

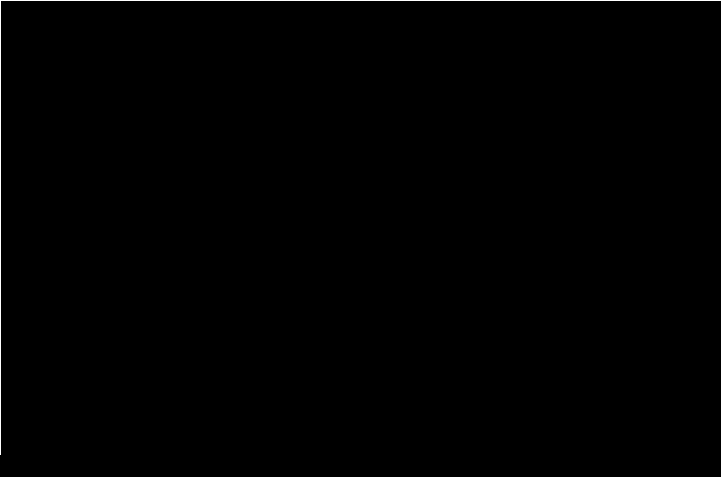
SELECTED FACTORS RELATED TO LOCUS OF CONTROL
AMONG A SAMPLE OF HIGH SCHOOL STUDENTS

by

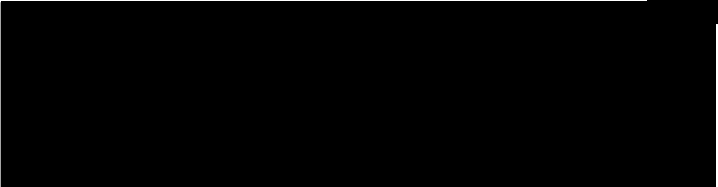
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A THESIS

Approved:



Approved:



SELECTED FACTORS RELATED TO LOCUS OF CONTROL
AMONG A SAMPLE OF HIGH SCHOOL STUDENTS

A Thesis
Presented to
the Faculty of the Sociology Department
Sam Houston State University

In Partial Fulfillment
of the Requirements for the Degree
Master of Arts

by
Mary Sue Miller
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ABSTRACT

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The purpose of this research was to examine the relationship between locus of control, the dependent variable, and selected independent factors that were classified as demographic and social/behavioral factors. The demographic factors were sex, socio-economic status, grade level, average grades, family size, and length of residence. The social/behavioral factors were social participation, drinking behavior, and smoking behavior.

The data examined were collected in May, 1976. The high school selected for this study was located in a small homogeneous community approximately seventy-five miles north of Houston, Texas. A stratified random sampling technique was employed which resulted in a total sample of forty-seven students (27 males and 20 females) drawn from the entire student enrollment of ninth, tenth, eleventh, and twelfth grades. The study sample was all Caucasian which was representative of the school population.

The dependent variable, locus of control, was measured by the Nowicki-Strickland Locus of Control Scale for Children and was examined for relationships between

each independent factor. The scale was scored in the external direction (high scores: external locus of control). Relationships between locus of control and each independent factor were examined for the total sample (N=47), for the male group (N=27), and for the female group (N=20), as sex was believed to be a moderating variable. Of the demographic factors examined, only two reached the designated .05 level of statistical significance. Socio-economic status was found to be negatively correlated with locus of control scores for the male group; and family size was found to be positively correlated with locus of control scores in the female group. None of the other factors, either demographic or social/behavioral, were found to be statistically significant.

Walter H. Bennett, Ph.D.
Supervising Professor

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M.S.M.

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CHAPTER I

SELECTED FACTORS RELATED TO LOCUS OF CONTROL AMONG A SAMPLE OF HIGH SCHOOL STUDENTS

Introduction and Statement of the Problem

The study of human social behavior has been examined from several psychological and sociological orientations. One orientation that considers both psychological and sociological factors of human behavior is social learning theory. Extensive work in this area has been done by Rotter (1954) and Rotter, Chance and Phares (1972). A concept derived from their work is locus of control. This construct is perceived as a personality dimension which has been correlated with many different factors in examining a diversity of human behaviors. A fuller explication of the meaning of locus of control and a brief explanation of the theory from which it was derived will be given in the Theoretical Orientation section of this thesis. However, at this time, it may be useful to include the common reference point in the exploration of the concept. More explicitly, the concept is defined as:

When a reinforcement is perceived by the subject as following some action of his own but not being entirely contingent upon his action, then, in our culture, it is typically perceived as the result of luck, chance, fate, as under the control of powerful others, or as unpredictable because of the great complexity of the forces surrounding him.

When the event is interpreted in this way by an individual, we have labeled this a belief in external control. If the person perceives that the event is contingent upon his own behavior or his own relatively permanent characteristics, we have termed this a belief in internal control [Rotter, 1966, p. 1].

Further research efforts (Rotter, Seeman & Liverant, 1962; Rotter, Liverant & Crowne, 1961; Seeman & Evans, 1962) resulted in what is now the Rotter I-E scale. The Rotter I-E scale is more commonly used with adult subjects, and consequently limited to the study of adult behaviors.

More recently, however, this concept has been extended to empirical studies involving children of elementary school age and high school students (Crandall, Katkovsky & Crandall, 1965; Nowicki & Strickland, 1973). The recent research by Nowicki and Strickland (1973), found certain factors to be related to locus of control scores among both elementary and high school students. The normative data for the Nowicki-Strickland Locus of Control Scale for Children (Nowicki & Strickland, 1973), indicated that subjects become more internal with age. Nowicki and Duke (1974), observed the same trend. The Nowicki and Duke research for the Non-College as Well as College Adults Scale indicated a mean of 13.06 for their ninth grade group, compared with a mean of 9.06 for the college sample and a mean of 10.96 for the community sample. This suggests that for high school students

a belief in internal-external control (low scores: internals, high scores: externals) may be sufficiently formed to be predictive of some behaviors, such as academic performance, but may not as yet be solidified enough to be highly correlated with adult behaviors.

The problem to which this thesis gives attention then, is: What variables are related to locus of control in high school students?

The purpose of this study is to examine the relationship between the dependent variable (locus of control) and selected socio-cultural variables (independent variables) in a high school sample. The factors to be examined are classified as demographic factors and social/behavioral factors. The demographic factors are sex, socio-economic status, grade level, average grades, family size, and length of residence. The social/behavioral factors are social participation, drinking behavior, and smoking behavior.

Significance of the Problem

As noted above, there appears to be a need for additional research involving factors related to locus of control among high school age groups. Accordingly, this study should provide additional insight into the relationship between locus of control and selected socio-cultural factors among high school students. Additionally,

the findings of this research will afford geographic comparisons with studies conducted in other areas, including studies utilizing more heterogeneous samples.

Theoretical Orientation

As acknowledged in the previous section, the concept of internal-external control of reinforcement developed out of social learning theory (Rotter, 1954; Rotter, Chance & Phares, 1972). There are four classes of variables in social learning theory: behaviors, expectancies, reinforcements, and psychological situations. In its most basic form the general formula for behavior is that the potential for a behavior to occur in any specific psychological situation is a function of the expectancy that the behavior will lead to a particular reinforcement in that situation and the value of that reinforcement. The relationship among these variables as they are used to predict goal-directed behavior can be stated by the following formula:

$$BP_{x,s_1,R_a} = f(E_{x,R_a,s_1} \ \& \ RV_{a,s_1})$$

This formula is read, "The potential for behavior x to occur, in situation 1 in relation to reinforcement a, is a function of the expectancy of the occurrence of reinforcement a, following behavior x in situation 1, and the value of reinforcement a in situation 1" [Rotter,

Chance, & Phares, 1972, p. 14].

For a clear understanding, certain terms need to be defined as they pertain to social learning theory, and ultimately an understanding of the meaning of locus of control. These include:

Reinforcement: is anything that has an effect on the occurrence, direction, or kind of behavior (Rotter, 1954, p. 107).

Value of Reinforcement: the degree of preference for any reinforcement to occur if the possibilities of their occurring were all equal (Rotter, 1954, p. 107).

Expectancy: is the probability held by the individual that a particular reinforcement will occur as a function of a specific behavior on his part in a specific situation or situations (Rotter, 1954, p. 107).

Situations: The psychological situation must be considered. This accounts for the individual who views situations subjectively as similar even though they are objectively dissimilar (Phares, 1976, p. 17).

In addition to the specific expectancy mentioned above, there are generalized expectancies. That is, individuals may generalize from past related situations to new or novel situations in terms of expectancy of success or failure based on past experiences they view as similar.

A special and important example of such a

generalized expectancy is the degree to which people believe in internal or external control of reinforcement -- whether they believe that what happens to them is dependent upon their own behavior and is thus controllable by their actions or is contingent upon luck, powerful others, etc. Locus of control as a problem solving expectancy is incorporated in the following expression:

$$Es_1 = \frac{f(E' \ \& \ GER \ \& \ GEps_1 \ \& \ GEps_2, \dots, GEps_n)}{f(Ns_1)}$$

This expression signifies that an expectancy in situation 1 is determined by the expectancy that a given reinforcement will occur based on previous experience in the same situation (E'), experiences generalized from other related situations (GER), and a variety of problem-solving generalized expectancies ($GEps_1, \dots, GEps_n$) divided by some function of the number of experiences the individual has had in the specific situation (Ns_1) (Rotter, Chance, & Phares, 1972, p. 41).

Locus of control, then, is a personality dimension that can be quantified and used in conjunction with other social learning theory variables to predict human social behavior.

Review of the Literature

It is beyond the scope of this research to present all the studies available, as at least 600 studies on a variety of behaviors have been reported at this date (Rotter, 1975). Most of these studies are not pertinent to this research. However, this researcher has attempted to review the available literature that focuses on the specific variables included in this study as thoroughly as possible. The review of the literature is organized in accord with the two major groups of factors to be examined in this study. The first group of factors are the demographic factors which include sex, socio-economic status, grade level, average grades, family size, and length of residence. The second major group of factors are the social/behavioral factors which include social participation, drinking behavior, and smoking behavior.

In some instances, the studies reviewed contain more than one of the factors to be examined in this research. In these cases, the literature is reviewed relative to all variables examined that are pertinent to this study, which deviates somewhat from the order of classification, but avoids repetitive naming of studies. Therefore, the demographic and social/behavioral factors named above are reviewed separately when possible, but

some overlapping could not be avoided.

Demographic Factors

Phares [1976, p. 44] notes that:

sex as an isolated variable related to locus of control is seldom reported, but it is clear that sex often moderates the relationship between internal-external scores and other behaviors.

In the experimental group for the construction of the Nowicki-Strickland Locus of Control Scale for Children (CNS-IE) it was determined that subjects become more internal with increasing age. The sample consisted of 1,017 elementary and high school students drawn from four schools bordering a large metropolitan school system. The study sample was Caucasian and ranged from the third grade through the twelfth grade levels. Findings involving the experimental group indicated some sex differences as related to socio-economic status and academic achievement. Those findings in the experimental group indicated negative correlations between locus of control scores and achievement with most of the significant correlations in the male group. Female achievement did not seem to be predictable from the CNS-IE scale, except for a slight trend towards a significant relationship for females in the fifth and seventh grades. As to socio-economic relationships, all correlations were negative. Most of the significant correlations were found in the male group. These authors tentatively concluded

that internality is related to higher occupation levels of parents, especially for males as assessed by the CNS-IE (Nowicki & Strickland, 1973). Ludwigsen and Rollins (1971) found subjects of lower socio-economic status to be more external than high socio-economic subjects in a sixth grade sample as assessed by the CNS-IE. Brown and Strickland (1972) found that cumulative grade point average was positively correlated with internality in males for college seniors, but not for females.

Internality was found to be correlated with extracurricular activities and popularity (determined by number of votes for class president) for females in both elementary and secondary schools (Nowicki, 1971). In a later study conducted by Nowicki and Segal (1974), in a sample of twelfth grade students, internality was found to be positively related to higher academic achievement in males, and to a greater number of extracurricular activities for females. These authors expressed the feeling that locus of control may be a more pure predictor of academic achievement for males, while for females expressed locus of control may be a more pure predictor of social behavior. It was also found that internality in females was positively correlated with higher grade point average, but not to higher standardized achievement test scores. This finding was

consistent with the assumption that expressed locus of control is a better predictor of social rather than academic achievement behavior among females. Grade point average is much more of a subjective measure of achievement than is a standardized test score. It probably reflects more than the assimilation of knowledge as a measure of achievement, it probably is affected by the confounding effects of social classroom behavior. Thus, internal females may obtain higher grade point averages not because they learn more, but because they are aware of social behaviors that lead to higher grade point averages.

The Intellectual Achievement Responsibility Questionnaire (IAR) was developed by Crandall, et al. (1965) to assess children's belief in reinforcement responsibility exclusively in intellectual-academic situations. Grades three, four, five, six, eight, ten and twelve were used in the collection of the normative data. The scale contains a Total I (total internal or self-responsibility score), and two subscale scores. The subscale score I+ is the score for internal responsibility for success, and the subscale score I- is the score for internal responsibility for failures. The scale is scored in the internal direction for the total I, I+, and I-. That is, higher scores indicate a higher degree of internal or self-responsibility for total

scores (I) and for responsibility for success (I+) and for responsibility for failures (I-) in the academic situation.

The results of the Crandall, et al. study indicated that the IAR best predicted standardized achievement-test performances for young girls and older boys. Its most consistent prediction was between IAR scores and report-card grades.

No significant differences were found between sexes in internality, although internal scores increased slightly with age. From the sixth grade upward, girls' scores were somewhat higher than for boys, but not significantly. However, there was a significant decrease in I+ scores for boys between the tenth and twelfth grades. Boys in the twelfth grade decreased sharply on the I+ score and had a lower overall mean than for the tenth grade. The authors speculated that this decrease in internal responsibility for the success subscale could have been due to impending graduation from high school, and that anxieties over their vocational or college careers and uncertainty about their ability to control future events in the "big, broad world out there" resulted in differential responses to the success and failure items. An alternative explanation for the differences in the subscale scores was that the older boys may have developed an increased sense

of modesty, not present at earlier ages, which caused them to respond to the questionnaire as though they were not responsible for their intellectual-academic good fortune.

In addition to the academic variables, IAR scores were examined for relationships to socio-economic status and family size. Socio-economic status was found to be inconsistently related to IAR scores. A significant relationship was not found between family size and IAR scores for younger children, but was significant in the older subjects. Total I and I- scores were significantly more prevalent among children from small families. "Small families" consisted of families with one or two children, and "large families" consisted of families with more than two children. The "older" students were those subjects in the sixth, eighth, tenth, and twelfth grades.

Social/Behavioral Factors

The social participation factor has been reviewed in the studies conducted by Nowicki (1971), and Nowicki and Segal (1974), and for the sake of brevity are not repeated here.

Drinking behavior and locus of control was examined by Jessor, Graves, Hanson, and Jessor (1968) in both an adult and high school sample. The study conducted by

Jessor, et. al. failed to show a significant relationship between internal-external scores and his quantity-frequency index of drinking behavior for the high school group. The high school sample consisted of forty-two Anglos (22 males and 20 females), thirty-six Spanish, and eleven Indian students. The findings in the study were compared across ethnic lines. The authors stated that failure to find a significant difference may have been due to using a modified version of the Rotter I-E scale which may not have been valid. For the Anglos, which approximates the sample in the present study, the quantity-frequency scores were positively related to I-E scores, but failed to reach the .05 level of significance. Goss and Morosko (1970) investigated internal-external control in a sample of 262 alcoholic outpatients. They found their alcoholic population scored in the internal direction on Rotter's I-E scale. Naditch (1975) administered Rotter's I-E scale to 517 men in the early weeks of army basic training. Included in the questionnaire were nineteen items concerned with drinking behavior. The locus of control scores obtained showed a clear pattern of increased externality with increased drinking. Subjects were divided into five categories as indicated by their responses to the drinking items. Mean internal-external scores for the five categories were: 8.00 for abstainers; 9.71 for light drinkers;

9.57 for moderate drinkers; 10.57 for heavy drinkers; and 11.00 for problem drinkers. Naditch stated that although the subjects in the Goss and Morosko study may have been more seriously alcoholic than the problem drinkers in his sample, there was no reason to believe that a move from problem drinking to more serious alcoholism would result in a sharp shift of locus of control in the internal direction.

The literature reviewed revealed only two studies concerning smoking behavior, both of which involved young adult subjects. Straits and Sechrest (1963) found smokers to be more "chance oriented" (a characteristic of externality) in two samples of male college students. James, Woodruff and Werner (1965) found smokers to be significantly more external than non-smokers. The locus of control measure in this study was the James Test of Internal-External Control (James, 1957). The sample consisted of 272 male and female undergraduate students at Northern Illinois University.

Formulation of Hypotheses

The available literature has suggested possible relationships between locus of control and the independent factors to be examined in this study. However, the literature reviewed indicated several inconsistencies. Moreover, this researcher was unable to find studies

concerning two of the factors to be examined in this study (average grades as reported by subject and length of residence). Therefore, it appears helpful to briefly summarize prior research as an aid in stating expected relationships between locus of control and the independent variables in this study. The reader should note that the following summary of prior research does not distinguish between the different scales used to measure locus of control and does not describe scales or operational definitions as used by the various researchers. While these differences as to scales and measurements used to determine relationships between locus of control and the factors examined are extremely important, the primary focus here is on the findings as a basis for speculation as to the relationships between locus of control and the selected demographic and social/behavioral factors in the present study. The following is a brief summary statement drawn from prior research for each independent variable to be examined in the present study.

Sex -- Prior research has indicated no significant differences between sexes and locus of control, although it was shown to be a moderating variable.

Socio-economic status -- Research examining socio-economic status and locus of control indicated a negative correlation for males in one study, for both males and

females in another study, and findings were inconsistent in a third study reviewed.

Grade level -- The literature was fairly consistent as to the relationship between grade level and internal locus of control. Studies reviewed found internal locus of control increased as grade level increased, with the exception of the twelfth grade boys in the Crandall, et. al. (1965) study.

Average grades -- This researcher was unable to find any research available on average grades as reported by subject.¹ Variables that are comparable were reviewed. Those variables were grade point average, report-card grades, and standardized achievement test scores. The research was inconsistent for grade point average for males and females. Also for standardized achievement test scores. Report-card grades were positively related to internality for males and females.

Family size -- Prior research found a negative relationship between family size and locus of control scores.

Length of residence -- This researcher was unable to find any literature that had examined the relationship between length of residence and locus of control.

¹Average grades were used rather than grade point average because the subjects were to remain anonymous which eliminated the use of official school records.

Social participation -- Social participation was found to be positively related to internal locus of control for females in the studies reviewed.

Drinking behavior -- The literature was inconsistent as to the relationship between drinking behavior and locus of control. One study found no significant relationship, and the other two studies reviewed had divergent views. That is, one study found an alcoholic sample scored in the internal direction, and the other study found increased drinking to be positively related to external locus of control.

Smoking behavior -- Prior research indicated a positive relationship between smoking and external locus of control.

Several of the suggested relationships in prior research were inconsistent and inconclusive and do not lend themselves readily to formulations of relationships in the form of the null hypothesis. Accordingly, speculations as to the relationships between locus of control and the independent variables in this study will be in the form of a statement regarding each variable which indicates the direction of the expected relationships.

The expected relationships between locus of control and the independent factors selected for examination in the present study are as follows:

- Hypothesis I: There will not be a significant difference between males and females as related to locus of control.
- Hypothesis II: Socio-economic status will be positively correlated with external locus of control for males, but not for females.
- Hypothesis III: There will not be a significant difference between grade level and locus of control scores but locus of control scores will decrease as grade level increases.
- Hypothesis IV: Higher average grades will be positively correlated with internal locus of control.
- Hypothesis V: There will be a positive correlation between family size and external locus of control.
- Hypothesis VI: Longer lengths of residence will be positively correlated with external locus of control.
- Hypothesis VII: There will be a positive correlation between external locus of control and lower scores for church attendance, church-related activities, school-related activities, other activities, and for total social participation.
- Hypothesis VIII: There will be a positive correlation between quantity-frequency index scores of alcohol use and external locus of control.
- Hypothesis IX: There will be a positive correlation between smoking and external locus of control.

Summary

This chapter has been concerned with the problem of locus of control and related factors for high school age groups. The problem is that little is known about what factors are related to locus of control for this age group. Therefore, the immediate purpose of this

research is to examine the relationships between locus of control and selected demographic and social/behavioral factors in a sample of high school students.

The significance of the problem lies in the fact that there is a lack of research as to factors related to locus of control in the high school age group. Thus, the results of this study will contribute to the existing body of knowledge, and hopefully suggest factors to be examined in future research.

Also, included in this chapter was the theoretical orientation from which the concept of locus of control was derived, a review of the available literature pertinent to this study, and a statement of the expected relationships between locus of control and the selected demographic and social/behavioral factors to be examined in this research.

CHAPTER II

RESEARCH PROCEDURES AND PLAN OF ANALYSIS

Introduction

Contained in this chapter is a description of the methodological procedures employed in this research. The first section, the source of data, includes a description of the population, the sample, and the interview session. The second section, the plan of analysis, includes a description of the dependent variable and the independent variables, an explanation of the construction of indexes used, and a discussion of the statistical techniques employed.

Source of Data

A small homogeneous community approximately seventy-five miles north of Houston, Texas, was selected for the study. Permission to conduct the study in the high school was given by the school administrator. Subjects were to participate on a voluntary basis. The data were collected on May 3, 1976, by three graduate students and two undergraduate students from Sam Houston State University.

The Population

The population consisted of all ninth, tenth,

eleventh and twelfth grade students. The school selected was the only high school in the community and had a total enrollment of 1,058 students. The population of the community was 5,882 according to the census data for 1970. The school district included a nearby community, which, according to school records made the population of the school district 16,000.

The Sample

A stratified random sampling technique was employed to yield approximately 20 percent of the total population. The initial selection resulted in a total of 174 students. These students were given written permission slips to take home and have signed by a parent or guardian. Of the 174 permission slips, forty-seven were returned and constituted the final sample. A breakdown by grades show all four grades represented. The sample was all Caucasian and was fairly evenly divided as to sex, with twenty-seven males and twenty females.² The final sample was smaller than desired, and is not representative of the county in which the school was located or the entire state. See Table 1 for a breakdown of the sample according to grade and sex.

²Eleven students were dropped because they failed to return their permission slips on the day of the interview. Re-scheduling was not feasible as school ended the following week. No follow-up was conducted as to why a majority of the students initially selected in the sample failed to return their permission slips.

TABLE 1
Sample by Grade Level and Sex

Grade Level	Male (N)	Female (N)	Total (N)
Ninth Grade	9	5	14
Tenth Grade	10	10	20
Eleventh Grade	4	3	7
Twelfth Grade	4	2	6
TOTAL	27	20	47

The Interview Session

Prior to the day of the interview, the principal had given all teachers instructions to dismiss those students from class who had permission slips and have them report to the cafeteria where the interview session was conducted. The permission slips had assured the parents and students that they would remain anonymous and that all information was confidential. The permission slips also informed the parents and students that the study was independent of the school district and the school would not have access to any information other than the final results which could be obtained by request.

The students were seated at large cafeteria tables with as much distance between students as space permitted. The research assistants were posted at various stations to help students individually if they

needed help. The following general instructions were given to the assembled study sample:

1. Do not put your name on your questionnaire. No one will know how you have answered the questions, and by having you remain anonymous you can feel free to answer the questions as honestly as you can.
2. Do not be concerned with how you think someone else may be answering the questions. Answer them as they apply to you.
3. If you need help, or an additional pencil, raise your hand and an assistant will come to you and help you.
4. Do not talk or discuss the questions with each other. If you need help, ask an assistant.
5. Each question will be read to you and you fill in your answer. Do not go on ahead. Answer each question only after it has been read to you.

The administration of the schedule took approximately forty-five minutes. There were some distractions (bell for class changes and workers in the cafeteria preparing for lunch) and the students were asked if it was interfering in any way. They replied that they were not being distracted and from the researcher's observation did not appear to be distracted. However, there was no way to know if their concentration had been disturbed.

Plan of Analysis

The Dependent Variable

The dependent variable, locus of control, was

measured by the Nowicki-Strickland Locus of Control Scale for Children (CNS-IE). The scale contains forty items that are answered Yes or No. Certain items are given a score of 1 if answered Yes and others are given a score of 1 if answered No. It is possible for scores to range from 0 to 40. The scale is scored by summing all Yes/No answers that have a value of 1. The Yes items are Items 1, 3, 5, 7, 8, 10, 11, 12, 14, 16, 17, 18, 19, 21, 23, 24, 27, 29, 31, 33, 35, 36, 37, and 39. The No items are Items 2, 4, 6, 9, 13, 15, 20, 22, 25, 26, 28, 30, 32, 34, 38, and 40 (Nowicki & Strickland, 1973).

The scale is scored in the external direction. That is, scores above the mean will be considered "externals" and those below the mean will be considered "internals" for the purpose of analysis in this research.

The CNS-IE scale was chosen because the items are easy to read and can be administered to large groups. Other scales were considered, but were deemed inappropriate to this research. The Rotter I-E scale (Rotter, 1966), is more commonly used with adults; and the Intellectual Achievement Responsibility Questionnaire (Crandall, et. al., 1965), was constructed for specific use in academic situations. The CNS-IE can be used to indicate relationships among a variety of social factors. The following is the CNS-IE scale as it was included in the

schedule (Journal of Consulting and Clinical Psychology, 1973, 40, p. 43).

1. Do you believe that most problems will solve themselves if you just don't fool with them?
2. Do you believe that you can stop yourself from catching a cold?
3. Are some kids just born lucky?
4. Most of the time do you feel that getting good grades means a great deal to you?
5. Are you often blamed for things that just aren't your fault?
6. Do you believe that if somebody studies hard enough he or she can pass any subject?
7. Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?
8. Do you feel that if things start out well in the morning that it's going to be a good day no matter what you do?
9. Do you feel that most of the time parents listen to what their children have to say?
10. Do you believe that wishing can make good things happen?
11. When you get punished does it usually seem it's for no good reason at all?
12. Most of the time do you find it hard to change a friend's (mind) opinion?
13. Do you think that cheering more than luck helps a team to win?
14. Do you feel that it's nearly impossible to change your parent's mind about anything?
15. Do you believe that your parents should allow you to make most of your own decisions?

CNS-IE, Continued

16. Do you feel that when you do something wrong there's little you can do to make it right?
17. Do you believe that most kids are just born good at sports?
18. Are most of the other kids your age stronger than you are?
19. Do you feel that one of the best ways to handle most problems is just not to think about them?
20. Do you feel that you have a lot of choice in deciding who your friends are?
21. If you find a four leaf clover do you believe that it might bring you good luck?
22. Do you often feel that whether you do your homework has much to do with what kind of grades you get?
23. Do you feel that when a kid your age decides to hit you, there's little you can do to stop him or her?
24. Have you ever had a good luck charm?
25. Do you believe that whether or not people like you depends on how you act?
26. Will your parents usually help you if you ask them to?
27. Have you felt that when people were mean to you it was usually for no reason at all?
28. Most of the time, do you feel that you can change what might happen tomorrow by what you do today?
29. Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them?
30. Do you think that kids can get their own way if they just keep trying?
31. Most of the time do you find it useless to try to get your own way at home?

CNS-IE, Continued

32. Do you feel that when good things happen they happen because of hard work?
33. Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters?
34. Do you feel that it's easy to get friends to do what you want them to?
35. Do you usually feel that you have little to say about what you get to eat at home?
36. Do you feel that when someone doesn't like you there's little you can do about it?
37. Do you usually feel that it's almost useless to try in school because most other children are just plain smarter than you are?
38. Are you the kind of person who believes that planning ahead makes things turn out better?
39. Most of the time, do you feel that you have little to say about what your family decides to do?
40. Do you think it's better to be smart than to be lucky?

The Independent Variables

To reiterate, the purpose of this study is to examine the relationship between locus of control and certain factors believed to be independent of, but associated with, locus of control in a group of high school students. Those variables selected are classified as demographic and social/behavioral factors. The demographic factors are sex, socio-economic status, grade level, average grades, family size, and length of

residence. The social/behavioral factors are social participation, drinking behavior, and smoking behavior.

Construction of Indexes

Socio-economic Status Index. The socio-economic status was determined by using the Warner, Meeker, Eell's Revised Scale for Rating Occupations (Miller, 1964, p. 100). The scale has seven hierarchial categories based on the prestige rating of the occupations. Subjects' responses were categorized according to prestige ratings as determined by the scale.

In operationalizing the socio-economic status of the parents in this study, questions pertaining to their job status were included in the schedule. The schedule asked respondent to state the occupation of the male head of household and the occupation of the female head of household. If there was no male head of household, respondent was asked to indicate "none." If the male head of household did not work, the respondent was asked to indicate "does not work." The same procedure was used for the female head of household. See Table 2 for a partial listing of occupations used in determining the rankings of specific occupations reported by respondents and how they were rated.

An index score of 0 was assigned to those who did not work or did not live in the home. The same rating

TABLE 2
Household Head Occupation Ranking

Category*	Occupational Categories	Rating	Index Rank
I	Professionals	1	7
	Proprietors and Managers	1	
	Businessmen	1	
	Clerks and kindred	1	
	Farmers	1	
II	Professionals	2	6
	Proprietors and Managers	2	
	Businessmen	2	
	Clerks and kindred	2	
	Farmers	2	
III	Professionals	3	5
	Proprietors and Managers	3	
	Businessmen	3	
	Clerks and kindred	3	
	Manual workers	3	
IV	Proprietors and Managers	4	4
	Clerks and kindred	4	
	Manual workers	4	
	Protective and service workers	4	
V	Proprietors and Managers	5	3
	Clerks and kindred	5	
	Manual workers	5	
	Protective and service workers	5	
	Farmers	5	
VI	Proprietors and Managers	6	2
	Manual workers	6	
	Protective and service workers	6	
	Farmers	6	
VII	Manual workers	7	1
	Protective and service workers	7	
	Farmers	7	

*For a complete list of occupations in each category, refer to Appendix.

index was used for both the male and female who were working and living in the home at the present time. It was reasoned that if both parents were employed, it would prevent less distortion of the socio-economic status to use the highest prestige rating, whether father or mother. Consequently, the scores on the index could range from 0 to 7. The lowest rating for socio-economic status would be 0 and the highest status would be 7. Obviously, the theoretical possibility of a score of 0 exemplifies a situation where neither parent works, or in a single head of household where occupations were not given. There were no scores in the upper socio-economic group. Accordingly, the median of 3 was used to place subjects in lower and middle class groupings. Index ranks 1, 2, and 3 were given a score of 0, which indicated lower class status, and index ranks 4, 5, and 6 were given a score of 1, which indicated middle class status.

Average Grades During This Past School Year

Index. This variable was operationalized by the question: "Average grades this past school year?" The response A was given an index score of 5, B a score of 4, C a score of 3, D a score of 2, and F a score of 1. Thus, the possible range of average grades could be from 1 to 5.

Family Size. This variable was operationalized by the question:

"How many persons live in your household at the present time?"

☐ One or both parents or step-parents
☐ Number of brothers (include half-brothers and step-brothers)
☐ Number of sisters (include half-sisters and step-sisters)
☐ Number of other relatives (aunts, uncles, grandparents, etc.)
☐ Number of persons not related
☐ Other, explain _____

The number reported was added to 1 to include the subject which yielded the total number of persons in the household at the present time.

Social Participation Index. The indexes constructed to determine the level of social participation of each subject was derived from questions on the schedule concerning three separate areas. Those areas were religious participation (church attendance and church-related activities), school-related activities, and other activities.

The question operationalizing the variable for church attendance was: "How many church services either as a member or non-member do you attend each month?" Index ratings for church attendance could range from 0 to any number depending on the number of services attended.

Church-related activities was included in the schedule as follows:

List all church-related activities you participate in such as youth groups, Sunday school, teaching Sunday school, ushering, choir, etc. and indicate the degree of activity.

<u>Name of Activity</u>	<u>Very Active</u>	<u>Sometimes Active</u>	<u>Seldom Active</u>
_____	_____	_____	_____

Several lines were provided for each respondent to list the activity and to indicate the degree of activity for that activity. The scores could range from 0 to any number, depending on the number of activities and the degree of participation. The degree of activity was given the following ratings: No activity 0, Seldom Active 1, Sometimes Active 2, and Very Active 3. The number of activities were summed, then multiplied by the sum of the degree of activity, which was the total score for church-related activities.

The question operationalizing school-related activities was included on the schedule as follows:

Please check all extracurricular activities outside regular class hours in which you participate that are school-related. Check all activities and indicate the degree of activity.

<u>Activity</u>	<u>Very Active</u>	<u>Sometimes Active</u>	<u>Seldom Active</u>
<u>Athletics</u>	___	___	___
<u>Band or orchestra</u>	___	___	___
<u>Choir or vocal</u>	___	___	___
<u>Dramatics</u>	___	___	___
<u>Debate</u>	___	___	___
<u>4-H</u>	___	___	___
<u>FFA</u>	___	___	___
<u>School paper</u>	___	___	___
<u>Annual</u>	___	___	___
<u>Student government</u>	___	___	___
<u>Pep squad or cheerleader</u>	___	___	___
<u>Other, explain _____</u>	___	___	___

The index rating was derived the same as in church-related activities. That is, the number of activities were summed, then multiplied by the degree of activity to give a total score for school-related activities. The scores on the index could range from 0 to any number depending on the number of activities and the degree of activity.

Other activities was operationalized by the following question on the schedule:

What other activities outside school and church do you participate in such as YMCA, Scouts, etc? Write in the name and indicate the degree of activity for each.

Name of Activity	Very Active	Sometimes Active	Seldom Active
_____	_____	_____	_____

Several lines were provided for a list of outside activities. The index rating and scoring was the same as in church-related activities and school-related activities. Thus, the total score for other activities could range from 0 to any number depending on the number of activities and the degree of activity.

The total score for social participation included the number of church services attended added to the sums for church-related activities, school-related activities, and other activities. Thus, the total score could range from 0 to any number depending on the sums of church attendance, church-related activities, school-related

activities, and other activities.

Drinking Behavior Index. This variable was operationalized by questions directed at the quantity and frequency of alcohol imbibed by the subject. The questions included in the schedule were the same as those of Jessor, et. al. (1968, p. 467 and 486), and were scored by his scoring guide. The questions pertaining to alcohol were as follows:

USE OF ALCOHOL: (During the past school year)

1. How often do you usually drink wine? (check one)
 - ☐ 1 or 2 times a day
 - ☐ about 3 or 4 times a week
 - ☐ about 1 or 2 times a week
 - ☐ about 1 or 2 times a month
 - ☐ at least 1 time a year
 - ☐ less than 1 time a year
 - ☐ never
2. When you drink wine, how much do you usually drink at one time? (check one)
 - ☐ a bottle or more
 - ☐ about half a bottle or about 5 glasses
 - ☐ 3 or 4 glasses
 - ☐ 1 or 2 glasses
 - ☐ less than 1 glass
 - ☐ never drink wine
3. How often do you usually drink beer? (check one)
 - ☐ 1 or 2 times a day
 - ☐ about 3 or 4 times a week
 - ☐ about 1 or 2 times a week
 - ☐ about 1 or 2 times a month
 - ☐ at least 1 time a year
 - ☐ less than 1 time a year
 - ☐ never
4. When you drink beer, how much do you usually have at one time? (check one)
 - ☐ 7 or more bottles
 - ☐ 5 or 6 bottles
 - ☐ 3 or 4 bottles
 - ☐ 1 or 2 bottles
 - ☐ less than 1 bottle
 - ☐ never drink beer

5. How often do you usually drink liquor?
(check one)
- ☐ 1 or 2 times a day
 - ☐ about 3 or 4 times a week
 - ☐ about 1 or 2 times a week
 - ☐ about 1 or 2 times a month
 - ☐ at least 1 time a year
 - ☐ less than 1 time a year
 - ☐ never
6. When you drink liquor, whether mixed or straight, how much do you usually drink at one time? (1 drink is approximately one shot glass) (check one)
- ☐ 7 or more drinks
 - ☐ 5 or 6 drinks
 - ☐ 3 or 4 drinks
 - ☐ 1 or 2 drinks
 - ☐ less than 1 drink
 - ☐ never drink liquor

Jessor's scoring guide for the frequency measures are as follows:

<u>Frequency</u>	<u>Value</u>
1 or 2 times a day	2.00
about 3 or 4 times a week	.50
about 1 or 2 times a week	.20
about 1 or 2 times a month	.05
at least 1 time a year	.01
less than 1 time a year	.00
never	.00

Jessor determined the quantity estimates of consumption for each beverage in terms of absolute alcohol (AA) content per ounces consumed. The following indicates the quantity of consumption and the absolute alcohol content for each beverage:

Wine		Beer		Liquor	
oz.	AA	oz.	AA	oz.	AA
30.0	4.50	96.0	3.84	12.00	5.40
18.0	2.70	66.0	2.64	8.25	3.71
14.0	2.10	42.0	1.68	5.25	2.36
6.0	.90	18.0	.72	2.25	1.01
2.0	.30	6.0	.24	.75	.34
0.0	.00	0.0	.00	0.00	.00

For each respondent, the AA values associated with his response for each beverage constitute his quantity scores.

The quantity-frequency index for a beverage is the product of the frequency value and quantity score for that beverage. The total quantity-frequency index is the sum of the products taken across beverages. The total score is a measure of absolute alcohol consumed per day.

Techniques of Analysis

The statistical techniques employed are the Pearson product-moment correlation coefficient for continuous variables, and a point-biserial correlation coefficient for cases where an independent variable is dichotomous. A one-way analysis of variance will be computed to determine differences between males and females on locus of control scores. The alpha .05 level is designated as significant. Correlations will be computed for the total sample, and for males and females separately.

The sample utilized in this research is relatively small, particularly when broken down into male and female groups, and grade levels. Consequently, any significant relationships should lend support to the locus of control scale used as a sensitive instrument to predict relationships.

Summary

This chapter described the methodological procedures employed in this research. The first section was concerned with the source of data which included a description of the population, the sample, and the interview session. The second section described the proposed plan of analysis which included a delineation of the dependent and independent factors used for correlational analysis, the construction of the indexes, and the statistical techniques employed to determine the significance of each relationship examined.

CHAPTER III

ANALYSIS OF DATA

Introduction

The purpose of this chapter is to examine the relationship between locus of control, the dependent variable, and selected demographic and social/behavioral factors, the independent variables. More specifically, the demographic factors to be examined are sex, socioeconomic status, grade level, average grades, family size, and length of residence. The social/behavioral factors are social participation, drinking behavior, and smoking behavior.

Relationships between the dependent variable and the independent variables will be examined for the total sample (N=47), for the male group (N=27), and for the female group (N=20). Included in this chapter is a statement of the expected relationship between locus of control and each independent variable, a description of the statistic used to test for significance, and the findings of each statistical test.

Demographic Factors

Sex

As mentioned previously, sex as a differentiating

variable is not expected to show a significant relationship to locus of control scores. Therefore, the expected relationship is: There will not be a significant difference between males and females as related to locus of control.

A one-way analysis of variance found no significant differences between males and females as related to locus of control, which was as expected.

In addition to the dependent variable, locus of control, sex differences were examined for the independent variables grade level, average grades, family size, length of residence, social participation, and the quantity-frequency measure of drinking behavior. A one-way analysis of variance found all but one of these variables to be non-significant as to sex differences. The variable, length of residence, was found to be significant. Females had longer lengths of residence than males.³ These results are offered for the

³Data were collected that are not included in this thesis. A scale on alienation devised by Jessor, et. al. (1968), for use in his adult study sample was administered to the total sample in the present study. A one-way analysis of variance found a significant difference between males and females on alienation scores. Males had higher mean scores than females. In addition, a Pearson product-moment correlation coefficient was computed for the relationship between locus of control scores and alienation scores. The correlation was not significant at the .05 level for the total group or for the male group. For the female group (N=20), $r=.44$, which was significant at the .05 level. All correlations were in the positive direction, which indicates that alienation is positively related to external locus of control.

information of the reader and are not discussed in detail since sex differences are not the concern of this thesis.

Socio-economic Status

The index constructed to measure socio-economic status divided subjects into a lower and middle class status with none of the subjects receiving a rank that placed them in the upper class.⁴ Previous studies were inconsistent, but the normative data for the CNS-IE found lower socio-economic status to be significantly related to external locus of control for males, but not for females. Therefore, the expected relationship between socio-economic status and locus of control is: Socio-economic status will be positively correlated with external locus of control for males, but not for females.

A point-biserial correlation coefficient was computed to determine the relationship between socio-economic status and locus of control. For the total sample ($N=47$), $r_{pb} = .17$, which is not significant. For the male group, ($N=27$), $r_{pb} = -.47$, which is significant. For the female group, ($N=20$), $r_{pb} = .02$, which is not significant.

The expected relationship was found. Lower

⁴For a full discussion of this index, see page 28.

socio-economic status of males was significantly related to external locus of control. This finding indicates that socio-economic status is a greater influence on locus of control orientation for males than for females.

Grade Level

Previous studies have found that locus of control scores decrease with increased grade level. Therefore, the expected relationship between grade level and locus of control is: Locus of control scores will decrease as grade level increases.

A Pearson product-moment correlation coefficient was computed to determine the relationship between grade level and locus of control scores. For the total sample ($N=47$), $r = -.01$, which is not significant. For the male group ($N=27$), $r = .13$, which is not significant, and for the female group ($N=20$), $r = -.19$, which is not significant. However, the unexpected direction of the twelfth grade males should be noted. Additionally, the increase in locus of control scores for the females in the tenth grade was unexpected. The small number of subjects in each grade level for each sex prohibits comparisons with other studies or tentative explanations for these results. The means and standard deviations of locus

of control scores are shown in Table 3 by grade level and sex.

TABLE 3

Means and Standard Deviations of Nowicki-Strickland Locus of Control Scores for Males and Females for Grades Nine Through Twelve

Grade	Mean	Males		Mean	Females	
		Standard Deviation	(N)		Standard Deviation	(N)
9	12.22	4.19	9	10.2	1.60	5
10	11.50	4.50	10	14.3	5.93	10
11	10.75	4.08	4	6.0	2.94	3
12	14.25	4.71	4	9.5	3.50	2

Average Grades

Previous studies have found academic achievement to be associated with locus of control. Measurements of academic achievement have been grade point average, achievement test scores, and report-card grades. The measure of academic achievement in this study was average grades as reported by subject.⁵ It is assumed that average grades as reported by subject is a comparable measure of academic achievement as measured by grade point average, achievement test scores, and report-card grades. Previous studies were inconsistent for both

⁵For a full discussion of this index see page 30.

grade point average and achievement test scores depending on which measure was being used for males and females. In general, however, academic achievement was found to be positively related to internal locus of control. Therefore, the expected relationship between average grades and locus of control is: Higher average grades will be positively correlated with internal locus of control.

The Pearson product-moment correlation coefficient was computed to determine the relationship between average grades and locus of control scores. For the total sample (N=47), $r = -.22$, which is not significant. For the male group, (N=27), $r = -.36$, which is not significant. For the female group, (N=20), $r = -.02$, which is not significant.

Although the relationship did not reach the level of significance, it was in the expected direction. Higher average grades were positively related to internal locus of control.

Failure to find significant relationships between average grades and locus of control may have been due to the self-report method and the lack of precision between average grades as reported by subject and those obtained from official school records.

Family Size

Previous research has found increased family size

to be positively correlated with locus of control scores. Therefore, the expected relationship between family size and locus of control is: There will be a positive correlation between family size and external locus of control.

A Pearson product-moment correlation coefficient was computed to determine the relationship between family size and locus of control. For the total group (N=47), $r = .17$, which is not significant. For the male group (N=27), $r = -.17$, which is not significant, and for the female group (N=20), $r = .55$, which is significant.

The direction of the relationship was as expected for the total group and for the female group. That is, as family size increased, locus of control scores increased. The relationship for the male group was in the unexpected direction. These findings indicate that increased family size is positively related to external locus of control for females, but not for males.

Length of Residence

The measurement of this variable was operationalized by the following question included in the schedule: "How long have you lived in this community?" The number of years respondent reported was the score used for

correlational analysis.

As mentioned previously, it is not known what length of residence implies as it is related to locus of control. This researcher was unable to find any literature concerning this variable. The generally held belief is that longer lengths of residence suggests a lack of social mobility, which is characteristic of the lower socio-economic class. This is based on the fact that upward social mobility is associated with geographic mobility. This reasoning suggests that the possible relationship between length of residence and locus of control would be: Longer lengths of residence will be positively correlated with external locus of control.

The Pearson product-moment correlation coefficient was computed to determine the relationship between length of residence and locus of control. For the total sample ($N=47$), $r = .21$, which is not significant. For the male group ($N=27$), $r = .26$, which is not significant, and for the female group ($N=20$), $r = .27$, which is not significant.

Although the correlation coefficient did not reach the .05 level of significance for males or females, it was in the expected direction. While longer lengths of residence were positively correlated with external locus of control, it does not appear to be a strong

indicator of subjects' locus of control orientation.

Social/Behavioral Factors

Social Participation

Social participation has been found to be associated with locus of control. Previous studies found extracurricular activities to be positively related to internal locus of control for females, but not for males. The present study will examine social participation in three separate areas. More specifically, those areas are religion, school-related activities, and other activities. Social participation in the area of religion included a measurement of church attendance and church-related activities. Thus, there were four separate measurements for social participation, plus a combined score which yielded a total score for social participation.⁶ Since it is not known if one area is more highly correlated with locus of control, the four measurements described above plus the total score for social participation will be examined separately for both males and females. The expected relationship is: There will be a positive correlation between external locus of control and lower scores for church attendance, church-related activities, school-related activities,

⁶For a full discussion of this index see page 31.

other activities, and for total social participation.

The Pearson product-moment correlation coefficient was computed for the above described measures of social participation. Each type of social participation and the correlation coefficient are shown in Table 4.

TABLE 4
Pearson Correlations Between Measures of
Social Participation and Locus of Control

Type of Activity	Total Sample (N=47)	Males (N=27)	Females (N=20)
Church Attendance	-.19	-.30**	-.05
Church-related Activities	.09	-.04	.21
School-related Activities	-.01	-.08	.10
Other Activities	-.09	-.09	-.29
TOTAL SOCIAL PARTICIPATION	.01	-.11	.13

*p less than .05

**p less than .10

A significant relationship was not found for this variable. The correlations for the male group were all in the negative direction, which was as expected. For both males and females, church attendance and other activities were negatively correlated. The findings for the female group were surprising since social participation in this group was found to be significant in prior studies, while in this study the most consistent findings were in

the male group.

Drinking Behavior

Drinking has been found to be associated with locus of control. However, the studies reviewed were inconsistent as to the relationship. The study by Jessor, et. al. (1968), did not find a significant relationship between quantity-frequency scores of drinking and locus of control, although the correlation was in the positive direction. The other two studies reviewed had divergent views. Therefore, the speculation as to the relationship between drinking behavior and locus of control in the present study is tentative at best since it approximates only the Anglo group in Jessor et. al.'s study, but uses the quantity-frequency index as a measure of alcohol use devised by Jessor.⁷ Therefore, the expected relationship between drinking behavior and locus of control is: There will be a positive correlation between quantity-frequency index scores and external locus of control.

A Pearson product-moment correlation coefficient was computed to determine the relationship between drinking behavior as measured by the quantity-frequency index scores and locus of control. For the total sample

⁷For a full discussion of this index see page 34.

(N=47), $r = -.02$, which is not significant. For the male group (N=27), $r = -.01$, which is not significant, and for the female group (N=20), $r = -.19$, which is not significant.

While none of the correlations were significant, the unexpected direction of the relationship should be noted. That is, locus of control scores decreased with increased quantity-frequency scores of alcohol use for both males and females. The fact that the relationship is not significant agrees with Jessor, et. al.'s findings, but the correlation in this study is in the opposite direction. This finding gives added support to his study that drinking behavior for this age group is not indicative of either an internal or external locus of control. That is, neither drinking behavior nor locus of control is solidified enough for this age group to be significantly related, and increased drinking is a function of something other than increased external locus of control in the high school age group.

Smoking Behavior

The question included in the schedule concerning this variable was: "Do you smoke?" A response of no was given a score of 0, and a response of yes was given a score of 1.

Previous studies had found a positive relationship between smoking and external locus of control. Therefore, the expected relationship is: There will be a positive correlation between smoking and external locus of control.

A point-biserial correlation coefficient was computed for the total sample only ($N=47$). The correlation coefficient $r_{pb} = -.067$ was not significant. Neither was the relationship in the expected direction. The mean locus of control scores for smokers was lower ($\bar{X}=11.67$) than for non-smokers ($\bar{X}=12.53$).

Summary

This chapter examined the relationship between locus of control and selected demographic and social/behavioral factors. The demographic factors were sex, socio-economic status, grade level, average grades, family size, and length of residence. The social/behavioral factors were social participation, drinking behavior and smoking behavior.

Among the demographic factors examined, only two of the factors were upheld as stated. Significant differences between locus of control and sex had not been expected and this relationship was found to be non-significant at the designated .05 level. Socio-economic status was expected to be significantly related to

external locus of control for males, but not for females. The expected relationship was found to be significant. Only one other independent factor, family size, reached the designated level of significance, and for the female group only. It had been expected that a positive relationship would be found for both sexes. The direction of the relationship was as expected in the female group, but was in the negative direction for the male group. None of the other independent factors examined were found to be significant, although most of the correlations were in the expected direction. A negative correlation had been expected between grade level and locus of control scores. The correlation was non-significant and the trend for the tenth grade females and twelfth grade males was in the unexpected direction.

CHAPTER IV

SUMMARY AND CONCLUSIONS

Summary

In preceding chapters, the relationship between locus of control and selected demographic and social/behavioral factors were examined. The dependent variable, locus of control, was identified as a construct of considerable theoretical and empirical attention.

In this regard, reference to social learning theory and the formulation and construction of scales to measure the construct were central to the introduction of this study. The significance of the present study was discussed in conjunction with the selection of the Nowicki-Strickland (1973), scale as the instrument selected to measure locus of control among the high school students constituting the study sample. The distinctiveness of this study was its focus on the study sample and the selected independent factors being utilized for correlational analysis with the dependent variable. The sample in the present study consisted of forty-seven high school students drawn from the entire high school population in a small homogeneous community.

The independent factors were classified in two major groupings. They were the demographic factors,

which included sex, socio-economic status, grade level, average grades, family size, and length of residence; and the social/behavioral factors, which included social participation, drinking behavior, and smoking behavior.

The statistical tests employed to determine significance of the relationships were the Pearson product-moment correlation coefficient, a point-biserial correlation coefficient, and a one-way analysis of variance. The .05 level of probability was set to determine the significance of the relationships examined.

A review of the literature pertinent to this study revealed inconsistencies with regard to several of the relationships that were examined in this study. However, for the most part, prior studies did provide a basis enabling a formulation of expected relationships between the independent factors examined and locus of control. Some of these expected relationships were based on findings of other studies that most nearly approximated the study sample and measurements utilized in this research.

As previously mentioned, the independent factors utilized for correlational analysis were classified as demographic and social/behavioral factors. The demographic factors were sex, socio-economic status, grade level, average grades, family size, and length of residence. The social/behavioral factors were social participation,

drinking behavior, and smoking behavior. Only one of the two major groups of factors was found to be significantly related to locus of control as stated.

Sex was not expected to be significant as to locus of control orientation. However, the literature had suggested that one may expect variable relationships according to particular sexual categories. Therefore, expected relationships were examined for the total group as well as for each of the two sexual subgroups. Only two of these specific relationships were upheld as stated. These two factors were sex and socio-economic status. As expected, sex was found to be non-significant as related to locus of control orientation. However, closer examination of the sexual subgroups found that relationships did vary among the sex groups for some of the factors included in the analysis.

As noted above, socio-economic status was found to be significant for the male group. It had been expected that lower socio-economic status would be significantly related to external locus of control for the male group and not for females. It had been expected that locus of control scores would be negatively correlated with socio-economic status for males and not for females. The findings were as expected and were found to be significant.

The other factors examined either failed to

reach the designated level of significance or, if significant, were not upheld as specifically stated. Additionally, certain relationships suggested discernable patterns. For example, in examining grade level and locus of control, it had been expected that locus of control scores would decrease with increased grade level. However, the findings of this research did not uphold the expected relationship. The tenth grade females had a higher mean than the ninth grade group. The scores for females did decrease for the eleventh and twelfth grades. The twelfth grade male group had higher locus of control scores than the ninth, tenth, and eleventh grade males. The sample sizes (for both males and females) when broken down into grade levels were too small for some of the grades, which could account for the unexpected relationship.

Average grades as reported by subject was assumed to be a comparable measure of academic achievement as measured by grade point average, standardized achievement tests, and report-card grades. Average grades were expected to be negatively correlated with locus of control scores. All correlations were negative but failed to reach the .05 level of significance. The direction of the relationship supports prior research, but the reader should recall that there were inconsistencies in prior research depending on which measure was

being used as an indicator of academic achievement, and whether the sample was of elementary school age, high school age, or college age.

Another pattern was found with regard to the family size factor. Family size had been positively correlated with locus of control scores in prior research, and it had been expected that locus of control scores would increase with increased family size for both males and females. The expected relationship was found to be significant (and approached the .01 level) for the female group. The relationship was in the negative direction for the male group.

Longer lengths of residence were expected to be positively related to external locus of control scores for both males and females. Though not significant, the relationship was in the expected direction. For the total group, the correlation coefficient approached the .10 level of significance. However, this factor does not appear to be a good indicator of locus of control orientation; and sex does not appear to be a moderating variable.

As mentioned previously, none of the social/behavioral factors examined in this research were found to be significant. Those factors were social participation, drinking behavior, and smoking behavior.

It had been expected that social participation

would be negatively correlated with locus of control scores. The relationship was inconsistent for males and females. Social participation was measured by four separate measures and also included a score for total social participation. The four separate measures included church attendance, church-related activities, school-related activities, and other activities. The sums of these measures yielded the index score for total social participation. The relationship between the five measures of social participation and locus of control was in the expected direction for the male group; and was found to be significant at the .10 level for church attendance. Prior research had found increased social participation to be negatively related to locus of control for females, but not for males. Findings of this research within the female group were inconsistent. Further, sex may not be an important moderating variable since the expected relationship was found in the male group, but not in the female group.

The relationship between quantity and frequency of alcohol use and locus of control scores was found to be non-significant. A positive relationship between alcohol use as measured by the quantity-frequency index and external locus of control had been expected. The findings of this research were in the negative direction. As mentioned previously, use of alcohol for the high

school age group does not appear to be a good indicator of locus of control orientation.

It had been expected that smoking behavior would be positively related to external locus of control. The findings in this research indicated a negative relationship and failed to reach the designated level of significance.

Conclusions

The inconsistencies reported in relevant research and the inconsistencies found in the relationships between the selected demographic and social/behavioral factors examined in this research clearly points to the problem in locus of control and related factors for the high school age group. Due to the paucity of available studies for this age group, previous studies referred to in this research were out of necessity concerned with college samples, non-college adult samples, elementary school age groups, and more heterogeneous high school samples. Caution must be exercised in comparing adult samples and younger age groups with samples of high school students.

As with any research, the results of a study depend on the precision of the instruments, scales, and techniques used for measurement and analysis. The measurements used in this study are believed to be

accurate. One weakness in this study is the use of average grades as reported by subject. In all probability this is a much less precise method than official school records. All the other scales and indexes have already been validated in other studies or were extensive and direct enough to preclude large errors. Also, it was necessary to assume that the subjects answered the questions truthfully. However, there was no way to verify that they did. Failure to find significant relationships may have been due to the small sample size in some cases. However, the size of the total sample (N=47), the male sample (N=27), and the female sample (N=20) were not so small that failure to find significant relationships should be attributed to sample size alone.

Consequently, it might be more insightful to return to the theory from which the concept of locus of control was derived for an explanation of the results of this study. Locus of control is a special case of generalized expectancy of reinforcement which depends on the individual's learning experiences in past situations as well as the value that individual places on the reinforcement. The belief that what happens to one is dependent on his own behavior is "internal"; and the belief that what happens is contingent upon luck, fate, powerful others, etc. is "external." One explanation

for the inconsistent findings in the present research is that for high school students, locus of control may be a transitory stage. Still under external control of parents and school authorities, and at the same time expected in many areas to be "adult," the subject may behave or report behavior characteristic of internality in some situations and characteristic of externality in other situations. Findings of studies concerned with locus of control for this age group must be interpreted with caution until enough evidence is in to make conclusive statements as to what factors are related to internality or externality.

Therefore, the initial problem of what factors are related to locus of control for high school students was not greatly clarified by this research, but this research effort does point to the need for continued research. Future research should include longitudinal studies which considers the interrelationships between the various factors that appear to be related to locus of control for this age group as well as the need for replications of prior studies since some of the inconsistencies reported may be a result of differences in method.

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APPENDIX

APPENDIX

OCCUPATIONAL CLASSIFICATIONS

The W. L. Warner, M. Meeker, and K. Eells

Index

Category I

Professionals

Lawyers
Doctors
Engineers
Judges
High School Superintendents
Veterinarians
Ministers (graduates from divinity school)
Chemists, biologists w post graduate training
Architects

Business Men

Regional and division managers of large
financial and industrial enterprises

Clerks and Kindred Workers

C.P.A.s

Proprietors and Managers

Business valued at \$75,000 and over

Farmers

Gentlemen

APPENDIX--Continued

Category II

Professionals

High school teachers
Trained nurses
Chiropractors
Undertakers
Ministers (some training)
Newspaper editors
Librarians (graduate)

Business Men

Assistant managers
Office Dept. managers of large businesses
Assistants to executives

Clerks and Kindred

Accountants
Salesmen of real estate and insurance
Postmasters

Proprietors and Managers

Business valued at \$20,000 to \$75,000

Farmers

Large farm owners
Farm owners

APPENDIX--Continued

Category III

Professionals

Social workers
Grade school teachers
Optometrists
Librarians (not graduates)
Undertaker's assistants
Ministers (no training)

Business Men

All minor officials of business

Clerks and Kindred Workers

Auto salesmen
Bank clerks
Cashiers
Postal clerks
Secretaries to executives
Supervisors to railroad, telegraph,
telephone, etc.
Justice of Peace

Proprietors and Managers

Businesses valued at \$5,000 to \$20,000
Hardware store or dept. store manager

Manual Workers

Contractors

APPENDIX--Continued

Category IV

ProfessionalsBusiness MenClerks and Kindred Workers

Stenographers
Bookkeepers
Rural Mail clerks
Railroad ticket agents
Sales people in dry goods stores
Secretaries

Proprietors and Managers

Business valued at \$2,000 to \$5,000

Manual Workers

Factory foremen
Electricians
Plumbers
Carpenters
Watchmakers (own own business)

Protective and Service Workers

Dry cleaners
Butchers
Sheriffs
Railroad engineers, conductors

APPENDIX - - Continued

Category V

ProfessionalsBusiness MenClerks and Kindred Workers

Dime store clerks
Hardware salesmen
Beauty operators
Telephone operators

Manual Workers

Carpenters (appr.)
Plumbers (appr.)
Electricians (appr.)
Timekeepers
Telephone or telegraph linemen
Radio repairmen
Medium skilled workers
Mechanics

Protective and Service Workers

Barbers
Firemen
Butchers (appr.)
Practical nurses
Policemen
Seamstresses
Cooks in restaurants
Bartenders
Stockroom workers

Farmers

Tenant farmers

APPENDIX--Continued

Category VI

ProfessionalsBusiness MenClerks and Kindred WorkersProprietors and Managers

Business valued at less than \$500

Manual Workers

Moulders

Semi-skilled workers

Assistants to carpenters, etc.

Protective and Service Workers

Baggage men

Night Policemen

Watchmen

Taxi and truck drivers

Gas station attendants

Waitresses in restaurants

Farmers

Small tenant farmers

Laborers

APPENDIX--Continued

Category VII

ProfessionalsBusiness MenClerks and Kindred WorkersProprietors and ManagersManual Workers

Heavy labor
Migrant work
Odd-job men
Miners

Protective and Service Workers

Janitors
Scrubwomen
Newsboys

Farm

Migrant farm labor