilities. The instrument consists of 126 items of four types, arranged spirally and in order of difficulty. The test takes approximately 15 minutes to administer, and yields three scores: (1) Linguistic--general measure of verbal abilities; (2) Quantitative--general measure of mathematical abilities; and (3) Total--measure of general intellectual ability. There is some evidence for its use as a selection device in business and industrial settings 'in the form of correlations with supervisors' ratings and mean score differences between groups of employees rated 'good' and 'poor'. The samples consist of 27 to 404 individuals in managerial, supervisory, sales, clerical, and bank-teller positions. Some of the correlations are impressive--ranging up to .63" (Buros, 1972, p. 716). Test-retest reliability is estimated at about .90.

Fundamental Interpersonal Relations Orientations Behavior (Schutz, 1977). All items on the instrument consist of single statement items to which subjects respond using a 6-point Guttman type scale. The test yields the following six subscale scores: (1) Expressed Inclusion--degree to which a person interacts with others; (2) Wanted Inclusion--degree to which a person wishes that others would interact with him or her; (3) Expressed Control--degree to which a person dominates others or assumes responsibility; (4) Wanted Control--degree to which a person wishes to
dominate others or assume responsibility; (5) Expressed Affection--degree to which a person becomes emotionally involved with others; and (6) Wanted Affection--degree to which a person wishes to become emotionally involved with others.

There is some evidence that the FIRO-B successfully differentiates between persons in "sociable" vs. "non-sociable" occupations. The user should bear in mind that content validity assumes acceptance of Schutz's particular domain of interpersonal behaviors/feelings. Test-retest reliabilities for subscales range from approximately .70 to .80.

Vocational Preference Inventory (Holland, 1953, 1965, 1977). This test has been described as a "personality-interest inventory composed entirely of occupational titles" (Conoley & Kramer, 1989, p. 881). Individuals indicate whether they like or dislike 160 occupations presented. The test yields 11 subscale scores: (1) Realistic--indicates preference for activities that entail manipulation of objects, machines, animals, etc. and an aversion to educational or social activities; (2) Intellectual--indicates preference for activities that entail observational, symbolic, and systematic investigation of physical, biological, and cultural phenomena; (3) Social--indicates preference for activities that entail the manipulation of others to inform, train, develop, cure or
enlighten; (4) Conventional--indicates preference for activities that entail the explicit, ordered, systematic manipulation of data to attain organizational or economic goals; (5) Enterprising--indicates a preference for activities that entail the manipulation of others to attain organizational goals or economic gain; (6) Artistic--indicates a preference for ambiguous, free, unsystematized activities that entail the manipulation of physical, verbal, or human materials to create art forms or products; (7) Self-Control--indicates a preference for activities that involve a great deal of caution and self-discipline; (8) Masculinity--indicates a preference for activities typically seen as being sex-typed; (9) Status--indicates a preference for activities commanding respect from others or being associated with a great deal of status; (10) Infrequency--indicates a preference for self-paced work and an aversion to time schedules or regularity of duties; and (11) Acquiescence--indicates a tendency to tacitly accept direction or information from others.

An individual's occupational type is indicated by his or her three highest rank-ordered scores (of the Realistic, Intellectual, Social, Conventional, Enterprising, and Artistic scales. The other scales are not used in determining "occupational profile"). The test assumes that "occupational preferences will provide information about a person's personality traits, values, competencies, and
coping behavior'" (Mitchell, 1985, p. 1683). There is little performance-based predictive validity research available for this instrument. Most validity studies have focused on the prediction of vocational choice. "Concerns about the validity and reliability of the instrument, as cited by reviewers in previous editions of The Mental Measurements Yearbook, have yet to be addressed" (Mitchell, 1985, p. 883). Test-retest reliabilities for subscales range from approximately .55 to .75.

Differential Factors Opinion Survey (Guilford & Zimmerman, 1954). The test consists of 300 statements to which the respondent answers "Yes," "?," or "No." The test yields 10 subscale scores. However, only 5 of the 10 subscales were scored for purposes of this study (the "Need for Attention", "Adventure vs. Security", "Aesthetic Appreciation", "Cultural Conformity" and "Need for Precision" scales were not scored due to the fact that some item content on these scales is outdated). Respondents were scored on the following subscales: (1) Liking for Thinking--related to problem-solving orientation or general inquisitiveness; (2) Self-reliance--related to how much a person likes to do things for himself or herself, (3) Need for Freedom--related to how much a person wants autonomy and freedom from rules/regulations; (4) Realistic Thinking--related to how much a person tends toward pragmatic and
practical type thinking; and (5) Need for Diversion--related to how much a person likes variety in his or her activities. Some of the scales show moderate correlations with various measures of job success. However, supportive research is scant.

The Guilford-Zimmerman Temperament Survey (Guilford & Zimmerman, 1976). This is a 300-item inventory which measures 10 broad personality characteristics. The subject responds "Yes," "No," or "?" to each of the 300 items. The subscales are: (1) General Activity--high energy vs slow pace; (2) Restraint--deliberate vs. impulsive; (3) Ascendance--leadership vs. habits of following; (4) Sociability--seeking vs. avoiding social contact; (5) Emotional Stability--evenness of mood vs. fluctuations of mood; (6) Objectivity--being "thick-skinned" vs. hypersensitive; (7) Friendliness--respect vs. contempt for others; (8) Thoughtfulness--reflectiveness, introversion; (9) Personal Relations--tolerance vs. criticalness of people; and (10) Masculinity--exhibiting characteristics typical of males as opposed to females.

Predictive utility [of the GZTS] is indicated by how well the test score leads to correct decisions about which people are likely to be successful in a particular occupation or situation... The many correlations between GZTS and a wide range of performance, then, indicate that this test can be
quite useful in making decisions about people.

(Mitchell, 1985, p. 640)

The GZTS includes scores for "GF" and "SF" scales, which may be indicators of the subject's attempt to give socially desirable responses or create a favorable impression through responses on the test.

Research dealing with the predictive validity of the GZTS in occupational settings is sparse. The test manual reports:

There have been many studies in which members of different occupational groups have been evaluated in terms of GZTS trait scores. Few of these are truly concerned with predictive validity in the sense that the GZTS was administered some time prior to the collection of criterion data. It is more often the case that concurrent validity is being investigated. In many cases there is less than adequate evidence regarding the reliability of the criteria. In some cases significant correlations are found between scales and criteria, but the GZTS scales constitute only a portion of the predictors and the significance of a few among many may be a chance phenomenon.

(Guilford, Guilford & Zimmerman, 1978, p. 12)
Criteria

Criterion measures were supervisory ratings. District managers who directly supervised the respondents rated each manager/assistant manager on fifteen work-related behaviors using a Likert-type rating scale. In addition, each manager/assistant manager was assigned an overall rating.

"Work-related behaviors" consisted of information processing skills, energy level perceptions, leadership ability perceptions, social interaction behaviors, and ability to perform effectively under pressure (see Appendix A). However, only "overall rating" was used in data analysis due to lack of confidence in the content validity of the "work-related behaviors." Ratings on work-related behaviors and overall ratings were intercorrelated.

Correlations between all subscales on the Thurstone, Firo-B, Differential Factors Opinion Survey, and Guilford-Zimmerman Temperament Survey were computed using Pearson's correlation coefficient. Since the Vocational Preference Inventory was scored in a dichotomous fashion (i.e., "match" or "no match" with the appropriate Holland personality type), correlations of individual VPI subscale scores with the other test subscale scores were not reported.

Correlations between overall performance ratings, work-related behavior ratings, and all subscale scores except the VPI were computed using Pearson's correlation coefficient. One-tailed tests were used for variables hypothesized to be
correlated with performance, based on previous research (cited earlier). For all other predictors (scores for which there was no expected correlation), two-tailed tests were used.

As a check for the possible moderating effects of demographic variables, sex (male vs female) and managerial status (manager vs. assistant manager) were correlated with overall performance rating using a point-biserial correlation since both sex and managerial status were dichotomous variables.

Correlations between performance ratings and the dichotomous Vocational Preference Inventory measure were also computed using the point-biserial correlation. All statistical procedures were executed on Statistical Package for the Social Sciences software.
Means and standard deviations for all subscale scores are presented in Table 1. Means and standard deviations for criterion measures are presented in Table 2. Intercorrelations among all subscale scores for the FIRO-B, Differential Factors Opinion Survey, Guilford-Zimmerman Temperament Survey, and Thurstone Test of Mental Alertness are presented in Table 3. Intercorrelations among all criterion measures (overall rating and 15 "work-related behavior" criteria) are reported in Table 4.

Intercorrelations among the 15 "work-related behaviors" ranged from -.11 to .77. However, the highest correlation between any "work-related behavior" and overall rating was $r = .62$. The criterion measures most highly correlated with overall rating were items related to rapid learning and assertiveness, e.g., "Learns new skills quickly" ($r = .58$), "Understands instructions the first time" ($r = .62$), "Assertively gives directions to subordinates" ($r = .53$), and "Disciplines subordinates who do not follow rules" ($r = .55$).

Pearson product-moment correlations were calculated between each subscale score for each test and overall performance rating. These correlations are presented in Table 5.
Table 1

**Means and Standard Deviations for Predictor Variables**

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Note. Abbreviations used for predictor variables (test subscales):
FEI - FIRO-B, "Expressed Inclusion" scale.
FWI - FIRO-B, " Wanted Inclusion" scale.
FEC - FIRO-B, "Expressed Control" scale.

(table continues)
FWC - FIRO-B, "Wanted Control" scale.
FEA - FIRO-B, "Expressed Affection" scale.
FWA - FIRO-B, "Wanted Affection" scale.

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(table continues)
VENT - Vocational Preference Inventory, "Enterprising" scale.

VART - Vocational Preference Inventory, "Artistic" scale.

VSCO - Vocational Preference Inventory, "Self-Control" scale.

VMAS - Vocational Preference Inventory, "Masculinity" scale.

VSTA - Vocational Preference Inventory, "Status" scale.

VINF - Vocational Preference Inventory, "Infrequency" scale.

VACQ - Vocational Preference Inventory, "Acquiescence" scale.
### Table 2

**Means and Standard Deviations for Criterion Measures**

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**Note.** Abbreviations used for criterion measures correspond to the items on the supervisory rating form (See Appendix A), e.g., "R1"=Item #1, "R2"=Item #2, "R3"=Item #3, etc.
"OVERALL RATING" denotes overall subjective performance rating by the subjects' immediate supervisor and was not derived from consideration or summation of the ratings on the 15 "work-related behaviors" listed below due to lack of confidence in these measures. Below are the criterion measures ("work-related behaviors") listed on the rating form:

R1 - "Learns new skills quickly".
R2 - "Understands instructions the first time".
R3 - "Works through numerical information quickly".
R4 - "Quick-paced during rush hours".
R5 - "Maintains high energy level over long shifts".
R6 - "Makes decisions promptly and without hesitating".
R7 - "Assertively gives directions to subordinates".
R8 - "Disciplines subordinates who do not follow rules".
R9 - "Speaks out and makes opinions known".
R10 - "Keeps a consistent mood throughout the work shift".
R11 - "Rebounds quickly from frustration".
R12 - "Maintains composure under pressure".
R13 - "Acts comfortable and natural around people".
R14 - "Makes the first move to start conversations with people".
R15 - "Spends time talking to customers, co-workers and subordinates".

OVERALL RATING - Overall subjective rating by subjects' immediate supervisor.
Note. Abbreviations used for predictor variables (test subscales):
FEI - FIRO-B, "Expressed Inclusion" scale.
FWI - FIRO-B, "Wanted Inclusion" scale.
FEC - FIRO-B, "Expressed Control" scale.
FWC - FIRO-B, "Wanted Control" scale.
FEA - FIRO-B, "Expressed Affection" scale.
FWA - FIRO-B, "Wanted Affection" scale.
GZF - Guilford-Zimmerman Temperament Survey, "Friendliness" scale.
GZM - Guilford-Zimmerman Temperament Survey, "Masculinity scale".
GZSF - Guilford-Zimmerman Temperament Survey, "Falsification" scale (Subtle).
GZGF - Guilford-Zimmerman Temperament Survey, "Falsification" scale (Gross).
THL - Thurstone Test of Mental Alertness, "Linguistic" scale.
THQ - Thurstone Test of Mental Alertness, "Quantitative" scale.
THT - Thurstone Test of Mental Alertness, "Total" score.
Table 3

Intercorrelations of all subscales on the FIRO-B, Differential Factors Opinion Survey, Guilford-Zimmerman Temperament Survey, and Thurstone Test of Mental Alertness

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*a = .05; b = .01.
Table 4

Intercorrelations between Criterion Measures

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Note. Abbreviations used for criterion measures correspond the items on the supervisory rating form (See Appendix A), e.g., "R1"=Item #1, "R2"=Item #2, "R3"=Item #3, etc. "OR" denotes overall subjective
performance rating and was not derived from consideration or summation of the ratings on the 15 "work-related behaviors" listed below due to lack of confidence in these items. Below are the "criterion" measures ("work-related behaviors") listed on the rating form:

R1 - "Learns new skills quickly".
R2 - "Understands instructions the first time".
R3 - "Works through numerical information quickly".
R4 - "Quick-paced during rush hours".
R5 - "Maintains high energy level over long shifts".
R6 - "Makes decisions promptly and without hesitating".
R7 - "Assertively gives directions to subordinates".
R8 - "Disciplines subordinates who do not follow rules".
R9 - "Speaks out and makes opinions known".
R10 - "Keeps a consistent mood throughout the work shift".
R11 - "Rebounds quickly from frustration".
R12 - "Maintains composure under pressure".
R13 - "Acts comfortable and natural around people".
R14 - "Makes the first move to start conversations with people".
R15 - "Spends time talking to customers, co-workers and subordinates".
OR - Overall subjective rating by subjects' immediate supervisor.

*p < .05; **p < .01
Table 5

Correlations between Predictor Variables and Criterion Measure

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Note. Abbreviations used for predictor variables (test subscales):

FEI - FIRO-B, "Expressed Inclusion" scale.
FWI - FIRO-B, "Wanted Inclusion" scale.
FEC - FIRO-B, "Expressed Control" scale.
FWC - FIRO-B, "Wanted Control" scale.
FEA - FIRO-B, "Expressed Affection" scale.
In addition, Pearson product-moment correlations were calculated for each of the 15 "work-related behavior" criterion measures and each subscale score of each test. These are reported in Appendix B. There were several
significant correlations \((p < .01)\) between subscale scores and "work-related behaviors." The test subscales having significant correlations with these criterion measures ("work-related behaviors") were, with only two exceptions, the same subscales found to have significant correlations \((p < .01)\) with overall rating.

A point-biserial correlation was used for comparison of overall rating and "match/no match" on the Vocational Preference Inventory. Since only one (1) of the subjects displayed the "ESC" profile, said by Holland to be indicative of preference/success as a "Restaurant Manager" (Holland, 1973, p.116), caution should be used when judging the utility of this single observation. While this correlation was positive and in the predicted direction, it was not significant at the \(p < .05\) level. The test was repeated using only "Enterprising personality" as a predictor ("Enterprising" personality is defined as a person whose "Enterprising" subscale score is the highest of the six subscale scores, without regard to the magnitude of the five lowest subscale scores). No significant relationships were found.

Five subscale scores were found to be significantly correlated with overall performance rating at the \(p < .01\) level using Pearson's correlation coefficient. These were: (1) Fundamental Interpersonal Relations Orientations--Behavior, "Wanted Inclusion" subscale, \(r = -.35\) \((p < .01)\);
(2) Differential Factors Opinion Survey, "Self-Reliance" subscale, \( r = 0.32 \) (\( p < 0.01 \)); (3) Differential Factors Opinion Survey, "Realistic Thinking" subscale, \( r = 0.30 \) (\( p < 0.01 \)); (4) Guilford-Zimmerman Temperament Survey, "Friendliness" subscale, \( r = 0.34 \) (\( p < 0.01 \)); and (5) Guilford-Zimmerman Temperament Survey, "GF" (Falsification) scale, \( r = 0.35 \) (\( p < 0.01 \)). Due to small sample size, only variables significant at the \( p < 0.01 \) level were considered to have sufficient criterion-related validity to warrant examination as possible predictor variables in future studies.

Multiple regression analyses were performed for the FIRO-B, Differential Factors Opinion Survey, Guilford-Zimmerman Temperament Survey, and Thurstone Test of Mental Alertness using weighted subscale scores of each test as predictors of overall performance rating. This procedure yielded the following multiple correlations:

FIRO-B ("Wanted Inclusion" subscale) - Pearson's \( r \) for this variable correlated with overall performance rating was \( r = 0.35 \) (\( p < 0.01 \)). Correlational analysis (Pearson's \( r \)) showed this to be the only subscale accounting for a significant amount of variance within the FIRO-B scores. When all FIRO-B subscales are included in the regression equation (forced entry), multiple regression was \( R = 0.38 \), which was not significant at the \( p < 0.05 \) level, and
accounted for little more variance than the "Wanted Inclusion" score alone.

Differential Factors Opinion Survey ("Self-Reliance" subscale and "Realistic Thinking" subscale) - A regression analysis using only "Self-Reliance" and "Realistic Thinking" yielded a multiple correlation of $R = 36$ ($p < .05$). Pearson's $r$ for these variables correlated with performance was $r = .32$ ($p < .01$) for "Self-Reliance" and $r = .30$ ($p < .01$) for "Realistic Thinking". The regression analysis was repeated adding all variables to the equation using stepwise entry. When all variables were included in the regression equation, the correlation was only slightly higher, $R = .40$ ($p < .05$). This suggests that most of the variance in the criterion measures was due to these two subscale scores, and enhanced very little by the addition of other subscale scores.

Guilford-Zimmerman Temperament Survey ("GF" subscale and "Friendliness" subscale) -- Pearson's $r$ for these two variables was $r = .35$ ($p < .01$) for the "GF" subscale and $r = .34$ ($p < .01$) for the "Friendliness" subscale. A multiple regression analysis was performed including only these two variables, yielding a correlation of $R = .40$ ($p < .05$), accounting for only slightly more variance than Pearson's $r$ for either of the measures alone. The regression analysis was repeated using stepwise entry of all GZ subscales. (As variables were added, increases in $R$ were fairly small,
e.g., adding the third variable, "Sociability", increased \( R \) to .44; the fourth, "General Activity", increased \( R \) to .50). These limited successive contributions to increased multiple correlation coupled with the fact that these variables (except for the "GF" and "Friendliness" scores) did not correlate with the criterion data, indicated that these variables had insufficient predictive capability to warrant further consideration as useful predictors in the present study. The multiple correlation for all GZTS scales together was \( R = .54 \), which was not significant at the \( p < .05 \) level. There were no significant correlations between the Thurstone "Linguistic", "Quantitative", or "Total" scores and overall performance rating.

Sex of subject had no moderating effect on the criterion variable. However, "assistant manager" status (as opposed to "manager") yielded a negative correlation (\( r = - .42 \)) with performance rating, which was significant at the \( p < .01 \) level.

Finally, a multiple regression analysis was performed which included only subscale scores from all tests which had significant Pearson's \( r \) correlations with the criterion variable (overall rating). (FIRO-B "Wanted Inclusion" scale, Differential Factors Opinion Survey "Self-Reliance" and "Realistic Thinking" scales, Guilford-Zimmerman "Friendliness" and "GF/Falsification" scales. This analysis yielded a multiple correlation of \( R = .50 \) (\( p < .01 \)).
CHAPTER IV

DISCUSSION

As can be seen from Table 5, correlations between "general mental ability", as measured by the Thurstone Test of Mental Alertness, and performance were very low. There are several factors that could contribute to this lack of correlation. Restriction of range is often a problem in concurrent studies of performance at higher organizational levels since it might be expected that persons with greater "general mental ability" are more likely to have been promoted to or hired into higher level positions. There is also a possible restriction of range problem within the criterion measure; however, it should be noted that it did correlate with some of the test scores. The rating instrument itself was an untested and unproven measurement device. In addition, those issuing the ratings were district managers who cover several restaurants and are not in a position to spend a great deal of time observing the work behaviors of any particular manager/assistant manager for a significant length of time. Therefore, it is suspected that responses might tend to cluster around "average." In the absence of much information by which to rate, "average" seems often to be the "default rating." The
correlation of overall rating with the Thurstone Linguistic score was near zero ($r = .08$). One additional consideration peculiar to this study is the fact that there is a possible natural suppression of English verbal skills inherent in the particular industry in which this study was conducted. The restaurant chain within which the study took place serves exclusively Mexican food. Within this context, it is very probable that being bilingual is considered a greater asset than great fluency in English. Thirty-seven per cent of the ratees had Hispanic surnames. However, no statistical analyses were performed on differences between subjects with and without Hispanic surnames since "surname" is not necessarily an indicator of fluency in either English or Spanish, nor bilingual ability.

Few if any conclusions can be reached regarding Holland's job-match theory. Holland (1959, 1966, 1973) and Prediger (1982) postulated that: 1) the "Enterprising" personality, defined by Holland as a person who receives his highest raw score on the VPI's Enterprising scale, would be better matched to the job of restaurant manager than other Holland personality types (persons receiving their top VPI scores on scales other than the "Enterprising" scale), and that 2) the "ESC" profile would be the best job-match and therefore would most likely possess the skills and abilities necessary to perform well as a restaurant manager. However, most research in the area of predictive validity has
centered around predicting what occupational fields people will tend to select as opposed to predicting their success in these fields. "The efficiency of these predictions is only moderate, ranging from 35 to 60 per cent accuracy" (Holland, 1978, p.22).

Small sample size and restriction of range on both predictor measures and criterion measures may contribute to failure to find significant relationships between Holland's personality variables and performance. Only one (1) of the subjects exhibited the "ESC" profile described by Holland as the best match for the "Restaurant Manager" occupation. This individual was rated "Outstanding", but there was no statistically significant correlation between this profile and performance rating using the point-biserial correlation. This lack of correlation was probably due to sample size.

The test was repeated using Holland's "Enterprising" personality as a predictor (defined as a subject whose highest VPI score was on the "Enterprising" subscale, without regard to scores on the other subscales). This procedure did not yield a significant correlation. In addition to the problems of restriction of range and small sample size, there are theoretical considerations that may help to account for this lack of correlation. Although Holland claims considerable success in predicting good "person-job" matches, he does not make a strong claim that a good job-match will necessarily yield good performance by
the person performing the job. Demonstrating that a person is well-matched to a job does little more than provide some evidence that the person's interests and abilities are similar to those needed to perform that job. It does not take motivation or ability into account. It could very well be that the person who is "matched" to his or her job would perform any job poorly, but performs the "matched" job better than he or she would perform other jobs. It might also be that a good "job-match" may refer more to the performer's job satisfaction than to an objective measure of job performance.

FIRO-B results did not yield the predicted correlation between performance and the "Expressed Control" and "Wanted Control" subscales. These correlations are small and negative (Expressed Control $r = -.08$, Wanted Control $r = -.12$). These results fail to support the findings of earlier studies (Day & Silverman, 1989; Mann, 1959; Rawls & Rawls, 1974). Possibly contributing to the discrepancy is the issue of content validity when comparing constructs such as "dominance," "aggression," "ascendancy," etc. to the FIRO-B "Wanted/Expressed Control" measures. Though these measures seem intuitively to be related to "control," there may be important differences in the domain of behaviors each scale is purporting to measure.

There was an unexpected negative correlation of $r = - .35$ ($p < .01$) between performance and the "Wanted Inclusion"
subscale score. This would seem to indicate that successful managers/assistant managers do not seek interaction with others. Such findings could indicate that the successful manager/assistant manager is saturated with interaction while performing his or her job duties and therefore does not seek interaction beyond what is normally encountered on the job. According to the test manual, a low "Wanted Inclusion" score indicates that "the person is selective about whom he or she chooses to associate with" (Ryan, 1989, p. 5). It is possible that there are socioeconomic factors involved with this score. The restaurant manager/assistant manager generally has a significantly greater income and greater "status" than those with which he or she associates every day. This, in combination with the fact that the manager is in a position of authority, and probably receives a greater-than-average amount of positive social interaction from peers, could account for some selectivity, but not for the fact that "successful" restaurant managers are significantly more selective than "non-successful" managers. Though the "Wanted Inclusion" correlation was not great, in light of the low correlations of any of the test subscales with performance, this finding was unexpected. Studies in which N is small, and in which there are a great number of predictor variables, may produce some significant correlations by chance. This correlation may be an artifact of experimental design.
Correlations predicted between the Guilford-Zimmerman "Ascendance" and "Sociability" scales and performance were not evidenced by the data analysis (Ascendance \( r = .08 \), Sociability \( r = -.05 \)). According to the test manual, "Leaders have rather high scores on A [Ascendence]--particularly leaders of the type generally associated with the 'Initiating Structure' or authoritarian type of leadership" (Guilford, Guilford & Zimmerman, 1978, p. 16). However, as was shown by the lack of correlation with performance on the FIRO-B "Expressed/Wanted Control" Scales, successful performers in this study do not seem to exhibit overly dominant, controlling, or assertive personality characteristics. In fact, most of the significant correlations presented here suggest that the "successful restaurant manager" exhibits very few of the attributes one would normally think of as necessary for effective performance in that position.

The "typical" successful manager profiled by results of this study appears to be more "Theory Y"-oriented than one would expect. He or she may be an effective "team-builder" as opposed to the domineering, serious-minded, authority figure. Results of the DFO "Self-Reliance" scale indicate that the successful manager likes doing things for himself or herself as opposed delegating or ordering things to be done. Lack of positive correlation with the Guilford-Zimmerman "Ascendence" scale suggests, according to the test
manual, that these successful performers are likely to be less assertive and/or controlling than the typical manager. This notion is also confirmed by the lack of correlation between performance rating and the FIRO-B "Wanted Control" and "Expressed Control" scales. This combination of independence and lack of "authoritarian" traits may indicate a tendency to "lead by example" rather than to issue directions or to manipulate others. Some of the other scale correlations suggest that the successful manager is friendly, yet not to the point that he or she seeks interaction with others. This is supported by the significant positive correlation with the GZ "Friendliness" scale, the absence of correlation with the GZ "Sociability" scale (related to "seeking out" social interaction), and the significant negative correlation with the FIRO-B "Wanted Inclusion" scale (which sometimes indicates a tendency to be very "selective about with whom one chooses to interact").

Despite the wealth of research supporting "general intellectual ability" as predictive of successful job performance, results of the present study imply that "common sense" (DFO "Realistic Thinking" scale) may be of more importance in restaurant management than high "intellectual ability" scores. Generally speaking, these results paint a picture of the successful restaurant manager as someone who is a rational thinker, is friendly when he or she interacts with others, but does not seek a great deal of interaction,
and in fact, may display fewer authoritarian "leadership" qualities than one would expect.

It was also predicted that there would be a positive correlation between successful performance and the Guilford-Zimmerman "Masculinity" subscale score. While there was a correlation of $r = .26$ ($p < .05$), this was somewhat lower than expected, especially since the sample was eighty-seven per cent male ($n = 59$). Since the standard deviation for the GZ "Masculinity" scale in this sample was slightly greater than the SD for the norm group, "gender biased" restriction of range was apparently minimal. However, the GZ "Masculinity" scale score usually "shows a very high discriminatory index for sex membership. Its point-biserial correlation for sex membership is estimated to be .75, based on a sample of 912, indicating the construct validity of the score" (Guilford, Guilford & Zimmerman, 1978, p.17). The correlation due to sex membership, paired with the expected correlation with performance would seem to have produced a higher correlation than $r = .26$. Contrary to expectation also was the fact that females in the study scored significantly higher on the GZ "Masculinity" scale than did males ($p < .01$). In fact, for the female subjects, correlation of successful performance and GZ "Masculinity" score was $r = .56$ (not significant at the $p < .05$ level). Unfortunately, few conclusions can be drawn from this data
due to the small number of females in the sample (males $n = 59$, females $n = 9$).

There was an unexpected positive correlation of $r = .34$ ($p < .01$) between successful performance and the GZ "Friendliness" scale. While there is research evidence that "Sociability" (defined as a desire to interact with others) is correlated with successful performance, "Friendliness" scores generally show no positive correlation with performance. In fact, the test manual reports in reference to this scale that "Supervisors and managers cannot afford to be too friendly" (Guilford, Guilford & Zimmerman, 1978, p.16).

The "GF" scale on the Guilford-Zimmerman instrument is a "Falsification" scale. It's correlation with successful performance was $r = .35$ ($p < .01$). Aside from the obvious fact that this correlation casts a certain suspicion upon the validity of the other GZ subscale scores, it empirically raises the question "Do people who lie and/or exaggerate tend to be more successful restaurant managers than those who do not?" It may be that something other than, or in addition to "falsification" is being measured by this scale.

The Differential Factors Opinion Survey, which was not predicted to yield any positive correlations with performance, produced correlations of $r = .32$ ($p < .01$) between overall performance and the "Self-reliance" scale.
score, and $r = .30$ (p < .01) between overall performance rating and the "Realistic Thinking" scale score.

The "Self-reliance" scale purports to measure the degree to which a person "likes to do things for himself or herself." Considering the fact that a great deal of the restaurant manager/assistant manager's job is the coordination and direction of the efforts of others in order to achieve objectives, this outcome was unexpected. However, one must bear in mind that there is not a great deal of documented research on the construct of "self-reliance."

The correlation between overall performance rating and the "Realistic Thinking" subscale score seems intuitively more sensible, "Realistic Thinking" being defined as a "tendency toward pragmatic and practical type thinking." From this description, one would get the impression that those scoring low on this scale would be more "irrational," "unrealistic", or "impractical" in their thinking--certainly not what we would normally expect as a prerequisite to effective restaurant management. There is a need for investigation of this and other "cognitive styles" in the prediction of managerial success.

In summary, only one of the original hypotheses was supported by a correlation in the predicted direction (the Guilford-Zimmerman "Masculinity" scale), and even this correlation appears to have very little predictive utility.
due to the low correlation ($r = .26, p < .05$) and the fact that there appears to be some interaction relationship between gender, performance, and "masculinity" that is, as yet, unclear. The Guilford-Zimmerman "Masculinity" scale is a unidirectional scale (i.e., it measures only the degree to which a person "behaves in ways characteristic of men"). There are bipolar scales available which allow scoring not only on "masculinity", but on "femininity" as well. The Vocational Preference Inventory includes such a bipolar masculinity-femininity scale. In this sample, correlation between performance and "masculinity" on the VPI was $r = -.20$. This relationship suggests that successful managers/assistant managers are not only "less masculine," but are actually "more feminine" than their unsuccessful counterparts. The VPI test manual states that "This scale measures a masculinity-femininity cluster of variables including choice of occupational roles, identification with males and females, conflicts about these identifications, and some personal traits usually associated with masculinity and femininity" (Holland, 1978, p. 12). The unidimensional GZ "Masculinity" score considered along with the bipolar VPI "Masculinity" score would imply that successful restaurant managers are more "masculine" than unsuccessful managers, but, in addition, that they exhibit more "feminine" characteristics than unsuccessful managers. Correlation between the Guilford-Zimmerman "Masculinity" score and the
The Vocational Preference Inventory "Masculinity" score was $r = .43$ ($p < .01$).

Several studies have treated "masculinity" and "femininity" as separate and unrelated trait clusters, i.e., that persons may score high on either "masculinity" or "femininity" scales, high on both, or low on both. Baril, et. al., 1989, classify subjects as belonging to one of four categories with regard to masculinity-femininity: (1) Masculine--persons scoring high on "masculinity" measures but low on "femininity" measures; (2) Feminine--persons scoring high on "femininity" measures but low on "masculinity" measures; (3) Androgenous--persons scoring high on both "masculinity" and "femininity" measures; and (4) Undifferentiated--persons scoring low on both "masculinity" and "femininity" measures. Their results indicated an interactive relationship between masculinity and femininity. Both male and female supervisors who scored high on either masculinity or femininity, but not both, were rated as more successful than the "androgy nous" or "undifferentiated" manager described above. Though these findings do not disagree with results of the present study, this study lends no support to their hypotheses since the only masculinity-femininity measures reported here utilize either a unidimensional "masculinity" scale (measuring only presence or absence of the trait) or a bipolar "masculinity-femininity" scale (measuring the two traits as if presence
of one precludes presence of the other). No scales were included in this collection of tests which allowed for the independent measurement of "masculinity" and "femininity" as unrelated and coexisting trait clusters.

Limitations

In general, this study failed to support many of the findings reported by previous researchers. This failure may be attributable in part to "less than ideal" experimental design. The sample size was fairly small, which automatically limits the probability of significant correlation and lends suspicion to any such findings.

Another weakness of the study was restriction of range in both predictor and criterion measures. As is the case with most concurrent research, subjects were not a "random sample of job applicants", but represented a grouping of people having some qualities or characteristics deemed desirable by those who hired them, valid or not. While true predictive studies are usually not feasible within organizational settings, the practice of conducting research only with those who have succeeded and proved themselves as "effective performers" has very little discriminatory power unless "less successful" performers are somehow involved to provide some basis for comparison. We can sometimes learn as much about job performance from a few that fail than we can from many who succeed, e.g., if we test only incumbents who have been with the organization a long time, have
performed well, are paid large salaries, and are respected by their peers and subordinates, to whom are we to compare them?

Problems in research design are often compounded by the fact that many organizations fail to appreciate the need for selection research. Too often they see such research as having no immediate positive consequence unless the organization is in trouble, at which time it is usually too late. Large databases of information collected prior to employment or soon thereafter would be invaluable to predictive research.

An additional research consideration is the need for more objective criterion data. Criterion data for this study was collected via an untested rating instrument. "Overall rating", which was the only measure used in data analysis, was assigned by district managers of the restaurant chain who probably were not only inexperienced raters, but also very likely had no instruction or knowledge of how to develop a uniform and objective approach to rating their employees. This fact is highlighted by the fact that assistant managers received significantly lower performance ratings ($r = -.42, p < .01$) than did managers. This could imply that assistant managers are perceived as having poorer job performance as an artifact of occupational status, or that they were never promoted to manager due to poor job performance in the past. However, due to the small size of
the "assistant manager" subgroup (n = 18), caution should be used in drawing any conclusions from this correlation. Problems with inter-rater reliability may have had a great impact on the results of this study.

As mentioned previously, the 15 "work-related behaviors" were presented for informational purposes only, and were not used in data analysis due to the fact that there was no evidence of their predictive capability. An inspection of these items in Appendix A would seem to indicate that to be an effective restaurant manager, one should be a "high energy, domineering" person, yet "friendly and even-tempered". There appear to be no items on this rating form related to concepts such as "development of harmonious and efficient work force," "attainment of organizational goals," possession of "problem-solving abilities," etc.

Even organizations with well-defined strategies for assessing managerial ability may find that each "effective manager" possesses a unique combination of skills and abilities, and that no single trait or combination of traits is a guarantee of success. For this reason, successful organizational research should be recognized as a continuing endeavor for gradual improvement, as opposed to a "quick fix." It requires genuine commitment and considerable effort on the part of both organizational researchers and members of the organization(s).
It is sometimes difficult for organizational concerns to avoid becoming impatient and frustrated while waiting for the "pay off." More often than not, research interest, cooperation, and commitment are initially coveted at the uppermost organizational levels by individuals who understand their importance, but who may feel that they are much too busy to do much more than agree to assist. After the initial zeal has passed, the actual "assistance" is passed on to those at lower organizational levels who not only have less to gain, but who may also resent the subsequent additional unwanted and misunderstood responsibilities associated with research. For example, if the CEO of a large corporation agrees to a study involving 1,000 person/hours of his organization's time in order to increase organizational effectiveness and profitability over a 5-year period, he or she may very well agree to do it because the long-term gain is worth the cost. However, as the study progresses, the tedious, time-consuming, and often "thankless" tasks of data collection are passed on to those at lower levels. Critical information is therefore often gathered with very little effort or commitment. In this example, the CEO may have heartily endorsed the organizational research, but probably would pass the actual "work" to someone who, even if he or she understood it, would probably not make $1/year more regardless of the success or failure of the project. Some organization may,
in fact perceive such research as a threat to their job security.

We, as researchers, also commonly make the mistake of assuming that everyone recognizes the "normal distribution" of job performance, and we worry too little about their inaccuracy in collecting this performance data. We forget that, in the working world, those who succeed move up, those who fail drop out, and very often we are left with (as suggested by "the Peter Principle") those who exhibit somewhat "average" performance. To a district manager, middle manager, or human relations employee, "average" is often the rating of choice because it requires the least justification. Some organizations, in fact, pride themselves in "restriction of range" by virtue of the fact that they believe they "hire only the best", and that admitting to having "poor-performing" subordinates is an indication of poor personnel management within their organizations.

Another problem is that of inappropriate domain sampling. Few studies have transcended the simplistic notion that effective job performance can be predicted from examination of a single personality "trait," a single vocational "preference," or particular "interaction style." Much recent research has been devoted to validity generalization of such characteristics. Ghiselli (1973) mentioned that the reasons for lack of predictive utility of
many measures was the fact that there was so much variation across job task domains, selection tests were of limited value unless validated in the specific setting in which they were to be used.

The findings presented here should serve only as a departure point for future research. Contrary to the basic hypotheses of this study, the characteristics with the greatest assumed predictive value did not yield significant differences in job performance for this particular group in this particular setting. Other characteristics that were thought to have little or no predictive power, did have some apparent predictive utility. Results of the present study need to be cross-validated before any conclusions can be drawn from the results. What becomes evident from this and previous studies is that more diverse theoretical models need to be developed. Historically, "single-trait" orientations have failed to yield significant predictive utility in most cases. There is a need for future research which focuses on a more "interactive approach" between personality variables, job interests, skills and abilities, and motivation. Such research may indicate that there is more than one "successful combination" of these factors.

A final issue to be examined before abandoning the assessment of personality, interests, interaction styles, and other characteristics as predictors of job performance, is the fact that, to date, much of the research involving
such predictors has been centered around leadership "perceptions," not successful performance in real-life settings. Research emphasis needs to take a hard turn toward the practical. This is not to say that the study of "non-traditional" prediction measures should be discarded, but that they should be focused on true organizational needs rather than guided by "probability of publication" concerns.
APPENDIX A

CRITERION MEASURES
Criterion Measures: "Work-related behaviors" and Overall Rating included on "Supervisory Rating" form.

Work-related Behaviors:
1. Learns new skills quickly.
2. Understands instructions the first time.
3. Works through numerical information quickly.
4. Quick-paced during rush hours.
5. Maintains high energy level over long shifts.
6. Makes decisions promptly and without hesitating.
7. Assertively gives directions to subordinates.
9. Speaks out and makes opinions known.
10. Keeps a consistent mood throughout the work shift.
11. Rebounds quickly from frustration.
12. Maintains composure under pressure.
14. Makes the first move to start conversations with people.
15. Spends time talking to customers, co-workers and subordinates.

The above "work-related behaviors" were rated by immediate supervisors on a Likert type scale consisting of: Always, Very Often, Fairly Many Times, Occasionally, and Never. They were not summed to arrive at overall rating due to lack of confidence in the items.
Overall Performance Rating:

Subjects' immediate supervisors (district managers) were asked to provide an overall rating for each manager/assistant manager by responding to the following statement:

"Of all people I've ever supervised in this manager's position, I would rank this individual as (check one):

___ Outstanding (top 10%)
___ Above Average
___ Average (middle 40%)
___ Below Average
___ Unsatisfactory (bottom 10%)

Overall rating was an independent subjective measure of overall performance and was not based on nor derived from ratings on the 15 "work-related behaviors" listed above.
Correlations between Predictor Variables and "Work-related Behavior" Criterion Variables.

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**Note.** Abbreviations used for predictor variables (test subscales):

FEI - FIRO-B, "Expressed Inclusion" scale.
FWI - FIRO-B, "Wanted Inclusion" scale.
FEC - FIRO-B, "Expressed Control" scale.
FWC - FIRO-B, "Wanted Control" scale.
FEA - FIRO-B, "Expressed Affection" scale.
FWA - FIRO-B, "Wanted Affection" scale.
GZF - Guilford-Zimmerman Temperament Survey, "Friendliness" scale.
GZM - Guilford-Zimmerman Temperament Survey, "Masculinity scale".
GZSF - Guilford-Zimmerman Temperament Survey, "Falsification" scale (Subtle).
GZGF - Guilford-Zimmerman Temperament Survey, "Falsification" scale (Gross).
THL - Thurstone Test of Mental Alertness, "Linguistic" scale.
THQ - Thurstone Test of Mental Alertness, "Quantitative" scale.
THT - Thurstone Test of Mental Alertness, "Total" score.

Abbreviations used for criterion measures correspond the items on the supervisory rating form (See Appendix A), e.g., "R1"=Item #1, "R2"=Item #2, "R3"=Item #3, etc. Below are the "criterion" measures ("work-related behaviors" listed on the rating form:

R1 - "Learns new skills quickly".
R2 - "Understands instructions the first time".
R3 - "Works through numerical information quickly".
R4 - "Quick-paced during rush hours".
R5 - "Maintains high energy level over long shifts".
R6 - "Makes decisions promptly and without hesitating".
R7 - "Assertively gives directions to subordinates".
R8 - "Disciplines subordinates who do not follow rules".
R9 - "Speaks out and makes opinions known".
R10 - "Keeps a consistent mood throughout the work shift".
R11 - "Rebounds quickly from frustration".
R12 - "Maintains composure under pressure".
R13 - "Acts comfortable and natural around people".
R14 - "Makes the first move to start conversations with people".
R15 - "Spends time talking to customers, co-workers and subordinates".

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


