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THE RELATIONSHIPS AMONG VOCATIONAL INDECISION, FEAR OF SUCCESS AND LOCUS OF CONTROL AS MODERATED BY SEX AND ABILITY

The Ohio State University

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THE RELATIONSHIPS AMONG VOCATIONAL INDECISION, FEAR OF SUCCESS AND LOCUS OF CONTROL AS MODERATED BY SEX AND ABILITY

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By
Karen Marie Taylor, B.A., M.A.

* * * * *

The Ohio State University
1979

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CHAPTER I
INTRODUCTION

Vocational indecision has been the focus of increasing attention in the field of vocational psychology. Interest in the undecided student results from two emerging trends: 1) the incidence of vocational indecision among high school and college students has been increasing (Lunneborg, 1975, 1976) and 2) undecided students seeking help with vocational decisions comprise a large part of the clientele of most university counseling centers (Harmon, 1973). Although interest in vocational indecision may have increased, existing theories of career development deal only tangentially if at all with vocational indecision. Thus, the need for research efforts to integrate current career development work with findings concerning vocational indecision seems evident.

Vocational Indecision

Much of the research concerning vocational indecision has centered on attempts to compare students who are vocationally undecided with their decided counterparts in a search for factors which are related to career indecision. The undecided student has been described as more anxious (Kimes and Troth, 1974; Walsh and Lewis, 1972), more dependent (Ashby, Wall and Osipow, 1966), and more dogmatic (Maier and Herman, 1974) than the decided student. In addition, the undecided student has been characterized as evidencing a lower estimate of self-esteem.
(Barrett and Tinsley, 1977; Marr, 1965; Resnick, Fauble and Osipow, 1970) and having lower high school and college grade point averages (Lunneborg, 1975) than the decided student. Thus, while several studies have suggested characteristics differentiating undecided from decided students, other studies have not found factors which differentiate decided from undecided students (Baird, 1967; Buck, 1970; Harmon, 1973).

Although differences have been found to distinguish between the undecided and decided student, these differences are also characterized by conflicting and confusing results (Holland and Holland, 1977); thus, no major conclusive results have been found which consistently distinguish decided from undecided students and the search for differential factors continues. Therefore, a need for further research to clarify the results found throughout the vocational indecision literature is necessary. Such research attempts are also important in order to provide some theoretical and conceptual links to the more well-developed theories of vocational behavior and to assist the development of counseling interventions designed to aid the undecided student.

A review of the vocational indecision literature suggests that many investigations in this area have attempted to explore characteristics of the vocationally undecided and decided student from a single-factor point of view which views undecided students as a uniform subject type. Conceptualizing and therefore investigating correlates of vocational indecision from such a unidimensional framework could be a fundamental reason that the literature is fraught with conflicting findings. It seems probable that attempting to view the undecided
student as a member of a homogeneous group and to search for a single correlate of career indecision has thus resulted in contradictory and inconclusive evidence.

Recently some researchers have addressed the issue of uniformity or unidimensionality in the research paradigms of vocational indecision investigation. Holland and Holland (1977) have suggested that less emphasis should be placed on discovering single variables that relate to vocational indecision. Osipow, Carney, Winer, Yanico and Koschir (1976) have developed an instrument to measure several distinct antecedents of educational/vocational indecision, thus recognizing the inefficiency of defining indecision as a unidimensional construct. Perhaps vocational indecision may best be conceptualized from a theoretical framework which allows for a multi-variable explanation of vocational indecision. Such an explanation of vocational indecision may include correlates or predictive factors of indecision which differentially influence students.

The focus of the present research concerns the investigation of characteristics which differentiate vocationally decided students from vocationally undecided students within a broader multidimensional theoretical framework than has previously been provided. The formulation of possible multidimensional constructs or correlates which may characterize the undecided student is a necessary first step in this research.

Some researchers have suggested that personality characteristics have relevance for the study of vocational behavior (Cellini, 1978; Foster and Gade, 1973; Goldschmidt, 1967). Osipow (1973) named one
of the four theoretical approaches to thinking about career development as a personality approach. Thus, an investigation of vocational indecision including personality dimensions may also warrant relevance to furthering theoretical and practical understanding of vocational indecision. Two important personality constructs which may be important in understanding vocational indecision are locus of control and fear of success.

**Locus of Control**

In attempting to explain human behavior, Rotter (1954) postulated a social learning theory of personality which may have relevance to a further understanding of vocational indecision. A fundamental tenet of this theory posits that behavior as "described by personality constructs has a directional aspect" which is goal-directed and can be inferred from the effect of reinforcing conditions which surround the behavior (Rotter, Chance and Phares, 1972, p. 8). Rotter further postulated the concept of locus of control within this social learning model of personality. He defined locus of control as an individual's attribution of causation of environmental consequences as due to internal variables (e.g., ability, skill) or as due to external variables (e.g., luck, chance, fate).

The theory has attempted to predict behavior from a knowledge of these constructs and thus may have relevance in attempting to understand and/or predict the behavior of vocational indecision.

A number of studies have examined personality variables and behavioral correlates which distinguish internals from externals. Higher course grades have been reported for internals in comparison
to externals (Foster and Gade, 1973; McGhee and Crandall, 1968). Hersch and Scheibe (1967) reported that internals described themselves as industrious, achieving, and effective significantly more often than externals. Externals were described as less dominant, less sociable, and lower on intellectual efficiency than internals (Hersch and Scheibe, 1967). Clouser and Hjelle (1970) found externals evidenced higher dogmatism than internals. Behavioral variables of information-seeking and risk-taking were found to be lower in externals than internals (Baron, 1968; Davies and Phares, 1967). In review of the research evidence supporting personality, ability and behavioral differences between internals and externals the construct of locus of control may offer some conceptual clarity to the vocational indecision research.

Locus of control could therefore be an important variable in relation to vocational indecision in that internals may feel more in control of their own vocational decisions and thus more likely to be career decided. Externals, on the other hand, may evidence more vocational indecision. The external individual could possibly be postponing making an educational and/or vocational decision until some external pressure demands that s/he make such a decision. Or the external student may, in accord with Rotter's theory, believe that his/her vocational decisions are simply up to chance and are thus not invested in expending the time and energy to make a choice. Internals have also been characterized as persons who will seek out more information than externals in an ambiguous situation (Davies and Phares, 1967) which could relate to the amount of vocational information a student has explored and thus possibly to the degree of vocational
decidedness.

A relationship between locus of control and vocational indecision has been supported by Cellini (1978) who found that externals were more vocationally undecided than internals. A replication of this finding is also an important endeavor given the current status of vocational indecision literature.

A second personality construct, fear of success, may have both theoretical and practical relevance to a better understanding of vocational indecision.

**Fear of Success**

Horner (1968) originally postulated the motive to avoid success as an enduring personality motive by which persons would avoid situations in which they could be successful because of the negative consequences associated with success, thus the construct has been more popularly labeled fear of success. Fear of success (FOS) was defined as a disposition to become anxious in response to success which stemmed from anticipated negative consequences. The postulation of FOS generated a large amount of research including direct or partial replications of Horner's (1968) original study (Hoffman, 1974; Tresemer, 1976). More than 200 articles have been written in further investigation of this construct and an impressive collection of divergent and conflicting results now exists. In a review of these studies, Tresemer (1976) concluded that there are no sex differences in the incidence of FOS; the incidence of FOS for both men and women has decreased since Horner's (1968) original study; and few behavioral or personality variables have been found to correlate with FOS.
In contrast to Tresemer's conclusions, FOS in women has been found to correlate positively with increasing grade level (Lavach and Lanier, 1975), with performance in competitive situations (Pepelau, 1976), with the instructional set imposed on a task situation (Patty, 1976), and with low career aspirations and choices of traditional sex-role stereotyped careers (Esposito, 1977).

FOS may have relevance for the present study as a viable personality correlate of vocational indecision. As noted above, FOS was found to positively relate to low career aspirations and traditional sex-role stereotyped occupational choices in women (Esposito, 1977).

It may be that a person high in FOS who has been encouraged to have high-level career aspirations may find him/herself in conflict and thus be undecided. It has also been found that a higher incidence of FOS is evident in high ability women who do have the potential for achievement. It seems plausible that high ability persons who are fearful of success may thus encounter conflict when attempting to make educational and/or vocational decisions. These high ability, high FOS individuals may therefore be more vocationally undecided than low ability, low FOS persons possibly because these individuals have the ability to achieve occupational success in several occupational fields. It may be that FOS is exerting an inhibitory mechanism on the career decision making process of students who view success in certain career alternatives as implicative of negative consequences and thus, remain undecided.
Summary

The above discussion explores the possible relationships between two personality variables and vocational indecision. The investigation of the personality variables of locus of control and fear of success as related to vocational indecision may aid in an attempt to better predict, understand and counsel students experiencing vocational indecision. While fear of success and locus of control may in general be related to vocational indecision, their relative importance in its prediction may be related to the sex and/or the ability level of the individual student. As has been noted above the incidence of fear of success in males and females may be different and therefore the influence of fear of success on vocational indecision may well depend on the sex of the student. This same hypothesis may well be proposed for high and low ability persons and for the relationship between locus of control and the sex and ability level of a student. Exploring the predictive importance of fear of success and locus of control on vocational indecision by taking into account a student's sex and ability level allows a multifactor, multidimensional approach toward research in vocational indecision which can be attempted from within a personality approach allowing for different characteristics to differentially interact with vocational indecision. Thus, the purposes of the present study were, in general, to investigate the relationships among fear of success, locus of control, and vocational indecision in college students and the extent to which sex and ability level moderated these relationships. More specifically, it was postulated that vocationally undecided students would more often be characterized as externals and as exhibiting higher levels
of fear of success than would decided students. In addition, the above considerations also suggest that sex and ability will act as moderator variables in the relationship of fear of success and locus of control as predictive of vocational indecision.
A review of selected literature pertinent to the present study is presented in this chapter. The literature available on the construct of fear of success alone exceeds 200 references. Similarly, research on Rotter's personality construct of locus of control includes hundreds of studies as does the area of psychological research pertaining to vocational indecision. In an attempt to integrate and present in a clear fashion the studies pertaining to the constructs of vocational indecision, locus of control, and fear of success this review will focus upon research most relevant to this particular study.

More specifically, the following review contains three sections of selected literature relevant to each of the following major constructs: 1) vocational indecision, 2) locus of control, and 3) fear of success.

Vocational Indecision

Vocational indecision, an area of research subsumed under the broader classification of vocational psychology, has mainly been studied in a tangential manner and often given secondary status or importance in comparison with other aspects of vocational psychology. The existing vocational and/or career development theories do not often directly deal with nor articulate theoretical notions concerning vocational indecision. Thus, as a construct the theoretical underpinnings of
vocational indecision are somewhat less than well-established, particu-
larly when for many career development theorists and vocational psych-
ologists simply asking a person if s/he was decided about a career 
choice seemed adequate. Only recently have researchers begun to mea-
sure vocational indecision and suggest that this once thought unitary 
concept may well be more complex than originally assumed.

The following literature review briefly examines the theoretical 
formulations concerning vocational indecision and measurements efforts 
to assess vocational indecision. A more thorough review of the intel-
lectual and personality correlates of indecision is also presented as 
these studies are of particular importance to the present research.

Theoretical formulations and instrumentation. Although most voca-
tional theories do not explicitly deal with vocational indecision some 
theorists define a task or set of tasks corresponding to vocational 
choice behavior. Given that indecision implies no choice has been made, 
literature pertaining to vocational decision making processes and tasks 
is relevant to a discussion of indecision.

Super (1963) defined five vocational development tasks: 1) crys-
tallization, 2) specification, 3) implementation, 4) stabilization, 
and 5) consolidation. Crystallization of a vocational preference in-
volves gaining information about the world of work and about oneself 
(e.g., interests, values). This vocational developmental task cul-
minates in making a tentative vocational preference. Task two, 
specification of a vocational preference, involves the narrowing of 
a general career path into a specific career choice. The other three 
vocational development tasks involve the implementation of the
vocational preference, becoming more stable in the chosen field of work, and becoming firmly established within the chosen field. Tasks one and two are most relevant to career decision making. Although Super's theory prescribes counseling interventions for persons with vocational difficulties the focus of his theory and interventions is on the development of the individual's self-concept and thus vocational indecision per se becomes less important in this theoretical construction.

Tiedeman and O'Hara (1963) defined two broad categories of the career development process: 1) anticipation, the decision making process and 2) accommodation, the implementation process. Because of the emphasis on career decision making, this theoretical framework also provides relevance for career indecision. The category of anticipation includes four stages: a) exploration, b) crystallization, c) choice, and d) clarification. Only recently has research investigated this model with emphasis on the career decision making process.

Harren (1976) designed the Assessment of Career Decision Making (ACDM) based on Tiedeman's theoretical work. The ACDM, using Tiedeman's stages, measures commitment to college major and occupational choice. Harren also categorized the decision making styles measured by the ACDM into three general areas: 1) rational, 2) intuitive, and 3) dependent. The categories are based on the level of personal responsibility an individual takes for decision making and the use of rational versus emotional strategies in decision making.

An area of theoretical formulation that has more specifically addressed the construct of vocational indecision includes the explanatory work of some theorists in defining the components of and/or
types of vocational indecision.

Williamson (1939) divided indecision into four categories: 1) no choice -- a person cannot differentiate or select among various career alternatives, 2) uncertain choice -- a person has made a tentative selection, 3) unwise choice -- a person has chosen a career in conflict with his/her interests or aptitudes, and 4) discrepancy -- a person's interests and aptitudes differ. Bordin (1946) postulated a different categorization attempting to increase the predictive utility of such a category system. He developed the following five categories: 1) dependence, 2) lack of information or experience to make a choice, 3) self-conflict over two views of self which lead to different career choices, 4) choice anxiety in which all choices have negative connotations, and 5) no problem in which the person has made a decision and wants reassurance.

Recently Osipow, Carney and Barak (1976) have presented another schema by which to conceptualize the factors which contribute to vocational indecision. The four factors of vocational indecision proposed by Osipow et al. (1976) were based on a factor analysis of the Career Decision Scale (CDS) designed by Osipow, Carney, Winer, Yanico and Koschir (1976) to measure educational/vocational indecision. The four factors of vocational indecision, named by Kazin (1977) were: 1) need for structure, which indicated a lack of structure and confidence about vocational decision making and the possibility of choice anxiety leading to avoidance of choice behaviors; 2) block, which indicated an external block to the preferred choice; 3) multipotentiality, which indicated an approach-approach situation wherein several attractive
alternatives were available; and 4) delay, which reflected some personal conflict regarding decision making. Not only was the CDS a significant addition to the measurement efforts of vocational indecision but the measure also took into account the multidimensional nature of vocational indecision. Although other tests have been developed to measure indecision few have taken into account this multidimensional framework (Harren, 1966; Holland and Nichols, 1964).

Several studies have investigated the construct validity of the CDS (Osipow, 1979). The first of these conducted by Osipow et al. (1976) investigated seven groups of Ohio State University students. Students expressing vocational concerns (e.g., those enrolled in a vocational exploration course or seeking vocational counseling) scored significantly higher on the CDS than did students not expressing such concerns. The indecision scores for the groups of students involved in vocational intervention programs decreased following completion of the program thus offering more evidence to support the construct validity of the instrument.

In a study of students involved in a residential career planning program, Sutera (1977) found significant differences in pre- and post-CDS scores as students became less vocationally undecided following completion of the program.

Taylor (1979, unpublished data) compared groups of students in a residential career planning program with a random sample of first year college students and found that those Ss seeking a program designed to aid their career development were significantly more undecided than non-program students according to the CDS. She also found that following
the program students participating in the career planning intervention were significantly less undecided than when they had entered the program.

The studies reviewed by Osipow (1979) in his CDS manual demonstrate firm construct validity for the instrument, thus the instrument does appear to adequately measure vocational indecision.

In conclusion the theoretical formulations and measurement of vocational indecision have more recently been explored by researchers. It seems evident that further study involving the theoretical nature of indecision and active pursuit of measuring this construct is in order.

**Correlates of indecision.** One of the most common approaches to the study of the undecided student developed from a framework posited by Williamson (1939) that presents an undecided student as immature and emotionally unstable. Research stemming from this theoretical standpoint searches for variables which differentiate the vocationally decided from the undecided student. Implications derived from this type of study are made for application to counseling strategies for working with the undecided student. Thus, the majority of the studies in the literature have investigated factors which differentiate the vocationally decided from the vocationally undecided student. The major factors of investigation have included ability, personality variables, and interests.

**Ability.** Academic performance and ability have been postulated to differentiate undecided from decided students, specifically it has been postulated that undecided students are less able and achieving than decided students. One explanation for this hypothesis is that
students may be undecided because they have some reservations about their academic abilities and although they may have a vocational preference most are not at all sure they will be able to accomplish their aspirations. Thus, an academically less able student may indicate vocational indecision (Osipow and Gold, 1967; Elton and Rose, 1971). Some research has supported the postulated relationship between ability, academic achievement and vocational indecision.

In two studies, Lunneborg (1975, 1976) investigated academic performance and career indecision. In a study examining interest differentiation in vocationally undecided college students she found academic achievement (high school and college grade point averages) was lower for vocationally undecided students than for decided students. A second study examined vocationally undecided college graduates. Lower grade point averages were found for the undecided as compared to the decided group of graduates. Undecided persons also had fewer career-related post-college plans and had been less satisfied with their overall college experience as compared to decided graduates. These two studies represent the most positive findings in the literature concerning academic ability and performance and career indecision.

In an investigation of entering male students at Pennsylvania State University, Osipow and Gold (1967) found that students expressing consistent career preferences as measured by the degree of congruence between SVIB scores and reported first and second career preference had higher SAT verbal scores than did students expressing inconsistent vocational preferences. The authors suggested that students with inconsistent preferences may have chosen a second career choice which
was not consistent with their SVIB interest patterns because this second choice represented less risk to a student unsure about his academic ability to succeed in his first choice.

Walsh and Hanle (1975) examined academic achievement and academic aptitude variables with choice of a congruent career selection. The direction of the findings indicated a negative relationship between academic achievement and aptitude and career indecision although no significant results were reported. Elton and Rose (1971) concluded that undecided students who later graduated were not as academically able as measured by ACT scores as were decided students. The study does not demonstrate unequivocal evidence concerning the relationship between academic ability and career indecision due to the high rate of attrition of the undecided students (75%). There does appear to be a negative relationship between academic ability and career indecision but this suggestion cannot be concluded without caution given that three-fourths of the original subjects left school.

In contrast to studies suggesting a positive relationship between indecision and low ability and achievement are studies which show no difference between decided and undecided. Baird (1967) found no significant differences between decided and undecided persons in a sample of 59,618 college bound students on ACT test scores of English, math, natural sciences, and the composite score or on high school grade point average. Given the size of Baird's sample, the findings of no differences between decided and undecided students increase in importance. It could be that the relationship between achievement and indecision is one that is a meaningful distinction for college students and not
yet apparent at earlier grade levels. Support for these findings of no difference between decided and undecided students have been demonstrated by other researchers (Buck, 1970; Harmon, 1973).

In addition to research reporting conflicting findings concerning ability; achievement and vocational indecision some studies have found even more complicating results. In a correlational study of vocational indecision and academic achievement as measured by first quarter earned grade point averages, Schweikert (1979) found a significant positive relationship for women college students between vocational indecision as measured by the Career Decision Scale. Thus, as indecision increased so also did grade point average. This finding was in direct contrast with the predicted postulation of a negative relationship between vocational indecision and grade point average. A possible explanation could incorporate the CDS factor of multipotentiality. It may be that higher ability students have more than one attractive alternative from which to choose and are thus undecided. Another explanation for this finding particularly as it was only demonstrated for women students could be that grade point averages were collected after only one quarter of college and no control for course difficulty was made. Thus it could be that women students earning higher grade point averages were enrolled in less demanding courses than students earning lower grades.

A study conducted by Ashby, Wall and Osipow (1966) found no difference between decided and undecided students on measures of academic achievement and aptitude although both the undecided and decided students were academically superior to a group of tentatively decided students. This finding may again indicate that the student who is
most unsure about his/her academic ability may have a tentative second choice of a vocational preference which is less risky to achieve.

**Personality variables.** Another set of variables postulated as related to vocational indecision are those related to the general construct of self-esteem. Resnick, Fauble and Osipow (1970) reported higher levels of self-esteem correlated positively with certainty of vocational choice. Investigating self-esteem and vocational crystallization, Barrett and Tinsley (1977) found undecided undergraduates had lower estimates of self-esteem than decided students which supports previous similar findings by Marr (1965). In a study of more than 1,600 high school and college juniors, Holland and Holland (1977) found that undecided students have a less stable self-identity as measured by the Identity Scale and are less career mature as measured by the Career Maturity Index than decided students. The authors concluded that it is a mistake to treat all undecided students as if they have an indecisive disposition stemming from anxiety. They suggested that in most respects the undecided do not have any special negative characteristics and should be treated accordingly.

Other researchers have postulated and found the undecided student to be more anxious than the decided student (Kimes and Troth, 1974; Walsh and Lewis, 1972). Kimes and Troth (1974) found a significant and positive relationship between career indecision and trait anxiety for a sample of 829 undergraduate students. The undecided student has also been described as more dogmatic than the decided person (Maier and Herman, 1974). These authors also suggested a positive relationship between indecision and low self-esteem, although their comparisons did
not reach significance.

A variety of other studies postulating personality differences between decided and undecided students have found undecided students to be more dependent (Ashby et al., 1966), less career salient (Greenhaus and Simon, 1977), more anxious about making a vocational choice (Hawkins, Bradley and White, 1977), lower in risk taking behaviors (Ziller, 1957) and exhibiting an external locus of control (Cellini, 1978).

In contrast to the above studies which concluded significant personality differences between decided and undecided students some studies have not found these differences. Studies not substantiating the postulation of personality differences between decided and undecided students often used the same variables of investigation and instrumentation as did the above studies (Baird, 1967; Buck, 1970; Elton and Rose, 1971; and Harmon, 1973).

Interests. A third postulated difference between decided and undecided students maintained that interest patterns of these two groups would be different. As discussed below this hypothesis has not been born out empirically.

Lunneborg (1975) using interest scores gathered on the Vocational Interest Inventory which measures interests according to Roe's classification found little support for the above hypothesis. Undecided students were found to be slightly higher in business contact and lower in outdoor interests than decided students.

An investigation to examine the hypothesis that crystallization of vocational interests was related to vocational exploratory behavior in men was conducted by Buck (1970). Using SVIB scores to indicate
crystallization of interest Buck found no relationship between the development of interest crystallization and exploratory behavior. Although interest crystallization tends to increase throughout college the reasons for this development seemed to have little relationship to vocational exploratory behavior at least as it was measured in this study.

In the large sample study by Baird (1967), measures of vocational interests did not generally differentiate between decided and undecided male students although a slightly lower interest in science was observed for vocationally undecided male students.

These three studies on the relationship between vocational indecision and interests are representative of the research in this area.

Summary. In conclusion, the above review of investigations pertaining to examinations of vocational indecision correlates and possible antecedents of indecision yields as Holland and Holland (1977) stated "conflicting findings, negative findings or negligible findings" (p. 404). As has been demonstrated the vocationally undecided and decided student have been investigated from a variety of perspectives but the picture of the undecided student is lacking in conceptual clarity. A possible reason for such a confusing picture concerning the undecided student may be that many of the research designs employed in the above studies approach the area of vocational indecision from a unitary point of view and attempt to describe the undecided student as a single homogeneous entity comprised of various components, e.g., dependence, low self-esteem, low academic ability, etc. It may also well be that few of these studies have a firm theoretical foundation from which their
investigations were born.

Given the recent work by Osipow and his colleagues to define a multidimensional view of vocational indecision and given that the undecided student probably does not comprise a single type of person, the further investigation of vocational indecision from a multidimensional, multivariate point of view incorporating a clearer theoretical foundation is thus an important endeavor. An approach not yet utilized in vocational indecision research involves the identification of variables which do in fact differentiate the undecided from the decided student and the further investigation of these variables as moderated by other significant psychological and/or behavioral factors in terms of their predictive power on vocational indecision.

Locus of Control

In an attempt to explain human behavior as a function of the interaction between the person and his/her meaningful environment, Rotter (1954) proposed a theory of social learning. The theory integrates elements of reinforcement theories and field theories. Prediction of behavior involves the expectancy the individual holds that a particular behavior will result in a particular environmental consequence (Rotter, Chance and Phares, 1972). According to the theory, expectancies generalize from a specific situation to other situations. Individuals develop generalized expectancies concerning their behavior and the subsequent environmental consequences. Rotter (1966) describes people according to two categories: Externals -- persons believe that consequences from the environment are the result of external factors (e.g., chance, luck, fate) and Internals -- persons believe that
consequences from the environment are the result of internal factors (e.g., skill, intelligence).

Lefcourt (1966) described internal control as a principle which "refers to the perception of positive and/or negative events as being a consequence of one's own actions" whereas external control referred to "the perception of positive or negative events as being unrelated to one's own behaviors in certain situations and therefore beyond personal control" (p. 207).

Phares (1957) made the first attempt to measure the psychological variable of locus of control. He developed a 26 item likert-type scale measuring external and internal attitudes. A revision of this scale was developed by James (1957) and included filler items. The final version of the scale is a 29 item, forced choice test which included six filler items intended to somewhat camouflge the purpose of the test (Rotter, 1966).

Numerous studies investigating the construct of locus of control have been conducted. The following review describes those most pertinent to this present study.

The earliest studies by Rotter and his associates involved giving subjects a series of tasks to complete. Before each task Ss were asked to rate the probability of success on the task (Rotter, 1966). Two conditions were created: 1) a skill condition in which Ss were informed that their performance depended on skill and 2) a chance condition in which Ss were told performance was largely a matter of chance. Using the I-E scale to determine locus of control, half of the Ss in each group were externals and half were internals. The
results, as predicted, found persons in the skill condition were more likely to alter their probability ratings of success after feedback (Ss lowered ratings following a failure and raised ratings following a success) than were Ss in the chance condition. Regardless of condition, internals were more likely to alter their ratings of success in response to environmental consequences than were externals. These results were concluded to confirm that internals view their performance as more closely related to their own behavior than do externals.

Academic ability and achievement motivation. One hypothesis explored by some researchers has investigated the relationship between academic ability and achievement motivation and locus of control. Specifically, it has been postulated that internals are more academically able and exhibit higher achievement motivation than externals. This hypothesis predicts that internals who feel they have control over their environment would show more overt striving for achievement than persons who feel they have little control. Research, although mixed, tends to support this postulate.

Foster and Gade (1973) found that academic performance differentiated between persons with an internal locus of control and persons with an external locus of control. Internals earned significantly higher college grades than externals. In a study of children, McGhee and Crandall (1968) found the same relationship.

Hersch and Scheibe (1976) found that internals describes themselves as industrious, achieving and effective more often than externals on the Adjective Check List. These same authors, using the California Personality Inventory, found that externals were less
dominant, less sociable, and scored lower on intellectual efficiency than internals.

In a review of studies concerning learning and achievement and locus of control, Lefcourt (1966) concluded that an internal locus of control for male children was predictive of achievement behaviors concerned with goal attainment.

In contrast to the above studies which found evidence to support the hypothesis that an internal locus of control and academic ability and achievement motivation are positively related, Hjelle (1970) found no relationship between college students' locus of control and academic achievement variables. The author posited that the lack of relationship might have been due to an overabundance of college students, originally highly competitive, who were exhibiting an external locus of control as a defense against failure.

Duke and Nowicki (1974) using a recently developed measure of locus of control (ANSIE), the original I-E scale, and SAT scores found no relationship between I-E scores and academic achievement, although significant relationships were found with the second measure of locus of control and academic achievement. Internality in males and externality in females positively related to SAT scores.

**Personality correlates.** A second hypothesis found in much of the locus of control literature concerned proposed personality differences between internals and externals. Most of this research supports the theoretical distinctions made by Rotter (1966) in his original work.

Internals have been found to be less conforming (Crowne and Liverant, 1963), less dogmatic (Clouser and Hjelle, 1970), less
anxious (Butterfield, 1964), more dominant, sociable, and tolerant (Hersch and Scheibe, 1967), and less fearful of success (Thurber and Friedli, 1976) when compared to externals.

**Behavioral correlates.** In an investigation of the relationship between locus of control and commitment to social action, Gore and Rotter (1963) found that internals expressed the greatest amount of interest and verbal commitment in taking overt civil-rights action. Extending this finding to persons actively involved in civil rights social action, Strickland (1965) found actives to be more internal, older, and more educated than a group of persons not active in the civil rights movement. This experiment essentially tested behaviorally Gore and Rotter's (1963) preliminary conclusions.

Two additional behavioral components associated with locus of control have included risk-taking and information-seeking behaviors. On both behavioral dimensions, externals were found to be lower than internals (Baron, 1968; Davies and Phares, 1967). Interestingly, the same behavior of risk-taking has been proposed as a correlate of vocational indecision (Ziller, 1957).

Ritchie and Phares (1969) investigated the relationship between locus of control and attitude change. These researchers manipulated the status of the communicator who attempted to change the opinion of Ss. Although the main effect of locus of control was not significant the interaction of locus of control and status revealed that the pattern of attitude change was different for internals and externals in high and low prestige conditions. Externals exhibited less attitude change in the low status condition and more change in the high status
condition than did internals. One explanation for this finding is that externals are more affected by the source of an influence attempt than are internals who seem to be more responsive to the content of the communication.

Another example of behavioral correlates which differentiated between internals and externals was found by Andrisani and Nestel (1976). These authors reported that internals were in higher status occupations, were more satisfied in their work, and earned greater annual salaries as compared to externals.

Cellini (1978) found high levels of vocational indecision as measured by the Career Decision Scale were associated with an external locus of control. Vocational indecision might be defined as the absence of vocational decision making behaviors and thus this study has relevance for this discussion. Cellini suggested that the externally oriented individual was characterized by a set of traits including "low achievement motivation, lack of information-seeking behavior, unwillingness to attempt to control the environment, and belief in the forces of chance of determining the directions of one's life" (pp. 50-51). These characteristics would seem to be dysfunctional to the process of making a vocational decision. Cellini also found externals scored significantly higher than internals on two CDS factors: need for structure and delay indicating externals needed more information about themselves in terms of aptitudes and interests and about occupations as well as some reassurance that an initial choice was satisfactory. Cellini's description of the undecided student as more external might well provide a meaningful conceptualization in developing
interventions for helping the vocationally undecided student become more controlling of themselves and the consequences in their environmental situations.

In summary of this selected review of research pertaining to locus of control, it has been shown that externals tend to differ from internals on a variety of dimensions including academic ability and achievement motivation, personality characteristics, and actual behavioral dimensions. Although the vocational indecision literature does not define the academic, personality, and behavioral correlates of indecision as clearly as the locus of control literature does, the resulting picture of the vocationally undecided student and the person expressing an external locus of control are very similar. As stated above the picture of the undecided student is confusing. It may be that integrating theoretical constructs from various areas of psychological research could help reduce some of this conceptual confusion.

Fear of Success

An attempt to understand the need for achievement in women and to explain unresolved sex differences in previous achievement research led Horner (1968) to postulate the Motive to Avoid Success. Horner conceptualized the motive to avoid success within the framework of an expectancy-value theory of motivation. The two most important factors which determine the arousal of a motive or disposition are 1) the expectancies a person holds about the nature and likelihood of the consequences of his/her behavioral action and 2) the value of the consequences to the individual. Thus, the motive to avoid success would lead a person to avoid situations in which success might be a
consequent of his/her behavior so as to inhibit any expected negative consequences. Horner defined the motive to avoid success as a latent, stable personality disposition acquired early in life in conjunction with sex-role standards which leads to an avoidance of success due to the anticipated negative consequences associated with such success.

Horner (1972) also hypothesized that the motive to avoid success was more "characteristic of high achievement oriented, high ability women who aspire to and/or are capable of achieving success than of low achievement oriented, low ability women who neither aspire to nor can achieve success" (p. 160). The negative consequences associated with success for women such as social rejection, loss of affiliation, or feelings of being unfeminine thus, created anxiety about success. The motive to avoid success is also referred to throughout the literature as fear of success. Both terms have been employed by Horner and others although fear of success (FOS) is more common and will be used in the following discussion.

Using verbal TAT cues, Horner (1968) asked Ss to respond to the following: "After first term finals, Anne (John) finds herself (himself) at the top of her (his) med school class". Ss were asked to respond to same sex cues. Horner designed a simple present-absent system to score Ss' response stories. A present score was given for any story that contained: negative consequences because of the success; anticipation of negative consequences because of the success; negative affect because of the success; instrumental activity away from present or future success, including leaving the field for more traditional work; any direct expression of conflict about success;
denial of the situation described by the cue; and/or bizarre, inappropriate, unrealistic or nonadaptive responses to the situation described by the cue.

In her original study, Horner (1968) found that 65% of the female Ss wrote fear of success stories to the projective sentence cue whereas only 8% of the male Ss responded with fear of success stories.

The effect of FOS on performance in a competitive situation was also examined. Horner concluded that females have a higher incidence of FOS than males and that for women FOS interferes with motivation and performance in competitive situations.

Horner's work stimulated an active and productive research investigation concerning the construct of FOS, its existence, the possible personality correlates, and the possible behavioral dimensions of the construct. Given the more than 200 studies which have been conducted between 1968 to 1976 alone, the following selective review focuses on a brief overview of the current status of FOS, a review of studies involving correlates of FOS most relevant to this study of vocational indecision, and a brief review of instrumentation and measurement of the construct.

Current status. Several studies have furthered the investigation of Horner's original work and have found results which call into question some of Horner's conclusions.

Hoffman (1974) replicated part of Horner's original research and found the frequency of females expressing FOS was 65% of her sample just as it was in Horner's sample, thus FOS had not diminished for women. The frequency of FOS for men, on the other hand, had increased
from 8% in 1965 to 77% in 1974. Although Hoffman found similar rates of FOS for men and women, she also reported sex differences in the FOS themes. The most common theme for women was affiliative loss because of success whereas for men it was the calling into question the value of the success itself.

A study of FOS and race was conducted by Mednick and Puryear (1976) in which no significant differences were found between the levels of FOS for white and black women. The finding of interest in this discussion was that in comparison to earlier work of these same authors the level of FOS in white women had significantly decreased.

In two studies Romer (1975, 1977) found similar rates of FOS for both her male and female samples of children and high school students. She also investigated sub-themes of success-avoidance and concluded that females more frequently than males wrote FOS stories involving loss of affiliation due to success whereas the most common sub-theme for males in response to success were stories concerning tragic events.

Tresemer (1976) in a comprehensive review of research pertaining to FOS, reported that no significant sex differences exist in the level of FOS imagery shown by men and women and the overall proportions of FOS imagery elicited by both sexes in response to TAT cues have decreased.

The above studies, reporting conflicting results, mainly concerned the incidence of FOS in relation to women and men. Some research has investigated the developmental nature of FOS. Lavach and Lanier (1975) found FOS was positively correlated with increasing grade level for high achieving adolescent girls. Kimball and Leahy (1976) found an increase in FOS imagery between the fourth and tenth grades and a
decrease between the tenth and twelfth grades. These authors also reported that FOS seemed to be related to sex only in the high school sample where it was also related to course of study. Female students in secretarial courses showed the lowest level of FOS while females in college prep programs evidenced the highest levels of FOS. This study tends to support Horner's original conclusions that FOS may be a more viable construct for high ability, high achieving women because attainment of success is a possibility for these women.

In his review of the FOS literature, Tresemer (1976) offered a succinct summary of the current status of research on the construct as an area of psychological research in which results were mixed and although some supportive results have been found the cumulative record of FOS research is disappointing. He also suggested that enthusiasm for the construct of FOS should be replaced with caution given that Horner's original postulations have not been supported. The above studies offer a conflicting view of the construct fear of success and thus further research seems evident and necessary in order to clarify some previous findings.

**Correlates.** In contrast to Tresemer's review, studies have been reported that support Horner's postulations and some have found variables which positively relate to FOS.

Horner (1972) found the presence of FOS led to a performance decrement for women in a mixed male and female competitive situation in comparison to a non-competitive situation. Thus a postulate which predicts performance decrements for persons high in FOS has been further investigated in some studies.
Patty (1976) investigated the effect of FOS on performance as a function of the instructional set by which the task is explained. Tasks were described as easy or moderately difficult and as affected by chance (external locus of control) or by skill and effort (internal locus of control condition). Performance varied as a function of the instructional set of the directions for the task. Subjects exhibiting FOS performed better after receiving easy, external instructions than after receiving the reverse type of more difficult and internal instructions; the opposite relationship was found for Ss not exhibiting FOS. Persons high in FOS may have performed better after receiving easy, external directions because any success could be rationalized away as due to the ease of the task and the "fact" that task performance depended largely on chance factors.

To further investigate the effects of FOS on actual achievement behavior, Peplau (1976) examined performance on a verbal skill task in a non-competitive and a competitive situation. She found limited support that persons high in FOS perform more poorly in competitive versus non-competitive situations. She also found only 30% of the women and 44% of the men responded to the TAT cue with a FOS reaction. These percentages differed from Horner's original data in that the incidence of FOS in this sample decreased for women and increased for men.

Another area of interest in the fear of success literature concerns possible relationships between FOS and career development. The earliest mention of the possible effect of FOS on career development was summarized in Horner's (1972) paper on understanding achievement
conflicts in women. An unpublished pilot study by Schwenn (1970) found that of sixteen women tested twelve were high in FOS. Following three years of college, eleven of the twelve high FOS women had changed their career plans to ones which were considered more traditional and appropriately feminine. Only one of the four women low in FOS made a similar change of occupational plans.

The relationship between FOS and women's vocational choices was also investigated by Esposito (1977). This study suggested that high FOS is associated with the choice of a more traditional sex-role stereotyped occupation.

In a study of FOS, sex-role attitudes, and career salience, Illfelder (1978) found that women higher in FOS and more traditional in the sex-role attitudes endorsed were lower in career salience. This finding may indicate that a woman fearful of success may have lower career aspirations and hold careers as less important to her because she may be protecting herself from expected negative consequences she thinks may result from having high career aspirations and holding a career as central in her life.

Although some evidence as cited above suggested that FOS may play an important role in the career development process of women, other studies have not supported this hypothesis. Depner and O'Leary (1976) investigated the relationship between FOS and "Female Careerism" and found that FOS does not seem to be a very powerful determinant of a woman's role choices. Gearty and Milner (1975) found no significant difference in the level of FOS between women undergraduates in traditionally feminine or masculine academic majors. This finding was also
supported by Williams and King (1976).

Other variables which have been investigated in relationship to FOS include academic achievement and locus of control. Although academic achievement has been postulated as a correlate of FOS little support has been generated for this hypothesis (Eme and Lawrence, 1976; Tresemer, 1976). The relationship between locus of control and FOS was examined by Thurber and Friedli (1976). These authors concluded that in addition to locus of control, interpersonal trust was related to FOS. High trust, internal Ss had significantly lower FOS scores than external Ss both low and high in trust and than internal, low trust Ss.

Instrumentation. In most of the aforementioned studies, FOS has been measured using Horner's original present-absent system or some derivation thereof. The use of projective cues in which the experimenter determines which cues to offer Ss may bias the results. The problem of reliably scoring projective type measures has prompted the exploration of new methods of measuring FOS.

Some recent objective paper-pencil measures of FOS have been developed (Cohen, 1975; Good and Good, 1970; Pappo, 1973; Zuckerman and Allison, 1976) and have been reviewed by Griffore (1977) and Sadd, Lenauer, Shaver and Dunivant (1978). Given the scoring and interpretive problems of a projective measure of fear of success and the development of more recent measures of this construct, the objective measure of Zuckerman's and Allison's was chosen for use in this study (see Chapter III).

As Tresemer (1976) has noted the FOS literature reveals mixed results. Some interesting studies pertaining to the career development
particularly of women have been reviewed. A need for further study and investigation of possible relationships between FOS and vocational psychology seems evident.

Summary

Research has been reviewed from three areas of psychological study. Integration and synthesis is made difficult by the fact of the often conflicting results and the use of different and often non-comparable instruments, statistical analyses, and theoretical orientations. Indeed, many of the studies reviewed failed to use any theoretical orientation in organizing their research.

The need for research which attempts to investigate psychological constructs, processes, and human behavior from within a theoretical framework is evident. An approach to this type of study which may hold relevance for the generalizability of its findings might be an approach which investigates psychological constructs from a multi-factor, multi-theory framework.

This study attempted to further investigate vocational indecision from just such a framework by including the theoretical notions and practical findings of research on fear of success and locus of control.
CHAPTER III

METHOD

Subjects

One hundred and one female and 98 male undergraduate students were recruited from an introductory psychology course (Psychology 100) at Ohio State University during the Winter quarter of 1979. Participation in psychological experiments or completion of a paper was required of all students enrolled in Psychology 100 courses. Students who chose to participate in the experiments also had the opportunity to choose which of the available psychological experiments conducted during the quarter s/he would participate in.

Instruments

All Ss completed the following questionnaires in the following order: 1) the Fear of Success Scale, 2) the Rotter I-E scale, and 3) the Career Decision Scale. Ss were asked to provide their sex, age, and high school and college grade point averages. ACT test scores were obtained from student records.

Fear of Success Scale

Fear of success was measured using the Fear of Success Scale (FOSS; Zuckerman and Allison, 1976). The FOSS, an objective 27-item inventory was designed to permit a more easily administered and scored measure of FOS than Horner's original TAT cue method (see Appendix A).
In addition to providing an easier scoring format than Horner's original present-absent scoring system, the FOSS also provides a continuum of FOS scores. A continuum of scores accommodates the notion that people vary in degree of FOS. One intention of the authors in the development of this objective measure of FOS was to provide an operationalization of FOS which was responsive to the criticism that Horner's original TAT cues of John and Anne reflected sex-role stereotypes about males and females, thus the items of the FOSS do not reflect gender.

The rationally derived instrument consists of statements which describe "a) the benefits of success, b) the cost of success, and c) the respondent's attitudes toward success when compared to other alternatives" (p. 423-424). Respondents are instructed to respond to the items on a seven point likert scale, with 1 representing "strongly disagree" and 7 representing "strongly agree". A single composite score reflects a respondent's degree of fear of success. Potential scores range from 27 to 189 with high scores indicating high fear of success. High FOS is reflected by agreement on 16 of the items and by disagreement on the remaining 11 items.

The validity of the scale has been examined with three separate samples in which females scores significantly higher than males on the scale of FOS (Zuckerman and Wheeler, 1975). Zuckerman and Wheeler (1975) also reported research which found that persons with high scores on the FOSS: a) performed poorer in achievement (competitive) situations, b) attributed success to external factors, and c) attributed failure to internal factors more often than persons with
low scores on the FOSS. The scale has thus evidenced some concurrent validity.

The correlations between Horner's original measure of the motive to avoid success and the FOSS although significant, are small. In two samples of women the correlations were .18 and .30; for two male samples correlations were .16 and .22; and for males and females combined the correlation was .25. Griffore (1977) compared the FOSS with Horner's new empirical scoring system and a second objective measure of FOS (Pappo, 1973). The FOSS correlated significantly with Pappo's measure and not with the Horner measure. Griffore suggested that these findings could reflect the fact Horner's measure is tapping fear of academic success whereas the FOSS seems to be more related with items reflecting a person's reaction to general competition.

Sadd, Lenauer, Shaver and Dunivant (1978) reported a factor analytic study of five fear of success measures and two fear of failure instruments. The reliability coefficient found for the FOSS scale was .68. Although this alpha coefficient is low the FOSS did not strongly correlate with fear of failure measures as did other objective measures of fear of success. This author found an alpha coefficient of reliability of .56.

Given the criticism of Horner's original and empirically derived measures (Griffore, 1977) and the lack of a strong and positive relationship between the FOSS and fear of failure measures this instrument was chosen for the current research.
The Rotter I-E Scale

This instrument was developed to measure locus of control (Rotter, 1966). Twenty-nine paired statements, six of which are filler items, comprise the scale. Respondents choose the statement in each pair for which they hold the strongest belief. The total scale yields a score of locus of control by summing those items which indicate a belief in an external locus of control, thus high scores indicate an external locus of control whereas low scores indicate an internal locus of control. Potential scores range from 1 to 23 (see Appendix B).

Rotter (1966) reported test-retest reliability coefficients of .60 for males and .83 for females over a one month interval. Over a two month interval coefficients of .49 for males and .61 for females were reported. The instrument was also found to exhibit moderate to high internal consistency correlations ranging from .65 to .79.

Both discriminant and convergent validity have been demonstrated in later studies. Insignificant correlations were reported for the following variables: intelligence (Hersch and Scheibe, 1967; Rotter, 1966), political affiliation (Minton, 1967), and social desirability (Rotter, 1966).

Research has also found the scale to differentiate internal from external individuals on a number of variables including a) academic performance (Foster and Gade, 1973; McGhee and Crandall, 1968) b) personality variables such as dominance and intellectual efficiency (Clouser and Hjelle, 1970; Joe, 1971; Hersch and Scheibe, 1967), c) self-control (James, Woodruff and Werner, 1965), and d) information-seeking behavior (Davies and Phares, 1967). Significant
Correlations were also found between I-E scores and clinical ratings of locus of control based on interviews. The scale, thus seems to demonstrate construct validity.

**Career Decision Scale**

Osipow, Carney, Winer, Yanico and Koschir (1976) developed an 18 item scale to measure educational/vocational indecision and the antecedents of indecision in college students (see Appendix C). The scale consists of 18 items to which persons respond on a four point scale indicating the degree to which the statement is self-descriptive. Responses range from 4 "exactly like me" to 1 "not at all like me". The composite score of items 1 and 2 are an index of career/educational decidedness. The sum of items 3-18 provide an overall index of career indecision. Potential indecision scores range from 16 to 64 and decidedness scores range from 2 to 8.

Test-retest reliability coefficients for the Career Decision Scale (CDS) were .90 and .81 for two samples of college students over a two-week test-retest period. Item test-retest correlations ranged from .34 to .82, with most of the correlations falling between .60 to .70 (Osipow, Carney and Barak, 1976).

An initial factor analysis was computed on the 16 indecision items (items 3-18) by Osipow et al. (1976) to investigate the possibility of any potential subscales. A factor analysis on a sample of 837 students in college revealed four factors which explained more than 81% of the total variance. The first factor indicated a lack of structure and confidence about dealing with vocational decision making and also indicated the possibility of choice anxiety (items 5,7,8,10,11,13,14,17).
The second factor revealed an external barrier to a preferred choice (items 15, 14). The third factor suggested an approach-approach problem in which more than one attractive alternative choice existed (items 3, 9). The final factor indicated some type of personal conflict was involved in the decision making process (items 12, 15, 18). Factor scores are computed by adding the scores for each item.

Two other factor analytic studies of the CDS have been performed. Kazin (1977) found four orthogonal factors; the first three were similar to Osipow et al. (1976). In a recent manual on the CDS, Osipow (1979) described an unpublished study by Slaney (1978) which found Factor 1 and 4 to be like those found by Osipow et al. (1976), Factor 2 involved less need for vocational information than did Factor 1 and Factor 3 indicated that a choice had been made but something had interfered with the implementation of the choice. Slaney found the following percentages of variance accounted for by each factor in respective order: 45.7%, 18.2%, 13.5%, and 8.0%.

The scale was found to discriminate between students expressing vocational concerns (e.g., enrolled in a career exploration course or seeking career counseling) and students not expressing these concerns (Osipow et al., 1976), thus supporting the validity of the instrument. Career indecision scores of students involved in a career intervention program designed to alleviate educational/vocational indecision were found to decrease (Osipow et al., 1976).

The CDS was chosen for use in this research as it has demonstrated both construct validity and high test-retest reliability and seems to be an appropriate measure of vocational indecision. The CDS yields
six scores: a "decidedness" score, a total indecision score, and four factor scores.

**Ability Level**

The ACT composite score was obtained from student records and used as a measure of ability. ACT math and English subtests scores were also obtained. Students also reported their high school and college grade point averages which were used as measures of earned achievement. ACT scores were available for 154 (77%) of the 201 Ss studied.

**Procedures**

Students who wished to participate in this research signed up for the experiment and were tested in groups ranging from 25 to 50 students. Packets containing instructions to the Ss and all instruments in the order described above were passed out to each S. The opportunity to find out more about the experiment was offered and the E explained the procedure by which Ss could obtain the results of the questionnaires. The Ss then filled out the questionnaires and upon completion could leave the experiment.

**Hypotheses**

Based upon the remaining confusion in the reviewed literature concerning vocational indecision the following hypotheses were formulated for this study.

**Hypothesis 1:** Vocational indecision varies as a function of fear of success. Undecided students exhibit higher FOS than decided students.

**Hypothesis 2:** Vocational indecision varies as a function of locus of control. Undecided students are more external than decided students.
Hypothesis 3: Vocational indecision may be predicted from a student's level of fear of success and locus of control.

Hypothesis 4: Sex differences moderate the relationship between the predictor variables of fear of success and locus of control with vocational indecision.

Hypothesis 5: Ability level moderates the relationship between the predictors of fear of success and locus of control with vocational indecision.

Design and Analysis

The design of this study involved the examination of the relationships among the variables of vocational indecision, fear of success, and locus of control. In addition, these relationships were examined for both men and women and for both high and low ability students in order to investigate the possibility of a moderating effect of sex and/or ability on these relationships.

The operational definitions of the variables were: 1) vocational indecision -- score on the CDS, 2) fear of success -- score on the FOSS, 3) locus of control -- score on the I-E scale, and 4) ability -- composite ACT score. The operational definition of high and low groups on each of the variables was obtained by performing a sample median split on the sample scores on each variable. Scores at or above the median were placed in the high group; scores below the median were placed in the low group. Thus for the variables of vocational indecision, fear of success, locus of control, and ability groups of high and low students were formed in order to complete the following analyses.
The analyses employed to investigate the above relationships were conducted by computing Pearson product moment correlation coefficients, Student's t-tests, and multiple regression analyses.

In order to determine the bivariate relationships between the pairs of the variables of interest, Pearson product moment correlation coefficients (r) were obtained. The variables were all continuous variables, thus the r was an appropriate statistic.

Student's t-test comparisons were conducted to examine the between group differences of decided and undecided students, male and female students, external and internal students, high and low fear of success students, high and low ability students, and high ability internal and external students on the variables of interest.

Multiple regression analyses were performed using vocational indecision as the dependent variable. An overall total group multiple regression analysis was conducted with vocational indecision as the dependent variable and fear of success, locus of control, sex, and ability as predictor variables. Separate multiple regression analyses were conducted for both high and low ability students and for both male and female students. A set of multiple regression analyses examined the relationships among vocational indecision and fear of success, locus of control, and ability with both male and female high ability students and male and female low ability students. A final multiple regression analysis examined the predictive power of the aforementioned independent variables with the dependent variable of vocational decidedness.

The level of statistical significance of each correlation coefficient, t-test, and multiple regression analysis was determined and provided the basis for accepting or rejecting the hypothesis.
CHAPTER IV
RESULTS

The following chapter presents the results of the data analyses used in this study. Descriptions and results of each hypothesis tested are also reported. More specifically this chapter is divided into four sections. The first two sections present the results of the analyses investigating the relationships among the individual variables and the investigation of between group differences. The third section presents the results of the multiple regression analyses and the fourth section is a summary of the results of the study.

Descriptive Statistics and Bivariate Analyses

Table 1 presents the number of cases, means, medians, and standard deviations for the three instruments used in this study (Career Decision Scale, CDS; Fear of Success Scale, FOSS; Internal-External Scale, I-E), the questionnaire information of age, year in college, and high school and college grade point averages, and the ACT scores on the math and English subtests and the ACT composite score. As shown by the number of cases reported, ACT information was available for 154 students, 77% of the total group. As shown in Table 1, this particular sample, although 23% smaller than the originally tested group, had a mean ACT composite score equal to the national mean.
Table 1
Descriptive Statistics of Sample on Psychological Variables, Ability Measures, and Demographic Information

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Median</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decidedness</td>
<td>201</td>
<td>5.22</td>
<td>5.60</td>
<td>1.89</td>
</tr>
<tr>
<td>Indecision</td>
<td>201</td>
<td>29.15</td>
<td>27.86</td>
<td>9.68</td>
</tr>
<tr>
<td>Fear of Success</td>
<td>201</td>
<td>106.58</td>
<td>106.90</td>
<td>12.90</td>
</tr>
<tr>
<td>Locus of Control</td>
<td>201</td>
<td>11.90</td>
<td>11.52</td>
<td>4.15</td>
</tr>
<tr>
<td>Age</td>
<td>200</td>
<td>18.98</td>
<td>18.52</td>
<td>1.44</td>
</tr>
<tr>
<td>Year(^a)</td>
<td>201</td>
<td>1.26</td>
<td>1.11</td>
<td>0.62</td>
</tr>
<tr>
<td>College GPA</td>
<td>179</td>
<td>2.76</td>
<td>2.76</td>
<td>5.79</td>
</tr>
<tr>
<td>High School GPA</td>
<td>184</td>
<td>3.22</td>
<td>3.20</td>
<td>4.79</td>
</tr>
<tr>
<td>ACT English</td>
<td>154</td>
<td>18.89</td>
<td>19.42</td>
<td>4.63</td>
</tr>
<tr>
<td>ACT Math</td>
<td>154</td>
<td>19.43</td>
<td>20.39</td>
<td>7.07</td>
</tr>
<tr>
<td>ACT Composite</td>
<td>154</td>
<td>20.10(^b)</td>
<td>20.62</td>
<td>5.00</td>
</tr>
</tbody>
</table>

\(^a\)Year = 1 (Freshman), 2 (Sophomore), 3 (Junior), 4 (Senior), 5 (Other).

\(^b\)National mean on ACT composite equals 20, reported by Office of Admissions, Ohio State University.
As shown in Table 2, 48.8% of the total experimental group were male and 51.2% of this group were female. A total of 201 students participated in this research study.

Table 2
Description of Sample by Sex

<table>
<thead>
<tr>
<th></th>
<th>Frequency</th>
<th>Relative Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>98</td>
<td>48.8</td>
</tr>
<tr>
<td>Female</td>
<td>103</td>
<td>51.2</td>
</tr>
<tr>
<td>Totals</td>
<td>201</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Results pertaining to the relationships among the constructs of vocational indecision, degree of decidedness, fear of success, locus of control, and ability are presented in Table 3. The bivariate Pearson Product Moment correlation coefficients are presented for each pair of variables and the significance level of each r. A statistically significant and negative relationship was found between indecision and decidedness as measured by the CDS (p < .001). Of particular interest was the relationship between indecision, fear of success, and locus of control. High locus of control scores indicate an external locus of control whereas low locus of control scores indicate an internal orientation. As shown in Table 3, statistically significant positive relationships were found between both fear of success and locus of control with indecision which indicated that
indecision increases as does fear of success and an external locus of control. In contrast both fear of success and locus of control correlated negatively with decidedness. On the other hand, the relationship between ability and indecision was found to be statistically significant in a negative direction indicating that as ability increases indecision decreases, thus a brighter student is more likely to be vocationally decided in comparison to a less able student. Table 3 also contained data concerning the relationship between fear of success and locus of control which was found to be statistically significant in a positive direction. The positive relationship between fear of success and locus of control indicated that as fear of success increased an external locus of control was more likely to be exhibited.

Table 4 contained results pertaining to the relationships between earned college and high school grade point averages and English, math, and composite ACT scores. Pearson Product Moment correlation coefficients are listed for each pair compared. All the relationships were statistically significant and positive at the .001 level of significance.

T-Test Analyses

In order to test Hypothesis 1: (Vocational indecision varies as a function of fear of success. Undecided students exhibit higher fear of success than decided students) and Hypothesis 2: (Vocational indecision varies as a function of locus of control. Undecided students are more external than decided students), Student's t-tests were computed comparing decided and undecided students on the variables of interest. Results pertaining to these t-test group comparisons are
Table 3

Relationships Among Vocational Indecision, Decidedness, Fear of Success, Locus of Control, and Ability

<table>
<thead>
<tr>
<th>Variable</th>
<th>Decidedness</th>
<th>Indecision</th>
<th>FOS</th>
<th>LOC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indecision</td>
<td>-0.67</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.00)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FOS</td>
<td>-0.07</td>
<td>0.19</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.16)</td>
<td>(0.004)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LOC</td>
<td>-0.11</td>
<td>0.22</td>
<td>0.25</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.05)</td>
<td>(0.001)</td>
<td>(0.001)</td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>0.02</td>
<td>-0.19</td>
<td>-0.18</td>
<td>-0.01</td>
</tr>
<tr>
<td></td>
<td>(0.39)</td>
<td>(0.011)</td>
<td>(0.015)</td>
<td>(0.44)</td>
</tr>
</tbody>
</table>

Note. Pearson correlation coefficients are reported; significance levels reported in parentheses.

aAbility level was measured by the ACT composite score.
Table 4

Relationships Between Earned Grade Point Averages and ACT Scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>College GPA</th>
<th>High School GPA</th>
<th>ACT English</th>
<th>ACT Math</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School GPA</td>
<td>.44</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT English</td>
<td>.33</td>
<td>.42</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACT Math</td>
<td>.31</td>
<td>.44</td>
<td>.58</td>
<td></td>
</tr>
<tr>
<td>ACT Composite</td>
<td>.35</td>
<td>.45</td>
<td>.80</td>
<td>.85</td>
</tr>
</tbody>
</table>

Note. All correlations are statistically significant at p < .001.

contained in Table 5. As found in Table 5 the number of cases, means, standard deviations, t-values, degrees of freedom, and p-values for each test are presented. The two groups of decided and undecided students were formed by performing a median split of the scores obtained on the CDS. Scores below the median created the decided group whereas scores on or above the median were placed in the undecided group. As found in Table 5 the results of the Student's t-tests indicated a statistically significant difference between the mean scores of the decided and the undecided groups on both the variables of fear of success and locus of control. The undecided group scored significantly higher on the FOSS and the I-E scale than did the decided group at the .05 and .001 levels of significance respectively. Hypotheses 1 and 2 were therefore supported.

Table 5 also contained t-test comparisons of the decided and undecided groups on the three ACT scores (English, math and composite).
Table 5
T-Test Comparisons of Vocationally Undecided Students with Vocationally Decided Students

<table>
<thead>
<tr>
<th>Variable</th>
<th>Decided</th>
<th></th>
<th>Undecided</th>
<th></th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>Standard</td>
<td>N</td>
<td>Mean</td>
<td>Standard</td>
<td></td>
</tr>
<tr>
<td>Fear of Success</td>
<td>98</td>
<td>104.8</td>
<td>14.0</td>
<td>103</td>
<td>108.3</td>
<td>11.56</td>
<td>-1.9</td>
</tr>
<tr>
<td>Locus of Control</td>
<td>98</td>
<td>10.7</td>
<td>4.0</td>
<td>103</td>
<td>13.1</td>
<td>3.94</td>
<td>-4.2</td>
</tr>
<tr>
<td>ACT Math</td>
<td>75</td>
<td>20.6</td>
<td>6.5</td>
<td>79</td>
<td>18.3</td>
<td>7.42</td>
<td>2.1</td>
</tr>
<tr>
<td>ACT English</td>
<td>75</td>
<td>19.2</td>
<td>4.3</td>
<td>79</td>
<td>18.6</td>
<td>4.96</td>
<td>0.8</td>
</tr>
<tr>
<td>ACT Composite</td>
<td>75</td>
<td>20.8</td>
<td>4.7</td>
<td>79</td>
<td>19.4</td>
<td>5.23</td>
<td>1.8</td>
</tr>
<tr>
<td>Sex</td>
<td>98</td>
<td>1.4</td>
<td>0.5</td>
<td>103</td>
<td>1.6</td>
<td>0.49</td>
<td>-2.1</td>
</tr>
</tbody>
</table>

Note. A median split of the scores on the Osipow Decision Scale was used to create the Decided and Undecided groups.

*a Separate variance estimates were used to calculate this t-test.
Statistically significant differences between group means were found on the math subtest. Decided students obtained significantly higher math subtest scores than did undecided students. A comparison of the sex of decided and undecided students indicated that significantly more women students are in the undecided group than are in the decided group.

In order to examine possible sex differences on the variables of importance t-test comparisons of male and female students were conducted. Table 6 presents the number of cases, means and standard deviations for each variable and the t-values, degrees of freedom and probability values for each t-test. As found in Table 6, the mean scores on the FOSS were statistically different at the .02 level of significance. As a group, women scored significantly higher than men on the fear of success measure. A second statistically significant difference between men and women was found in examining the mean ACT math subtest scores. Men scored statistically significantly higher on this subtest than did women at the .01 level. Other t-test comparisons which did not reach the .05 level but were within .01 - .02 of this criterion level of significance were indecision, locus of control, and ACT composite score. The trend in the data indicated that women were more external, more undecided, and had lower ability scores than did men, although these differences were not statistically significant.

Results pertaining to an examination of locus of control are shown in Table 7. Internal and external locus of control groups were created using a median split of I-E scores. The number of cases, means, standard deviations, t-values, degrees of freedom, and p-values are presented. In comparing these two groups, statistically significant
Table 6
T-Test Comparisons of Male and Female Subjects on Psychological and Ability Measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>Male</th>
<th>Female</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>Decidedness</td>
<td>98</td>
<td>5.3</td>
<td>1.8</td>
<td>103</td>
<td>5.2</td>
</tr>
<tr>
<td>Indecision</td>
<td>98</td>
<td>27.9</td>
<td>9.6</td>
<td>103</td>
<td>30.4</td>
</tr>
<tr>
<td>Fear of Success</td>
<td>98</td>
<td>104.4</td>
<td>11.8</td>
<td>103</td>
<td>108.6</td>
</tr>
<tr>
<td>Locus of Control</td>
<td>98</td>
<td>11.4</td>
<td>4.1</td>
<td>103</td>
<td>12.4</td>
</tr>
<tr>
<td>ACT Math</td>
<td>71</td>
<td>21.1</td>
<td>7.1</td>
<td>83</td>
<td>18.0</td>
</tr>
<tr>
<td>ACT English</td>
<td>71</td>
<td>18.5</td>
<td>4.4</td>
<td>83</td>
<td>19.3</td>
</tr>
<tr>
<td>ACT Composite</td>
<td>71</td>
<td>20.9</td>
<td>4.9</td>
<td>83</td>
<td>19.4</td>
</tr>
</tbody>
</table>

Note. Ability measures included ACT scores on the Math and English subtests and the ACT composite score.
mean differences were found on the variables of indecision and fear of success both at the .01 level of significance. These results indicated that externals were more vocationally undecided and more fearful of success than were internals which gives additional support for Hypothesis 2 which stated that undecided students are more external than decided students. No significant differences were found for the sex of an internal versus an external although slightly more women were external than were men. The ability measure of ACT composite scores were also not significantly different for the two groups.

Table 8 presents the number of cases, means, and standard deviations for each variable and the t-values, degrees of freedom, and p-values for each t-test in the comparison of high and low fear of success groups. The high and low fear of success groups were created using a median split of the FOSS scores. As found in Table 8, the results of the t-test comparison indicated a significant difference between the mean scores on locus of control (p < .001). High fear of success persons were more external than low fear of success persons. A statistically significant sex difference was also found (p < .03). Women were more fearful of success than were men. No significant mean difference was noted in comparing the high and low fear of success groups on the level of vocational indecision.

An examination of ability is presented in Table 9 which contains the number of cases, means, and standard deviations for each variable and the t-values, degrees of freedom, and p-values for each t-test. A median split technique determined assignment to a high or low ability group using the ACT composite score. As shown in Table 9, a
Table 7
T-Test Comparisons of Internal Versus External Locus of Control Students

<table>
<thead>
<tr>
<th>Variable</th>
<th>Internal</th>
<th></th>
<th>External</th>
<th></th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>N</td>
<td>Mean</td>
<td>Standard Deviation</td>
<td></td>
</tr>
<tr>
<td>Fear of Success</td>
<td>100</td>
<td>104.3</td>
<td>14.1</td>
<td>101</td>
<td>108.8</td>
<td>11.2</td>
<td>-2.49&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Indecision</td>
<td>100</td>
<td>27.4</td>
<td>10.1</td>
<td>101</td>
<td>30.9</td>
<td>9.0</td>
<td>-2.63</td>
</tr>
<tr>
<td>ACT Composite</td>
<td>71</td>
<td>20.0</td>
<td>5.0</td>
<td>83</td>
<td>20.2</td>
<td>5.1</td>
<td>-0.14</td>
</tr>
<tr>
<td>Sex</td>
<td>100</td>
<td>1.5</td>
<td>0.5</td>
<td>101</td>
<td>1.6</td>
<td>0.5</td>
<td>-1.77</td>
</tr>
</tbody>
</table>

Note. A median split of the scores on Rotter's I-E Scale was used to create the Internal and External groups.

<sup>a</sup>Separate variance estimates were used to calculate this t-test.
Table 8
T-Test Comparisons of High and Low Fear of Success Students on the Level of Indecision, Locus of Control and Subject Sex

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>N</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indecision</td>
<td>104</td>
<td>30.2</td>
<td>10.2</td>
<td>97</td>
<td>28.0</td>
<td>9.0</td>
<td>-1.7</td>
<td>199</td>
<td>0.10</td>
</tr>
<tr>
<td>Locus of Control</td>
<td>104</td>
<td>12.6</td>
<td>4.00</td>
<td>97</td>
<td>11.1</td>
<td>4.2</td>
<td>-2.7</td>
<td>199</td>
<td>0.01</td>
</tr>
<tr>
<td>Sex</td>
<td>104</td>
<td>1.6</td>
<td>0.49</td>
<td>97</td>
<td>1.4</td>
<td>0.5</td>
<td>-2.2</td>
<td>199</td>
<td>0.03</td>
</tr>
</tbody>
</table>

Note. A median split of the FOSS scores was used to create the high and low fear of success groups.
statistically significant difference was found between high and low ability on the fear of success measure. High ability persons were less fearful of success than low ability persons ($p < .04$). The results of the t-test comparing the two ability groups on indecision revealed a statistically significant mean difference. Low ability students were found to be more vocationally undecided than were high ability students. No significant differences were found between the high and low ability groups on the I-E scale. An examination of the CDS factor (see Chapter III for definitions of factors) revealed statistically significant differences between the two ability groups on Factor 1: Need for structure and Factor 3: Approach-approach. Low ability students were found to exhibit higher mean levels of both of these factors which indicated the low ability persons have more anxiety about making an educational/vocational decision and report an approach-approach situation in which two or more alternatives appear equally attractive than do high ability students.

Table 10 presents the number of cases, means, standard deviations of each variable and the t-values, degrees of freedom, and p-values of the t-test comparisons of high ability internals and externals. As found in Table 10, the results of the t-tests indicated a statistically significant difference between mean scores on the CDS levels of decidedness ($p < .05$) and indecision ($p < .01$) and on two CDS factors: a) Need for structure and b) Choice conflict. These data suggested that high ability externals are less decided, more undecided, more in need of structure and confidence concerning an educational/vocational decision and experience more conflict concerning making a career choice.
Table 9

T-Test Comparisons of High and Low Ability Students on
Indecision, Fear of Success, Locus of Control, and
Career Decision Scale Factors of Need for Structure and Multipotentiality

<table>
<thead>
<tr>
<th>Variable</th>
<th>Low Ability</th>
<th></th>
<th>High Ability</th>
<th></th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>N</td>
<td>Mean</td>
<td>Standard Deviation</td>
<td></td>
</tr>
<tr>
<td>Indecision</td>
<td>67</td>
<td>31.4</td>
<td>10.1</td>
<td>87</td>
<td>27.9</td>
<td>9.1</td>
<td>2.29</td>
</tr>
<tr>
<td>Fear of Success</td>
<td>67</td>
<td>109.4</td>
<td>13.7</td>
<td>87</td>
<td>104.5</td>
<td>12.5</td>
<td>2.33</td>
</tr>
<tr>
<td>Locus of Control</td>
<td>67</td>
<td>11.9</td>
<td>4.2</td>
<td>87</td>
<td>12.0</td>
<td>3.9</td>
<td>-.07</td>
</tr>
<tr>
<td>Need for Structure</td>
<td>67</td>
<td>15.3</td>
<td>6.4</td>
<td>87</td>
<td>13.5</td>
<td>5.3</td>
<td>1.93</td>
</tr>
<tr>
<td>Multipotentiality</td>
<td>67</td>
<td>3.9</td>
<td>1.9</td>
<td>87</td>
<td>3.2</td>
<td>1.4</td>
<td>2.5a</td>
</tr>
</tbody>
</table>

Note. Career Decision Scale factors are defined in Chapter III.

*aSeparate variance estimates were used to calculate this t-test.*
than do high ability internals. No significant difference was found between mean scores on the FOSS.

**Multiple Regression Analyses**

Results pertaining to the multiple regression analyses used to predict vocational indecision are presented in Tables 11-14. Tables 11-14 present the multiple regression coefficient, $R^2$, degrees of freedom and the F test of significance for the obtained $R$. Also contained in Tables 11-14 were the independent variables included in the multiple regression equations, the unstandardized regression coefficients for each of these independent variables, and the degrees of freedom and F test of the beta weights for each of these independent variables.

As shown in Table 11, the multiple regression analysis used to predict the criterion of vocational indecision for the entire sample included the independent variables of ability (defined as the ACT composite score), fear of success, locus of control and sex of the student. The multiple regression coefficient of .32 was statistically significant at the .001 level of probability. This $R$ accounted for 10% of the variance in predicting vocational indecision. Of the independent variables, ability and locus of control were found to significantly contribute to the multiple regression relationship at the .05 and .01 levels of significance respectively. Thus, Table 11 indicated that a multiple regression equation predicting vocational indecision accounting for 10% of the variation in vocational indecision was explained by ability, fear of success, locus of control, and sex wherein ability and locus of control reflect statistically significant weights in the
Table 10
T-Test Comparisons of External Versus Internal High Ability Students on Level of Decidedness, Indecision, Fear of Success and Career Decision Scale Factors

<table>
<thead>
<tr>
<th>Variable</th>
<th>Internal</th>
<th></th>
<th></th>
<th>External</th>
<th></th>
<th></th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>Mean</td>
<td>Standard Deviation</td>
<td>N</td>
<td>Mean</td>
<td>Standard Deviation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decidedness</td>
<td>41</td>
<td>5.7</td>
<td>2.1</td>
<td>46</td>
<td>4.9</td>
<td>1.9</td>
<td>-1.93</td>
<td>85</td>
<td>0.05</td>
</tr>
<tr>
<td>Indecision</td>
<td>41</td>
<td>25.4</td>
<td>9.4</td>
<td>46</td>
<td>30.1</td>
<td>8.4</td>
<td>2.48</td>
<td>85</td>
<td>0.01</td>
</tr>
<tr>
<td>Fear of Success</td>
<td>41</td>
<td>104.7</td>
<td>14.5</td>
<td>46</td>
<td>104.2</td>
<td>10.6</td>
<td>-0.16</td>
<td>85</td>
<td>0.87</td>
</tr>
<tr>
<td>Factor: Need for Structure</td>
<td>41</td>
<td>12.2</td>
<td>5.2</td>
<td>46</td>
<td>14.6</td>
<td>5.2</td>
<td>2.14</td>
<td>85</td>
<td>0.03</td>
</tr>
<tr>
<td>Factor: Choice Conflict</td>
<td>41</td>
<td>5.5</td>
<td>2.4</td>
<td>46</td>
<td>6.5</td>
<td>1.9</td>
<td>2.20</td>
<td>85</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Note. Definitions of Career Decision Scale factors available in Chapter III.
equation. These findings in part confirm Hypothesis 3 which stated that vocational indecision could be predicted from a student's level of fear of success and locus of control. According to the results contained in Table 11, vocational indecision was predicted by locus of control, fear of success, ability and the individual student's sex with the majority of the variation in indecision accounted for by ability and locus of control. Hypothesis 3 was thus only partially confirmed.

Results pertaining to the separate multiple regression analyses for male and female students are presented in Table 12. As shown in Table 12, the multiple regression coefficient predicting vocational indecision for males was .28 which was not statistically significant. The only independent variable reaching the .05 level of significance indicating a significant amount of contribution in explaining the 8% of variance in vocational indecision for male students was locus of control. On the other hand, the multiple regression coefficient explaining vocational indecision for women students was .40, statistically significant at the .001 level of significance. The independent variables of fear of success and locus of control contributed significantly ($p < .025$ and $p < .05$ respectively) to the 16% of explained variation in vocational indecision for women. The obtained sex differences found in the multiple regression coefficients predicting vocational indecision confirmed Hypothesis 4 which stated that sex differences moderate the relationship between the predictor variables of fear of success and locus of control with the criterion variable of vocational indecision. For women the relationship is much stronger than for men and this relationship is substantially contributed to by both fear of success
Table 11
Multiple Regression Analysis of Vocational
Indecision as a Function of Ability\textsuperscript{a}, Fear of Success,
Locus of Control and Sex

<table>
<thead>
<tr>
<th>Variables</th>
<th>$b$</th>
<th>$df$</th>
<th>$F$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ability</td>
<td>-.31</td>
<td>1, 149</td>
<td>4.09*</td>
</tr>
<tr>
<td>Fear of Success</td>
<td>.64</td>
<td>1, 149</td>
<td>1.18</td>
</tr>
<tr>
<td>Locus of Control</td>
<td>.53</td>
<td>1, 149</td>
<td>7.63***</td>
</tr>
<tr>
<td>Sex</td>
<td>.91</td>
<td>1, 149</td>
<td>0.35</td>
</tr>
</tbody>
</table>

\* Statistically significant at $p < .05$ level.

\*** Statistically significant at $p < .001$ level.

\textsuperscript{a} Ability was measured by ACT composite scores.

\textsuperscript{b} Unstandardized regression coefficients reported.
Table 12
Multiple Regression Analysis of Vocational Indecision as a Function of Ability, Fear of Success and Locus of Control by Sex

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>df</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ability</strong></td>
<td>-.18</td>
<td>1, 67</td>
<td>2.17</td>
</tr>
<tr>
<td><strong>Fear of Success</strong></td>
<td>-.14</td>
<td>1, 67</td>
<td>1.39</td>
</tr>
<tr>
<td><strong>Locus of Control</strong></td>
<td>.25</td>
<td>1, 67</td>
<td>4.17*</td>
</tr>
</tbody>
</table>

* p < .05
** p < .025
*** p < .001
and locus of control. Sex, thus, moderated the relationship among the variables of locus of control, fear of success, and vocational indecision.

Table 13 presents data pertaining to an examination of the multiple regression analysis for high and low ability students. As shown in Table 13, the multiple regression coefficient of vocational indecision as a function of the independent variables of ability, fear of success, locus of control, and sex was found to be .40 for high ability students and .21 for low ability students. The multiple regression relationship for high ability persons was statistically significant at the .001 level whereas the multiple regression coefficient of .21 for low ability students was not statistically significant. The independent variable of locus of control accounted for the majority of the 16% variance in vocational indecision for high ability subjects.

Hypothesis 5: Ability level moderates the relationship between the predictors of fear of success and locus of control with vocational indecision; was confirmed as the data shown in Table 13 demonstrated. Examination of these data revealed a strong and significant predictive relationship existed for high ability students and was very weak for low ability students. Ability, thus, moderated the relationship among fear of success, locus of control, and vocational indecision.

A multiple regression analysis of high and low ability males and females is presented in Table 14. As shown in Table 14, the multiple regression coefficients for high ability males and females were .40 and .51 respectively. Twenty-six percent of the variation in vocational indecision for high ability females was accounted for in this
Table 13
Multiple Regression Analysis of Vocational Indecision as a Function of Ability, Fear of Success, Locus of Control, and Sex for High and Low Ability Students

<table>
<thead>
<tr>
<th></th>
<th>High Ability</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Multiple R</td>
<td>R$^2$</td>
<td>df</td>
<td>F</td>
</tr>
<tr>
<td></td>
<td>.40</td>
<td>.16</td>
<td>4, 82</td>
<td>3.78***</td>
</tr>
<tr>
<td>Variables</td>
<td>B</td>
<td>df</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>-.34</td>
<td>1, 82</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>Fear of Success</td>
<td>.65</td>
<td>1, 82</td>
<td>.77</td>
<td></td>
</tr>
<tr>
<td>Locus of Control</td>
<td>.87</td>
<td>1, 82</td>
<td>13.43***</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>.90</td>
<td>1, 82</td>
<td>.23</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Low Ability</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Multiple R</td>
<td>R$^2$</td>
<td>df</td>
<td>F</td>
</tr>
<tr>
<td></td>
<td>.21</td>
<td>.04</td>
<td>4, 62</td>
<td>.68</td>
</tr>
<tr>
<td>Variables</td>
<td>B</td>
<td>df</td>
<td>F</td>
<td></td>
</tr>
<tr>
<td>Ability</td>
<td>-.07</td>
<td>1, 62</td>
<td>.32</td>
<td></td>
</tr>
<tr>
<td>Fear of Success</td>
<td>.08</td>
<td>1, 62</td>
<td>.38</td>
<td></td>
</tr>
<tr>
<td>Locus of Control</td>
<td>.04</td>
<td>1, 62</td>
<td>.11</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>.11</td>
<td>1, 62</td>
<td>.68</td>
<td></td>
</tr>
</tbody>
</table>

Note. High and low ability groups were obtained by a median split of the ACT composite scores. The median and mean of this sample equals the national mean on ACT composite scores.

*** p < .001
multiple regression analysis, significant at the .001 level. The independent variables of fear of success and locus of control both significantly contributed to this multiple regression coefficient. Although the multiple regression coefficient of .40 accounted for 16% of the variation in vocational indecision for males, it did not reach statistical significance. The independent variable of locus of control significantly contributed to this multiple regression coefficient of .40 at the .025 level. Table 14 also presented the results of the multiple regression analysis for low ability males and females. Multiple regression coefficients of .22 and .23 were found for males and females respectively both of which were not significant. None of the independent variables reached statistical significance.

In order to contrast the predictive power of the variables of ability, fear of success, locus of control, and sex in explaining vocational indecision, a multiple regression analysis of these same variables predicting the criterion of vocational decidedness was computed. The results of this analysis are presented in Table 15. As shown in Table 15, a multiple regression coefficient of .19 was found which explained 3% of the variance in vocational decidedness; in contrast to a multiple regression coefficient of .32 explaining 10% of the variance in vocational indecision (refer to Table 11).

Figures 1–4 further examined the hypotheses concerning the relationships among fear of success, locus of control, and vocational indecision as moderated by sex and ability. As shown in Figure 1, high and low ability female students were compared as to the level of vocational indecision given a high or low degree of fear of success.
Table 14

Multiple Regression Analysis of Vocational Indecision
in High and Low Ability Males and Females
as a Function of Fear of Success, Locus of Control and Ability

<table>
<thead>
<tr>
<th></th>
<th>Females</th>
<th></th>
<th>Males</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Multiple R</td>
<td>$R^2$</td>
<td>df</td>
<td>F</td>
</tr>
<tr>
<td>High Ability</td>
<td>.51</td>
<td>.26</td>
<td>3, 40</td>
<td>4.58***</td>
</tr>
<tr>
<td></td>
<td>Variables</td>
<td>B</td>
<td>df</td>
<td>F</td>
</tr>
<tr>
<td>Fear of Success</td>
<td>.24</td>
<td>1, 40</td>
<td>5.40**</td>
<td>Fear of Success</td>
</tr>
<tr>
<td>Locus of Control</td>
<td>1.00</td>
<td>1, 40</td>
<td>8.50***</td>
<td>Locus of Control</td>
</tr>
<tr>
<td>Ability</td>
<td>.28</td>
<td>1, 40</td>
<td>.00</td>
<td>Ability</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Females</th>
<th></th>
<th>Males</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Multiple R</td>
<td>$R^2$</td>
<td>df</td>
<td>F</td>
</tr>
<tr>
<td>Low Ability</td>
<td>.23</td>
<td>.05</td>
<td>3, 35</td>
<td>.67</td>
</tr>
<tr>
<td></td>
<td>Variables</td>
<td>B</td>
<td>df</td>
<td>F</td>
</tr>
<tr>
<td>Fear of Success</td>
<td>.14</td>
<td>3, 35</td>
<td>1.41</td>
<td>Fear of Success</td>
</tr>
<tr>
<td>Locus of Control</td>
<td>.22</td>
<td>3, 35</td>
<td>.34</td>
<td>Locus of Control</td>
</tr>
<tr>
<td>Ability</td>
<td>-.34</td>
<td>3, 35</td>
<td>.00</td>
<td>Ability</td>
</tr>
</tbody>
</table>

**p < .025
***p < .001
Table 15

Multiple Regression Analysis of Vocational Decidedness as a Function of Ability, Fear of Success, Locus of Control and Sex

<table>
<thead>
<tr>
<th>Total Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple R</td>
</tr>
<tr>
<td>.19</td>
</tr>
</tbody>
</table>

Variables

| Ability | B  | df | F  |
| -.62  | 1, 149 | .04 |
| Fear of Success | -.12 | 1, 149 | 1.06 |
| Locus of Control | -.70 | 1, 149 | 3.31 |
| Sex | .26 | 1, 149 | .68 |

As seen in Figure 1, an interaction involving high ability and fear of success was demonstrated. Vocational indecision increased dramatically for high ability women depending on the level of fear of success whereas no such effect occurred with low ability women. Ability level moderated the relationship between fear of success and vocational indecision for women. Ability interacted with fear of success to increase the level of vocational indecision as fear of success increases for high ability women. This relationship does not exist for low ability women as the level of vocational indecision remains relatively stable.

Figure 2 presents the same comparison for high and low ability male students. As is shown in Figure 2, although the level of
Figure 1

Mean Comparisons of High and Low Ability

Women on Fear of Success and Vocational Indecision
vocational indecision tends to decrease for both high and low ability groups of men as fear of success increases, no such interactive effect was evident.

On the other hand, Figure 3 presents the relationships between high and low ability men as a function of locus of control in relationship to vocational indecision. As demonstrated in Figure 3, a striking interactive effect has occurred. As locus of control changes from external to internal for high ability men, vocational indecision decreases. No such relationship was found for low ability men as the level of vocational indecision remained relatively constant.

This same comparison was conducted for female students and the results are presented in Figure 4. As shown in Figure 4, career indecision decreases for both high and low ability women who have an internal locus of control but no interactive effect was found.

Summary

In summary, the main findings presented above indicated that the two personality constructs of locus of control and fear of success were significant correlates of vocational indecision. More specifically, an external locus of control and high fear of success were positively related to vocational indecision. Ability level, on the other hand, was found to relate to vocational indecision in a negative direction indicating that as ability increased indecision decreased.

The results also suggested that a vocationally undecided student was more external and more fearful of success than a decided student. Significant sex differences suggested that female students were more fearful of success and performed less well on the ACT math subtest
Figure 2

Mean Comparisons of High and Low Ability Men on

Fear of Success and Vocational Indecision
MALES

____ Low Ability (29 - 28)
--- High Ability (30 - 25)

Figure 3
Mean Comparisons of High and Low Ability Men on Locus of Control and Vocational Indecision
Figure 4

Mean Comparisons of High and Low Ability Women on Locus of Control and Vocational Indecision
than did male students.

The major findings concerning the predictive relationship among vocational indecision, fear of success, and locus of control revealed that the relationship was moderated by both the sex of the student and his/her ability level. Fear of success for high ability women and locus of control for high ability men moderated the level of vocational indecision expressed by these students.

In conclusion, vocational indecision was found to be a function of fear of success and locus of control as moderated by sex and ability level.
CHAPTER V

CONCLUSIONS, LIMITATIONS, AND IMPLICATIONS

The purpose of this chapter is to discuss the results of the data analyses in relationship to the experimental hypotheses of the study; to suggest limitations in the current study and implications for implementation of these findings and for future research; and to draw conclusions from the study.

Summary of Results and Experimental Hypotheses

The purposes of the present study were to examine the extent to which locus of control and fear of success were related to vocational indecision and the moderating effects of sex and ability on these relationships.

Results indicated that vocational indecision, fear of success and locus of control are positively related; thus, as vocational indecision increases so also does the level of fear of success and an external locus of control. In addition, it was hypothesized that fear of success and locus of control were personality variables which would differentiate between decided and undecided college students. More specifically, Hypothesis 1 stated that vocational indecision varies as a function of fear of success and that undecided students exhibit higher levels of fear of success than decided students. Hypothesis 2 stated that vocational indecision varies as a function of locus of control.
with undecided students being more external than decided students.

The results supported both of these hypotheses as undecided students were significantly more fearful of success and more external than decided students. Additional support for accepting these two variables as important factors in vocational indecision was provided by results found in comparing internal and external students and high and low fear of success students. External students were found to be more vocationally undecided and more fearful of success than were internal students and students high in fear of success were found to be more external than students low in fear of success. These results suggested that an undecided student may be characterized as viewing the environmental consequences of his/her behavior as controlled by fate, luck, or chance. It may be suggested that such an orientation toward the effects of one's impact on the environment (a lack of control position) might well lead to a status of vocational indecision as the vocational decision making behaviors a person needs to engage in to make a decision are instrumental activities by which a person acts on his/her environment. An external individual may well deem such instrumental activities such as occupational information-seeking, learning more about one's interests and aptitudes, etc. as a waste of time and energy in that the end result of a vocational choice is largely affected by fate, luck, or chance. Although the above discussion implies a causal relationship, a conclusion of causality is not supported by the data reported in this study, thus such a discussion must be taken with caution as to its causal implications.
The finding that the undecided student was more external than the decided student corroborates earlier evidence found by Cellini (1978) who described the external undecided student as characterized by "low achievement motivation, lack of information-seeking behavior, unwillingness to attempt to control the environment, belief in the forces of chance in determining the direction of one's life" (p. 50-51). Regardless of causal implications, an undecided student exhibiting the above characteristics is involved in beliefs, attitudes, and behaviors which are detrimental to the process of vocational decision making and might well be helped in counseling by learning how to establish a more internal locus of control and how to accept some of the responsibility for the consequences of his/her behaviors.

A finding of this study in direct contrast with Cellini's work was the result that female students scored significantly higher than male students on the indecision score of the Career Decision Scale (CDS). Cellini found the exact reverse and suggested that males have traditionally had more careers open to them than females and the breadth of choice may have contributed to vocational indecision. This finding is most interesting given that the same population of Ss were used in both studies although one year separated the data collections. It could be that females scored significantly higher than males in this study as more and more fields become open to women which previously had been unavailable and thus, for women, the breadth of vocational choice is widening and may contribute to vocational indecision.

Another explanation may involve some other findings of this study. Females scored significantly higher than males on the Fear of Success.
Scale indicating a higher level of fear of success. It could be that as more women are fearful of success they are also more undecided in that to select a major and/or vocational choice implies a situation wherein success or failure will result. If a woman is anxious about the possibility of success in a major or vocational choice one method of delaying the situation would be to remain undecided.

In and of itself the finding of sex differences in fear of success helps to clarify some of the recent confusion in the fear of success literature concerning the incidence of fear of success. Women evidenced significantly greater levels of fear of success than did men. Although women scored higher than did men on the FOSS, the total difference in mean scores between the two groups was only 4.2 on a scale which has a range of scores from 27 to 189. The actual significance of only a four point difference may not reflect true sex differences as does the statistical level of significance.

In returning to a discussion of distinguishable differences between decided and undecided students, the undecided student was also characterized as more fearful of success. This finding suggests that in accordance with theoretical notions and previous research concerning fear of success, the undecided student may be characterized as a person who holds an expectancy that negative consequences will be engendered upon personal success. This finding assists in expanding the recent research on the relationship between fear of success and career development. Esposito (1977) described women who were fearful of success as more likely to have lower career aspirations and to choose more traditional occupations than women low in fear of success.
The present study suggested that both men and women who are vocationally undecided may also be fearful of success and thus may be characterized as exhibiting the qualities described by Esposito. Such a description would make theoretical sense in that if a person is anxious about en-gendering negative consequences following success s/he might choose to enter fields wherein possible success might be more role-appropriate and, thus, less noticed.

A third finding which suggested an additional variable as an important factor in differentiating the vocationally decided from the vocationally undecided student was the significant relationship found between ability level and vocational indecision. This finding suggested that the undecided student may be less academically able than the decided student. In partial support of this relationship, undecided students were found to have statistically significant lower ACT math scores than decided students. This finding is of interest in relationship to Baird's (1967) finding that the vocationally undecided male student had a lower interest in science. Although Baird did not find ability differences between decided and undecided students, it could be that the lack of interest in science is, for some undecided students interacting with ability level, particularly in the science and math areas. Thus, it may be important to measure ability not as a composite whole but to divide it into subscales which may indicate certain areas of deficiency that relate with indecision but are not found in investigations which analyze ability from a composite standpoint. No significant differences were found in this study for the ACT composite score as would have been suggested by the significant correlational
relationship between ability and vocational indecision.

Further examination of the relationship between ability and vocational indecision resulted in significant differences between high and low ability students on several variables. Low ability students were significantly more vocationally undecided, more in need of structure and confidence concerning a vocational decision and possibly more anxious about vocational decision making, more vocationally undecided because of an approach-approach dilemma, and more fearful of success than were high ability students. Two of these findings were of particular interest as they seem to contradict previous research.

First of all, Horner (1968) proposed that fear of success was a more salient variable for high ability persons as these people could actually achieve the success which they feared. The results of the present study suggest that high levels of fear of success were more prevalent for low ability students. One explanation of this finding could be that ability in this study as measured by ACT composite scores was more of an achievement measure of a student's performance in various academic areas. It could be therefore that actual achievement has confounded this measure. Horner described the high fear of success person as one who would suffer performance decrements in competitive situations. If the ACT testing situation (which is conducted in large mixed sex groups) was a situation in which persons felt competition, according to the theory, the performance of persons high in fear of success would decrease. Although this argument is highly speculative, it could be that the measure of ability confounded by actual achievement washed out any effects of fear of success as persons high in fear
of success would have lower ACT composite scores so as not to flirt with being an academic success.

A second finding of interest was that low ability persons were significantly higher on the CDS factor of multipotentiality than were high ability persons. This was a surprising finding because it might be suggested that high ability persons who have the skills to do well in several occupational fields might be undecided because of having to choose among attractive options. An explanation of this finding may relate to the conclusion offered by Osipow and Gold (1967) that students with inconsistent career patterns have chosen a second choice that represents less risk of success as these students may be unsure about their academic ability to succeed in their first choice. The data found in this study might be explained from a similar viewpoint. It therefore could be that a student who is less academically able may experience more uncertainty and indecision because s/he is not sure of his/her ability to succeed in various fields and thus has not made any specific choice although has considered several alternatives in order to have some options to fall back on if more preferred choices are not realistic alternatives.

A further investigation of the effect of ability was conducted by examining differences between high ability internal and external students. The results were similar to the findings of differences between internals and externals although additional evidence concerning the CDS factors was found. High ability externals were found to be significantly higher on two CDS factors which suggested that these students were more in need of structure and confidence about vocational decision making
and were experiencing more conflict concerning their career choice. It could be argued that persons who do not feel any control over their lives may well be seeking outside structure to aid in their vocational decision making. Another interesting thought might involve the aspect of external pressure which these students may be experiencing concerning making a choice, such as parental or peer pressure to make a decision. If a person was in need of some external structure to aid in decision making while at the same time was experiencing external pressure to decide, the result may well be that this student would experience some conflict concerning making a career choice.

The analyses conducted in this study which attempted to predict vocational indecision yielded some interesting findings. Hypothesis 3 stated that vocational indecision could be predicted from a student's level of fear of success and locus of control. Partial support for this hypothesis was found. In a total sample multiple regression analysis attempting to predict vocational indecision from the independent variables of locus of control, fear of success, sex and ability only locus of control and ability significantly contributed to the predictive equation. Although statistically significant, the multiple regression analysis accounted for only 10% of the variance in vocational indecision. One explanation for accounting for such a small percentage of the variance in vocational indecision may have been that the relationships investigated were in fact moderated by other factors. In fact, examining possible interactive and/or moderating relationships with other variables and vocational indecision increased the power of attempting to predict vocational indecision.
Using the same predictor variables, a regression analysis predicting vocational decidedness accounted for only 3% of the variance in decidedness. Thus, it seems that the variables cogent in predicting vocational indecision are not particularly important in the prediction of having made a vocational choice.

An investigation of factors which may influence the prediction of vocational indecision indicated that sex and ability level did serve as moderators of the relationship among fear of success, locus of control, and vocational indecision.

The predictive power of locus and fear of success were shown to change depending on the sex and the ability of the student. Ability level seemed to be a first order moderator in that neither fear of success nor locus of control were predictive of vocational indecision for low ability persons regardless of their sex. More specifically, the results suggested that locus of control was an effective predictor of vocational indecision for high ability male students whereas fear of success was found as an effective predictor of vocational indecision in high ability female students. Results therefore indicated that Hypothesis 4 which stated that sex differences would moderate the relationship between the predictor variables of fear of success and locus of control with vocational indecision was supported. The amount of variance accounted for in vocational indecision by a regression analysis using fear of success, locus of control, and ability as predictors was 16% for female students and 8% for male students. Only the independent variable of locus of control significantly contributed in the analysis for men whereas both fear of success and locus of
control contributed significantly in predicting vocational indecision in women.

These results may bear some relationship to the research on fear of success which supports Horner's (1968) original hypothesis that fear of success is far more prevalent in females than in males. Although the incidence of fear of success was found to be significantly higher for women than men, the issue of prevalence may not be the essential conclusion given these results. The effect and/or impact of fear of success on the vocational decision making process seems a more poignant issue and as these data indicated fear of success was an important contributor toward vocational indecision in women. In examining possible interactions among sex and fear of success in relation to vocational indecision additional support for this result was found. Fear of success was a significant predictor of vocational indecision for high ability women; this relationship was not found for low ability women or men indicating that although the incidence of fear of success may be greater for women in general the impact of fear of success on vocational behavior may be greatest and most important for high ability women. This result offers additional clarification to the fear of success literature in suggesting that incidence of fear of success may well not be a viable issue in contrast to the behavioral effect of this personality construct. The behavioral effect of fear of success for high ability women was the most conclusive evidence; thus, high ability, high fear of success women were more likely to be vocationally undecided and the effect of high fear of success interacted with ability to produce greater vocational indecision (see Figure 1).
Further support of Hypothesis 4 was indicated by the results of an examination of the interaction between locus of control and ability on the level of vocational indecision. Results indicated that locus of control was an effective predictor of vocational indecision. An interesting finding was the interaction between ability and locus of control for men in which the level of vocational indecision for low ability men regardless of their locus of control remained fairly constant whereas for high ability men an external locus of control was strongly predictive of vocational indecision (see Figure 3). Thus, for both sexes one of the two personality variables in an interaction with ability was strongly predictive of vocational indecision. Given that fear of success was found to be a salient variable of vocational indecision in women and locus of control held the same relationship for men, the fourth hypothesis concerning sex differences was strongly supported.

Results indicated strong support for Hypothesis 5 which stated that ability level would moderate the relationship among fear of success, locus of control and vocational indecision. The results of regression analyses attempting to predict vocational indecision indicated that 16% of the variance in vocational indecision could be predicted for high ability students whereas only 4% was accounted for in low ability students. Additional support for the moderating relationship of ability with fear of success and locus of control and the effect of these interactions on vocational indecision was discussed above and in summary would indicate that ability level is a particularly important variable in determining the effect of either fear of success or locus of control on a student's level of vocational
Summary. In conclusion, it appears that for high ability students the variables of fear of success and locus of control, as moderated by sex, are cogent predictors of vocational indecision; these relationships were not found for low ability students which indicates that some variables other than locus of control and fear of success may be contributing toward vocational indecision in these low ability persons. It could be that as Ashby, Wall and Osipow (1966) suggested ability may play an important role for persons who are tentatively decided or that for low ability persons the reality of their more limited career opportunities in contrast to high ability students is a cogent factor in their indecision. Further research is necessary to investigate viable predictors of vocational indecision in low ability persons.

In summary, results suggested that both sex and ability moderated the relationship between vocational indecision and locus of control and fear of success. Different predictive equations of vocational indecision were found for different combinations of variables.

Limitations and Implications

An obvious limitation of the present study concerns the generalizability of these findings to other populations. The sample employed in this study contained a majority of first-year college students with a mean age of 19 years all of whom attended the same university. In order to have more predictive power of vocational indecision other samples of persons should be investigated, although the examination of college students per se seems a reasonable endeavor given that the vocationally undecided student is a major consumer of university
counseling centers (Harmon, 1973).

A second possible limitation concerns the generalizability of findings on the I-E scale. Rotter (1966) reported mean scores of 8.15 for males and 8.42 for females. The overall I-E mean for this sample was 11.9 (11.4 for males and 12.2 for females); thus, the sample in the present study seems to be more externally oriented than the samples studied by Rotter. In examining this same student population, Cellini (1978) found similar results as the present study (mean I-E scores for males and females respectively were 11.3 and 11.7). He suggested that the results could be due to studying an atypical sample of undergraduates. On the other hand, it seems likely that as the results in the present study closely agree with those found by Cellini that Introductory Psychology students have become more externally oriented over the years.

A third major limitation concerns the measurement of fear of success. As was reported the internal consistency of the FOSS was only .56 which indicated that interpretations of the results using this scale must be made with some caution given the relative lack of homogeneity among the FOSS items.

The measure of ability used in this study also requires that some caution should be taken in interpreting the results given that ACT scores measure academic achievement. Thus, the findings which indicated differences between high and low ability persons may reflect differences between students who have high versus low achievement scores.
A final limitation concerns the practical utility of the findings. As the results have shown the greatest predictive power of vocational indecision was found for high ability students. In comparison with low ability persons, students with high ability are less likely to be vocationally undecided. Given that the population seeking help with vocational concerns is one which is more vocationally undecided and that low ability students evidence more vocational indecision than high ability students these findings may have practical relevance for the minority of students seeking vocational help.

Further research is necessary in order to more thoroughly investigate the limitations of this study by examining other subject populations, by investigating a more reliable measurement of fear of success, and by searching for predictors of vocational indecision in low ability students.

In summarizing the implications of the present research one question seems paramount: Does this study aid in furthering the theoretical conceptualization of vocational indecision? Results indicated that factors do differentiate between the decided and undecided students, thus offering evidence to argue Baird's (1967) conclusion that no such differences exist. Of theoretical interest, one of the most pertinent findings was that vocational indecision is a multidimensional construct and should be studied from a multi-factor viewpoint. The examination of moderator variables in vocational research seems evident in order to discern causal and/or related factors in the genesis of vocational indecision. Thus, the results of this study suggest that a theoretical explanation of vocational indecision must embrace a multi-factor approach.
which allows for a heterogeneous population of vocationally undecided students. By employing a multi-variable approach in the investigation of vocational indecision implications for practical interventions can be made which would argue for different vocational interventions for different vocationally undecided students. More specifically, an intervention for a high ability external male student may employ different types of interventions or a different emphasis in helping him become a more active agent in his future than would an intervention aimed at helping a high ability female student who was anxious about the consequences of succeeding in various occupational fields. Vocational interventions would therefore be developed with the particular student in mind.

Conclusions

The purpose of this study was to examine the relationships among vocational indecision, fear of success, and locus of control as moderated by sex and ability. The following tentative conclusions can be drawn from this study:

1. There is a significant relationship between vocational indecision and fear of success. Vocational indecision is associated with higher levels of fear of success.

2. There is a significant relationship between vocational indecision and locus of control. Vocational indecision is associated with an external locus of control.

3. Vocational indecision can be predicted from a student's level of fear of success and locus of control as this relationship is moderated by the student's sex and ability level.
In summary, an attempt to investigate vocational indecision from a multi-factor, multidimensional framework has yielded a better understanding of the theoretical nature of vocational indecision and hopefully will have implications on the practice of counseling the vocationally undecided college student.
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