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A Student Leadership Study on the University of Tennessee-Knoxville Campus

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Senior Thesis

Fulfilling the Graduation Requirements of College Scholars and
the University Honors Department

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ABSTRACT

The following paper first provides a brief history of leadership theory and then describes an original student leadership study. Five groups of students were involved in the study including Greek leaders, religious leaders, Whittle Scholars, Tennessee Scholars, and non-leaders. The groups were compared on their personal histories and leadership styles. There were significant differences between each of the groups with the exception of the leadership styles of Whittles and Tennessee Scholars.

Background/ History of Leadership Theory

The construct of leadership has baffled and intrigued scientists, as well as the general population, throughout the ages. “The Oxford English Dictionary (1933) notes the appearance of the word ‘leader’ in the English language as early as the year 1300. However, the word ‘leadership’ did not appear until about 1800” (Stogdill 7). Yet, only in the last century have we truly begun to research, experiment on, and dissect the construct. The following paper will discuss a brief history of leadership theory and then describe an original experiment carried out on the University of Tennessee-Knoxville campus.

The first obstacle that many researchers must overcome is to define leadership. “Decades of academic analysis have given us more than 350 definitions of leadership” (Bennis 4). The debilitating consequences of having so many definitions is that many contradict each other and therefore make it hard to incorporate previous research into new studies. Furthermore, instead of refining the research to a single, agreed upon definition, many definitions are created to encompass new findings in research. For virtually every book and experiment based on leadership, an original definition is established. Nevertheless, sifting through the endless array of definitions is not impossible. In Stogdill’s book, Handbook of Leadership, he dedicates an entire chapter to definitions of leadership. Within this chapter he is able to classify and group many of the definitions based on common themes. More recently, Ross, in 1991, also tried to deal with the many definitions of leadership. In his book, Leadership for the Twenty-First Century, he breaks the definitions down in terms of dictionary definitions, scholarly definitions, and then

definitions developed in the 1930's, 1940's, 1950's and so on. Throughout the chapter, he notes paradigm shifts and emphasizes that the definitions did not always progress in a linear fashion. Instead, the definitions had a tendency to incorporate novel aspects with those that had been used previously. Sometimes, the *en vogue* definitions paralleled old definitions entirely, the difference being just an alteration in terms or language used.

Not only have the definitions of leadership altered throughout history, so have the theories surrounding it. One of the first leadership theories to gain recognition was Thomas Carlyle's Great Man Theory in 1910. This theory postulated that "the progress the world has experienced is a product of the individual achievements of great men who lived during the period in which advances occurred" (Jacob 1). The theory focused on individuals within a society that had superior qualities that differentiated them from others. This line of thought led to Trait Theories in which it was proposed that specific personality or character traits of a person could be identified as predictors of leadership (Stogdill 17). Trait theories were especially popular in and around World War II. During this time, it was believed that if traits, such as height, weight, and intelligence, could be identified as characteristics that all leaders possessed, one could select potential leaders based on these traits. This theory coincided naturally with the war and the hope of finding military leadership. However, it was eventually concluded that traits alone could not identify leaders. Nonetheless, the significance of traits has not yet been erased completely from even today's leadership research. For example, in 1991, Locke wrote:

There is considerable evidence that effective leadership is characterized by the traits of honesty/integrity and self-confidence; there is less conclusive evidence regarding the role of the traits of creativity, flexibility, and charisma (24).

Whereas the traits differ from the earlier, more concrete concepts, to more abstract constructs, the theory persists, building off of the original basic ideas.

To counteract the Great Man Theories, critics focused on the situation rather than the individual. "According to Murphy (1941), leadership does not reside in a person but is a function of the occasion" (Stogdill 18). Schneider carried out a study that supported this theory in 1937. He found, "that the number of great military leaders in England was proportionate to the number of conflicts in which the nation engaged" (Stogdill 18). Eventually, as neither theory proved to be sufficient, the two were combined to create the Personal Situational Theories that argued both the person and the situation affected leadership.

Some of the more contemporary theories include the expectancy reinforcement theory of role attainment (Stogdill 1959), path-goal theory of leadership (Evans 1970), House's (1970) motivational theory of leadership, the contingency theory of leadership (Fiedler 1967), and transformational vs. transactional leadership (Burns 1978). One of the most recent developments in leadership theory is shared leadership and empowerment. This theory tries to look at leadership from a different perspective. Instead of considering a leader as the heroic individual who is wiser and more courageous than anyone else, leadership is said to be the responsibility of more than one individual in an organization. "According to this view, leadership processes cannot be understood apart from the dynamics of the social system in which they are embedded" (Dachler, 1984). The Ohio State University studies were also very influential to leadership theory, as are they to the original study discussed later in the paper. The basis of the studies was to, "describe different aspects of the behavior of leaders" and agree upon items that could

only be assigned to one subscale (Bass 511). The results of the studies produced two primary factors of leadership, consideration and initiation of structure, which will be described in more detail in the *LBDQ* section of the paper.

Although I have reported the history of leadership much like the majority of books and researchers have in the past, Rost emphasizes in his book that the theories did not follow each other as neatly as one is led to believe. Whereas most researchers, as did I, infer for the reader that the theories always moved forward and came about as counteractions to previous theories, Rost reports that it was a much more hazy process:

The telling of the leadership story is misleading because it gives the impression that our understanding of leadership is more sophisticated and advanced in the 1980's than it was in the 1950's and that we have certainly come a long way from our naivete of the 1930's. (Rost 19)

Rost then goes on to show how previous theories such as group facilitation, using traits to predict leadership, and the great man/woman theory are still prevalent today. Rost's concluding point on reporting the history of leadership is that just because it is messy does not mean we are not progressing. Rost feels that leadership scholars "have been acting like scientists all this time and doing exactly what scientists are supposed to do. If one experiment does not work, the scientists go on to the next until they find the combination that works" (Rost 23).

Leadership theory has undergone many transformations since it first became a topic of study merely a century ago. The goal for the researchers of today is to integrate a conceptual framework of leadership. If we can begin to piece together the findings and create an integrated model, it is believed that we will be able to move forward. As it stands now, with the lack of common language and common definitions, the research, at

times, seems to move in a circle. In 1974, Stogdill did begin the process of clarifying and categorizing the research that has already taken place. After many revisions, the most recent occurring in 1990 authored by Bass, the Handbook of Leadership is still the most integrated book of leadership theory available. Overall, leadership is a complex subject, yet it is not impossible to decipher. In the past 100 years we have made great research strides in the area and we continue to do so.

Student Leadership Study

The following study is an original experiment involving various student leaders on the University of Tennessee-Knoxville campus. The overall purpose of the study is twofold. First, to differentiate between two scholarship groups on campus. One scholarship group was selected based on academics as well as leadership potential displayed in high school. The other was chosen primarily for academics. The second purpose of the study is to differentiate between student Greek leaders and student religious leaders on campus in terms of leadership style and personal history. In addition to the main purposes of the study, there are also several research hypotheses concerning the instruments used and previous research on the groups involved.

RESEARCH

Characteristics of College Leaders

Many of the personal history questions asked of the participants in the original study coincide with previous college leadership research. For example, some of the

questions taken from the *Manager Profile Record (MPR)* deal with high school leadership and activities. In Astin's book, Four Critical Years, he finds that:

Of students who were elected president of an organization in high school, 24 percent is later elected to a student office in college, compared with only 12 percent of those who are not elected president of a student organization in high school. (116)

Some of the biographical questions also refer to living situations while at college.

Research shows that, "The student's chances of being elected to a student office are substantially better if the student lives in a college dormitory as a freshman" (Astin 116).

In general, leadership among college students is a selective group, "Approximately 16 percent of students is elected to a student office sometime during the undergraduate years" (Astin 115). Within this small percentage, the original study takes an even closer look into specific groups of leaders. With respect to research on specific groups of leaders, the research is somewhat lacking. However, many broad generalizations have been formed referring to types of leaders at the college level:

As a result of observations and interviews, Spaulding (1934) classified elected student leaders into the following five types: the social climber, the intellectual success, the good fellow, the big athlete, and the leader in student activities. From then on, the typing of students as social, political, athletic, or intellectual leaders became common practice. (Bass 22)

Overall, the theories behind and the instruments used in the following study are well established in leadership research. However, the specific subjects used are rather unique to the UTK campus as well as leadership research in general.

Religious Research

After looking into the research available on religious leaders, it has become evident to the author that a religious leader as defined in most research is very different from a student who holds a leadership position in a campus religious organization. If one were to look up *religious leader* a plethora of information on Gandhi, Moses, and Martin Luther King, Jr. would be cited followed by modern evangelists and highly conservative religious organization leaders. The characteristics of leaders in this type of research do not seem to parallel those of student leaders in campus religious organizations. What information was available was somewhat sparse.

Based on a lack of research for my particular choice of subjects to study, I will draw many of my hypotheses from personal experience with and observations of student leaders in religious organizations.

Fraternity or Sorority Leadership Research

Research pertaining to leaders within fraternities or sororities was also difficult to find. Much of the research deals with the value that numerous Greek chapters place on leadership and the many notable people that were once leaders in Greek organizations. But, very few comment on personal leadership styles of individual leaders within the Greek system. Nonetheless, research could be found that Greek members and leadership are significantly connected in some way:

Studies of the social background of student leaders by Martin, Gross, and Darley (1952); Weinberg (1965); Krumboltz, Christal, and Ward (1959); and Kumar (1966) revealed few consistent relationship across samples, although Williamson (1948) found that fraternity members occupied a disproportionately large share of leadership positions on the college campus. (Bass 82)

Much of the research also comments on generalized characteristics that have shown up in study after study on Greek members: "Fraternity or sorority members are more dependent on family and peers, more conservative, less sensitive to moral or social injustice, and less sophisticated in the humanities and arts. These differences persist for the duration of the undergraduate years" (Wilder 448). One study did comment specifically about the type of leadership valued by a sample of pledges: "Pledges also came to value leadership defined by the SIV (Survey of Interpersonal Values (Gordon, 1976)) as the ability to exercise power and influence over others, more highly than independents (non-Greek members) in interpersonal relationships. . ." (Hughes 409). This type of finding coincides with some of my hypotheses on the leadership styles of Greek leaders.

INSTRUMENTS

Manager Profile Record (MPR)

The *Manager Profile Record* is a questionnaire consisting of 196 autobiographical and 46 judgment items covering everything from personal histories including high school and college activities to opinions on the most optimal type of leadership style. The overall purpose of the *MPR* is "to identify those candidates who have the highest probability of management success" (Technical Report 12). As reported in the executive summary, "It produces a profile of those taking it, indicating the degree to which their profile is similar to that of the successful managers and professionals studied" (2). The

instrument is primarily given to managers in order to measure their ability to ascend within an organization to higher levels of management. The questions are multiple choice. The scores range from 8 to 32 and are divided into 7 levels. A value of one represents the lowest level, signifying the least chance of managerial success: “Only seventeen in 100 managers and professionals scoring with Level 1 were found in the top half of the job level distribution” (Administrator’s Guide 4). Conversely, Level 8 is the highest level in which there is an 87% chance of managerial success. According to the Administrator’s Guide, “*MPR* scores repeatedly have been shown to be significantly related to job responsibility level achieved over time no matter the organization type or functional area”(1). The autobiographical questions of the *MPR* were primarily used in the original study.

Leadership Behavior Descriptive Questionnaire (LBDQ)

As found in a review by Dipboye, the *LBDQ* is a questionnaire made up of 40 items that tests for two specific factors. The questionnaire consists of “. . .15 items loading on the initiating structure (IS) and 15 items loading on the consideration factor (CS). Ten additional items [are] used as buffer items” (Dipboye 1174). Consideration can be defined as “behavior indicative of friendship, mutual trust, respect, and warmth in relationship between the leader and members of the group” (Dipboye 1174). Initiating structure “is said to reflect the extent to which the leader organizes and defines the ‘relationship between himself and the members of his group,’ defines the role expected of each group member, endeavors ‘to establish well-defined patterns of organization,’ and communicates ‘ways of getting the job done’” (Dipboye 1174). Rather than rating a

supervisor, participants in the original study were asked to consider their own personal leadership style when answering the questions. Each question was answered using an A=Always to E=Never continuum. The *LBDQ* version used in this study is made up of 4 subscales. The following highlighted terms are the subscale definitions taken from the *LBDQ* manual:

Initiation of Structure - clearly defines own role, and lets followers know what is expected. (10 items)

Initiating Structure also includes, “such leadership behaviors as insisting on maintaining standards and meeting deadlines and deciding in detail what will be done and how it should be done...Particularly relevant are defining and structuring the leader’s own role and those of the subordinates’ toward attaining goals. (Bass 512)

Role Assumption - actively exercises the leadership role rather than surrendering leadership to others. (10 items)

Based on the items used in the scale, Role Assumption also involves taking the initiative in groups, taking full charge when emergencies occur, standing firm, and being easily recognized as the leader of the group.

Consideration - regards the comfort, well being, status, and contributions of followers. (10 items)

The Considerate leader expresses appreciation for good work, stresses the importance of job satisfaction, maintains and strengthens the self-esteem of subordinates by treating them as equals, makes special effort to help subordinates feel at ease, is easy to approach, puts subordinates’ suggestions into operation, and obtains subordinates’ approval on important matters before going ahead. (Bass 511)

Production Emphasis - applies pressure for productive output. (10 items)

Production Emphasis also includes the encouragement of extra effort, keeping the work moving at a rapid pace, and encouraging competition against other groups as well as against one’s own previous record.

HYPOTHESES

Based on the previous research, personal observations, and the instrumentation used in the study, the following are the hypotheses to be tested regarding the various groups of leaders in the study. Please note that the group labeled *leader* is made up of the religious leaders, Greek leaders, Whittle Scholars, and Tennessee Scholars.

MPR Hypotheses

1. *The leader group will be significantly different from the non-leader group.*

By definition, the *MPR* should differentiate between leaders and non-leaders.

2. *There will be a significant difference between Greek Leaders and religious leaders.*

Greek leadership environments seem to parallel that of a corporation more so than religious leaders' environments. Therefore, because the *MPR* is targeted at managers in corporations, Greek leaders should be found as significantly different from religious leaders.

3. *Whittle Scholars and Tennessee Scholars will score significantly different.*

- a. Whittle Scholars were chosen as leaders by a university selection committee, whereas Tennessee scholars did not have to display leadership (from high school) to receive their scholarship.
- b. Whittle Scholars probably held more 'official' leadership positions while in high school (The selection committee reviews resumes. Consequently, official positions are easier to put on paper, and therefore more readily highlighted by members of the selection committee.)

- c. Whittle Scholars, in general, are probably more apt to do the things to achieve official titles/roles –which is probably consistent with the corporate environment tested in the *MPR*.

LBDQ Hypotheses

1. *Leaders will demonstrate greater levels of each of the four scales than non-leaders.*

Because the *LBDQ*, by definition, tests for leadership styles, leaders should demonstrate higher Consideration, Initiating Structure, Production Emphasis, and Role Assumption than non-leaders.

2. *Greek Leaders will demonstrate more Initiating Structure and Production Emphasis than religious leaders.*

The Greek environment is more like a corporate environment; highly structured and production is emphasized.

3. *Religious leaders will demonstrate more Consideration than Greek leaders.*

Greek leadership is more competitive. Religious leaders will show more Consideration because the environment is more voluntary and accepting of new members. There is no formal 'rush' for campus religious organizations; doors are usually open. An environment lower in competition would seem to foster more consideration.

4. *Greek leaders will demonstrate greater Role Assumption than will religious leaders.*

Again, Greek leadership positions are more competitively gained. In most cases, leadership roles are formally elected positions. The formality would help leaders keep their positions and would also prevent the non-leaders from overtaking the

position. The environment of a religious organization is usually less competitive.

The members seem to have more of a cooperative mindset and are less eager to retain a leadership position if another member tests it.

5. *Whittle Scholars will show greater Initiating Structure, Production emphasis, and Consideration than Tennessee Scholars.*

Most Whittle Scholars had leadership experience in either the student government or large national chapters of an organization while in high school. To be a successful leader in these environments, initiating structure and production emphasis would be favorable traits. Whittle Scholars also had to gain leadership roles in high school.

Because peers usually elect students to the leadership positions, a potential leader must gain the trust and admiration of his/her peers in order to gain a position.

Therefore, high levels of consideration may be a common trait in high school leaders.

METHOD

Subjects

The study involved a total of 101 volunteers that were grouped as follows. Group 1 consisted of 18 Whittle scholars (recipients of a leadership/academic scholarship). Group 2 included 18 Tennessee Scholars (recipients of a solely academic based scholarship). Group 3 was made up of 21 individuals who have held or do hold a leadership position in a Greek organization. Group 4 consisted of 24 students who have held a leadership position in a campus religious organization. All of the participants in this group were involved in Christian religious organizations. Finally, Group 5 was made up of 20 individuals who have never held a leadership position while at the University of Tennessee, Knoxville (UTK). All volunteers were UTK students between the ages of 18 and 23. There were 42 males and 59 females surveyed with a mean grade point average (GPA) of 3.5058. Such a high mean GPA may be attributed to the requirements of the scholarship groups involved in the study. In order to keep the four/five year scholarship each student must maintain a GPA of 3.25 or higher.

Procedure/Instrument

The questionnaire consisted of three sections. The first section recorded each subject's age, gender, GPA, and major. It also contained specific questions concerning the subject's leadership roles at UTK in which organization names were to be written in. The second section consisted of 100 multiple choice questions taken from the *Manager Profile Record* (Richardson, Bellows, Henry & Company, Inc.). Some of the wording

was altered in order to make the questions applicable to college students. The third section was made up of the 40 *Leadership Behavioral Descriptive Questionnaire (LBDQ)* (Stogdill, 1957) questions testing for various aspects of leadership emphasizing consideration and initiation of structure.

RESULTS

Results for the *MPR*

In order to analyze the data received from the *MPR*, two methods of statistical analysis were used. The first method was computing F-tests. An F-test was used if the answer choices were clearly ordinal. For example, question 51 has answer choices that are on a continuum:

51. My luck is good:

- a. almost always
- b. most of the time
- c. some of the time
- d. not very often
- e. almost never

The F-test generated p-values that indicated the probability that the means of the two groups being compared were not different. Any p-value less than 0.05 was considered significant, meaning the two groups were significantly different in answering the question. The p-values indicated not only significant differences between answer choices, but also which group tended to score higher or lower on the answer choice continuum.

The second method of computing significant values was through Fisher's Exact test. The Fisher's Exact test was used if the answer choices were nominal, meaning

choice A was different from B, but B was not less than A or A was not less than B. For example, question 60 has nominal answer choices:

60. The one of the following which I do best is:

- a. face-to-face interviews
- b. written reports
- c. group discussions or conferences
- d. lectures or speeches to groups
- e. getting my ideas across to others

Again, a p-value less than 0.05 was considered significant. The Fisher's Exact test can differentiate between answer choices on a question. For example, the answer choice 'B' may be significant in question 71 for Greek leaders and religious leaders. Please refer to the following tables for specific results on the *MPR*:

Table 1 indicates whether the answer choices of a question were either ordinal or nominal.

Table 2 shows the questions with significant p-values when comparing all 4 groups against the non-leader group.

Table 3 reports significant differences between Greek leaders and religious leaders.

Table 4 represents significant differences between Whittle Scholars and Tennessee Scholars on individual questions.

Results for the *LBDQ*

All questions on the *LBDQ* are answered on a continuum. Therefore, an F-test was used to indicate significant p-values. There are four scales within the *LBDQ*. Leaders were compared with non-leaders, while Greek leaders were compared with religious leaders on all four scales. Likewise, Whittle and Tennessee Scholars were also

compared on each of the four scales. **Table 5** shows if there was a significant difference between the groups being compared on each of the 4 scales. If there was a difference, the F-test also showed which group scored higher/lower on the continuum.

SUMMARY OF RESULTS AND DISCUSSION

Leaders / Non-Leaders

Leaders and non-leaders were found to be significantly different in the general areas of participation in school-sponsored activities, social attitudes, and working styles. In high school, leaders generally held more positions and participated in more activities. This goes along with previous research in which leadership roles in high school were positively correlated with leadership roles in college. At the university level, leaders were also more active in school-sponsored activities such as social clubs and the student government. Furthermore, leaders more often than non-leaders reported being able to gain membership into social clubs, win an election for a class position, organize a student organization, and make the honor roll or dean's list with little effort. Leaders were also found to take on more than they could handle. Based on their activity record in both high school and college, this result seems logical.

The results found concerning social attitudes and working styles can best be explained using the concepts of independence and dependence. Leaders have been found, to a certain extent, to be dependent on external forces, meaning forces outside of themselves. For example, the leaders in this study reported to have more friends and be more sociable. They go outside of themselves for such things as motivation and affirmation. On the contrary, non-leaders are more independent of external forces and

rely instead on intrinsic motivations and affirmation. For example, non-leaders were found to not seek advice from anyone during high school. More non-leaders were also found to be only children. This goes along with the idea that they had to rely on themselves more for motivation and affirmation as opposed to a child growing up with siblings. As far as working styles are concerned, non-leaders worked best when they were 'in the mood.' If one refers to the answer choices in question 74, it becomes evident that the other choices are all external in nature. The individual who chooses 'in the mood' is commenting on the fact that external forces do not affect their work as much as intrinsic motivations. Also concerning working style, whereas leaders were least effective at written reports, non-leaders were least effective at giving speeches or lectures. Again, leaders are more aware of external forces such as an audience and how others are reacting towards them. This awareness makes it easier to give a speech or lecture but harder to write a paper in which there is no immediate feedback from an audience.

Being less dependent on their immediate peers, non-leaders were found to have friends that were three or more years older than themselves. Three years is a significant amount of time for a student in an undergraduate institution. Considering most of the participants were either juniors or seniors, a three-year difference would probably mean that their friends were not in school. Spending much of one's time and/or pursuing interests outside of school would have a negative impact on the desire to lead student groups in an academic setting. Finally, leaders reported it most difficult for them to be creative. It is unclear to the author the implications of such an answer, however the context of the answer is probably relevant and can be found in question 66.

Greek Leaders / Religious Leaders

Greek and religious leaders primarily differ in their participation in school activities, their moral stance, and their working styles. However, the reasoning behind these results is much more elusive than the inferences drawn from the results of the leader/non-leader comparison group. Greek leaders were found to have been involved in more high school activities. For example, more Greek leaders reported participating in athletics, being a member in an honor society or honor roll, and earning the role of president in a school club. In college, Greek leaders were still active in such areas as social clubs, honorary scholastic societies, and honorary societies for some campus achievement.

It appears that some of the differences between Greek and religious leaders can be attributed to religious teachings. For example, religious leaders agreed more strongly with the statement that "it is important to do what is right even if that loses the approval of others or keeps me from reaching an objective". Religious leaders were also found to mute their emotions more. Whereas no Greek leaders chose the response, a significant number of religious leaders reported that when they became angry they tried not to show that they were angry at all. The reaction could be in response to such teachings as 'love thy neighbor as thyself'. Whereas anger is not necessarily a sin, forgiveness is certainly a virtue in biblical teachings. Thus, many religious leaders may try to hide their "un-Christian-like feelings". Finally, religious leaders reported being able to understand the behavior of others better than Greek leaders. What can be inferred from this result is somewhat unclear. However one explanation could involve the simple dichotomy between good and evil which is taught in a number of religions. It is possible that the

religious leaders have a more simplistic view of judging behaviors than the Greek leaders and therefore do not question the behaviors as strongly as others might.

There were several differences between Greek and religious leaders that were found that do not lead to simple inferences. For example, it is unclear to the author why the two groups differentiated themselves in the following ways. More of the religious leaders were found to be middle children. In high school, Greek leaders asked teachers or parents for help instead of asking schoolmates, paying closer attention in class, carrying out a background study, or studying until the problem was solved. Whereas religious leaders worked best under pressure, no Greek leader chose this answer. Finally, although it bothered Greek leaders the most to get a last minute notice of work that needed to be done, religious leaders were most bothered by incomplete or inaccurate instructions. Again, while these differences are intriguing, a suggestion as to what they infer can not be given.

Whittle Scholars / Tennessee Scholars

The purpose of including the two scholarship groups in the study was to compare an already identified leader group with a group having no leadership distinction. In essence, the differences between the two groups are a comment on what the selection committee for the leadership scholarship valued as characteristics of a leader. Whittle Scholars were found to be more creative, outgoing, and willing to take chances. Whittle Scholars were also found to be more self –confident when on the statement, “On a list of 100 typical people in the kind of job I can do best, I would belong in the . . .” they scored

themselves higher on the continuum than did Tennessee Scholars. Finally, Whittle Scholars were found to have participated and held more leadership roles in school-sponsored organizations. Many of these characteristics were most likely 'leadership' traits in the eyes of the selection committee that chose the scholarship recipients.

Some other interesting results differentiating the two groups were that the Tennessee Scholars reported they had a faster rate of academic progress through school than did Whittle Scholars. Whereas Whittle Scholars can sometimes compensate for a lower academic record with a high level of leadership potential, Tennessee scholars are selected primarily on their academic record. Whittle scholars were also found to work on more things at a time than did Tennessee Scholars. One possible explanation for this could be that Whittle Scholars require a high level of stimulation. As found in their biographical questions, they were often involved in many school related activities throughout high school and college. Tennessee Scholars were found to be more friendly with their high school friends and reported to see them more frequently. There are many possible inferences that could be made from this finding. It is possible that Whittle Scholars are so success oriented that they tend to only focus on those that can elevate them to a higher level. It is also possible that Whittle Scholars are more future oriented in that they value new experiences over what has already been done. Or, Whittle Scholars may be so active in college that they rarely travel home. Another explanation could be that since Tennessee Scholars were not identified as leaders, they are more intrinsically motivated. By being less dependent on others (as discussed earlier) they could have developed closer friendships with a few people in which they still keep in contact with. Following this line of thought, the Whittle Scholars, being more dependent

on others, would have had more friends in high school, but possibly not as close of relationships. Finally, on question 66, Whittle Scholars found it most difficult to 'keep plugging'. Once again, an explanation can not be inferred for this result but the alternate answer choices do seem to be noteworthy in analyzing this answer.

LBDQ Discussion

There were significant differences in leadership styles among each of the comparison groups except for Whittle Scholars and Tennessee Scholars. There were no significant differences between Whittle Scholars and Tennessee Scholars on any of the four scales in the *LBDQ* indicating, with regard to leadership style, these two groups are essentially the same. However, on a larger scale, the two groups were a part of the leader group, which demonstrated high Initiating Structure, and Consideration, the two main factors of leadership. Therefore, it can be assumed that although they did not differ from each other, they both demonstrated high levels of Initiating Structure and Consideration. Leaders had higher Initiating Structure, Consideration, and Production Emphasis as opposed to non-leaders. This finding helps to reinforce the validity of the test itself because the test claims the four scales are related to leader behavior. High Role Assumption can be a characteristic of leaders or non-leaders, but research has shown that most leaders must possess the trait. Therefore, not finding a significant difference between any of the groups on Role Assumption does not necessarily undermine the scale on the *LBDQ*. In support of the hypothesis, Greek leaders showed higher levels of Initiating Structure and Production Emphasis than did religious leaders. Finally, there

was no significant difference between Greek and religious leaders on the Consideration factor. This finding does not support the hypothesis that religious leaders demonstrate greater Consideration than Greek leaders. One possible explanation could be that both religious and Greek leaders demonstrated high levels of Consideration and therefore a difference was not detected.

Limitations of the Study

There were three major limitations in the original study. First, the groups were not completely orthogonal. Some Greek leaders participated in religious organizations on campus and vice versa. However, the leaders representing a certain group were self-proclaimed non-leaders of the corresponding group in question. Secondly, the entire *MPR* was not used because many of the questions were inappropriate for the defined samples. Furthermore, the official scoring key could not be applied to an incomplete version of the questionnaire. Therefore scoring of the *MPR* consisted solely of statistical significance tests. Finally, the sample size was small. A larger sample size would produce more consistent results with better reliability. However, due to the nature of the defined groups, the populations were limited.

CONCLUSION

Overall, the study yielded many significant differences between the defined student leader groups. The leaders in the study were found to have substantially different

leadership styles, backgrounds, and social preferences as opposed to the non-leaders.

Greek leaders were significantly different from religious leaders in Initiating Structure and Production Emphasis as well as certain aspects of their personal histories.

Finally, although many anticipated differences between Whittle Scholars and Tennessee Scholars were not discovered regarding their leadership style, their personal backgrounds did produce many significant differences.

Hopefully, this study is only the beginning of further leadership research on specific student groups. If one of the goals of college is to identify and develop leaders, more studies are needed regarding leadership styles and the identification of common characteristics of leaders. Leadership has become extremely important in today's society and workplace. If we can learn more about an individual's leadership style/potential earlier on, we may eventually be able to train individuals or at least place them in the most advantageous environment available.

TABLE 1

MPR Answer Guide

Continuum Answer Choices	1	2	5	6	8	11	14	15	18	20	21	22	23	24	25	26	27	30
	37	38	39	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
	56	58	59	62	64	65	67	68	70	72	73	77	78	79	81	82	83	84
	85	86	87	88	89	90	92	93	94	95	96	97	98	99				
Nominal Answer Choices	3	4	7	9	10	12	13	16	17	19	28	29	31	32	33	34	35	36
	40	57	60	61	63	66	69	71	74	75	76	80	91	100				

TABLE 2

**A Comparison of the Leader Group with the Non-Leader Group on the
Biographical Items**

Question	Test	p-value
4d. By the time I had graduated from (or left) high school, I had been president of a school club. <i>More leaders than expected chose this answer.</i>	Fisher's Exact	0.0030
4e. By the time I had graduated from (or left) high school, I had been president of my class or the student government organization. <i>More leaders than expected chose this answer, only 1 non-leader chose this answer.</i>	Fisher's Exact	0.0073
4f. By the time I had graduated from (or left) high school, I had been a member of the student government association. <i>More leaders than expected chose this answer.</i>	Fisher's Exact	0.0016
4g. By the time I had graduated from (or left) high school, I had been head of an important student committee. <i>More leaders than expected chose this answer.</i>	Fisher's Exact	0.0268
16e. When I was in high school, I usually went for advice to: I did not seek advice from anyone. <i>More of the non-leaders than expected answered this way.</i>	Fisher's Exact	0.0141
17e. Of the children in my family, I was: I was an only child. <i>More of the non-leaders than expected answered this way.</i>	Fisher's Exact	0.0388
32a. During my college years, I have participated in a social club, fraternity or sorority. <i>More leaders than expected chose this answer.</i>	Fisher's Exact	0.0003
32c. During my college years, I have participated in a school paper or yearbook. <i>More non-leaders than expected chose this answer.</i>	Fisher's Exact	0.0271
32h. During my college years, I have participated in some other school-sponsored activity. <i>More leaders than expected chose this answer.</i>	Fisher's Exact	0.0017
33b. During my college years, the things I was able to do with little effort were make the honor roll or dean's list. <i>More leaders than expected chose this answer.</i>	Fisher's Exact	0.0053

TABLE 2 cont'd.

33c. During my college years, the things I was able to do with little effort were gain membership in a social club. <i>More leaders than expected chose this answer.</i>	Fisher's Exact	0.0057
33e. During my college years, the things I was able to do with little effort were win an election for a class position. <i>More leaders than expected chose this answer, 0 non-leaders chose this answer.</i>	Fisher's Exact	0.0274
33i. During my college years, the things I was able to do with little effort were organize a student organization. <i>More leaders than expected chose this answer.</i>	Fisher's Exact	0.0384
34a. At some period during my college years, I have been a member of a social club, fraternity or sorority. <i>More leaders than expected chose this answer.</i>	Fisher's Exact	0.0018
34b. At some period during my college years, I have been a member of a general honorary scholastic society. <i>More leaders than expected chose this answer.</i>	Fisher's Exact	0.0274
54c. The age of the majority of my friends at the present time is about three or more years older. <i>More non-leaders than expected chose this answer.</i>	Fisher's Exact	0.0071
56. The one of the following statements which I think comes closest to describing me is: <i>Non-Leaders were less sociable and had fewer friends than expected.</i>	F-Test	0.0467
61b. The one of the following at which I am least effective is: written reports. <i>More of the leaders than expected chose this answer.</i>	Fisher's Exact	0.0193
61d. The one of the following at which I am least effective is: lectures or speeches to groups. <i>More of the non-leaders than expected chose this answer.</i>	Fisher's Exact	0.0324
66b. The one of the following which is most difficult for me to do personally is: be creative. <i>More leaders than expected chose this answer, only one non-leader chose this answer.</i>	Fisher's Exact	0.0159
74c. Of the following statements, the one which describes me best is: I work best when I'm in the mood. <i>More of the non-leaders than expected chose this answer.</i>	Fisher's Exact	0.0250
99. The people who know me best would say that I: <i>Leaders take on more than they can handle more often than non-leaders.</i>	F-Test	0.0077

TABLE 3

**A Comparison of the Greek Leaders with the Religious Leaders on the
Biographical Items**

Question	Test	p-value
3a. During my high school years, I was a member of an athletic team. <i>More Greek leaders than expected chose this answer.</i>	Fisher's Exact	0.0437
3d. During my high school years, I was a member of an honor society or the honor roll. <i>More Greek leaders than expected chose this answer, only 1 Greek leader did not choose this answer.</i>	Fisher's Exact	0.0371
4d. By the time I had graduated from (or left) high school, I had been president of a school club. <i>More Greek leaders than expected chose this answer.</i>	Fisher's Exact	0.0261
4f. By the time I had graduated from (or left) high school, I had been a member of the student government association. <i>More Greek leaders than expected chose this answer.</i>	Fisher's Exact	0.0079
13a. When I found problems hard to understand during my high school years, I usually: asked teachers or parents for help. <i>More Greek leaders than expected chose this option.</i>	Fisher's Exact	0.0128
17d. Of the children in my family, I was: neither oldest nor youngest. <i>More religious leaders than expected chose this option.</i>	Fisher's Exact	0.0076
28b. While in college, my residence for the greatest part of the time has been: a fraternity or sorority house. <i>More Greek leaders than expected chose this option, No religious leaders chose it.</i>	Fisher's Exact	0.0167
33c. During my college years, the things I was able to do with little effort were gain membership in a social club. <i>More Greek leaders than expected chose this answer.</i>	Fisher's Exact	0.0001
34a. At some period during my college years, I have been a member of a social club, fraternity or sorority. <i>All Greek leaders and 3 religious leaders chose this answer.</i>	Fisher's Exact	0.0001

TABLE 3 cont'd.

34b. At some period during my college years, I have been a member of a general honorary scholastic society. <i>More Greek leaders than expected chose this answer.</i>	Fisher's Exact	0.0116
34c. At some period during my college years, I have been a member of an honorary society for some campus achievement. <i>More Greek leaders than expected chose this answer.</i>	Fisher's Exact	0.0005
57b. The way I act at the present time when I become angry is to: try not to show that I am angry at all. <i>More religious leaders than expected chose this option, No Greek leaders chose this option.</i>	Fisher's Exact	0.0076
74e. Of the following statements, the one which describes me best is: I work best under pressure. <i>More religious leaders than expected chose this option, No Greek leaders chose this option.</i>	Fisher's Exact	0.0090
76b. Of the following, the one thing which would bother me most is: getting a last minute notice of work which needs to be done. <i>More Greek leaders than expected chose this option.</i>	Fisher's Exact	0.0494
76e. Of the following, the one thing which would bother me most is: being given incomplete or inaccurate instructions. <i>More religious leaders than expected chose this option.</i>	Fisher's Exact	0.0162
84. I find myself unable to understand why people behave the way they do. <i>Greek leaders more often did not understand.</i>	F-Test	0.0145
93. I think that it is always important to do what is right, even if that loses the approval of others or keeps me from reaching an objective. <i>Religious leaders agree with this statement more strongly than Greek leaders do.</i>	F-Test	0.032

TABLE 4

**A Comparison of Whittle Scholars with Tennessee Scholars on the
Biographical Items**

Question	Test	p-value
3b. During my high school years, I was a member of a social club, fraternity or sorority. <i>More Whittle Scholars than expected chose this answer.</i>	Fisher's Exact	0.0429
3c. During my high school years, I was a member of: a school group (debating team, political science club, musical organization, etc.) <i>Everyone chose this answer.</i>	Fisher's Exact	0.0000
4b. By the time I had graduated from (or left) high school, I had been editor of the school paper or yearbook. <i>More Whittle Scholars than expected chose this answer.</i>	Fisher's Exact	0.0204
4c. By the time I had graduated from (or left) high school, I had been staff member of the school paper or yearbook. <i>More Whittle Scholars than expected chose this answer.</i>	Fisher's Exact	0.0300
4e. By the time I had graduated from (or left) high school, I had been president of my class or the student government organization. <i>More Whittle Scholars than expected chose this answer.</i>	Fisher's Exact	0.0219
6. During my teens, my rate of academic progress through school was: <i>Tennessee Scholars were faster than Whittle Scholars.</i>	F-Test	0.0359
46. My work habits are such that I prefer: <i>Whittle Scholars like to work on more things at a time than do Tennessee Scholars.</i>	F-Test	0.0361
53. On a list of 100 typical people in the kind of job I can do best, I would belong in the: <i>Whittle Scholars reported being higher compared to others than did Tennessee Scholars.</i>	F-Test	0.0373
55. I am still friendly with the people I knew in high school to the following extent. <i>Tennessee Scholars are more friendly and see them more often than do Whittle Scholars.</i>	F-Test	0.0288
66d. The one of the following which is most difficult for me to do personally is to: keep plugging. <i>More of the Whittle Scholars than expected answered this way, No Tennessee Scholar chose this answer.</i>	Fisher's Exact	0.0227
86. In terms of my ability to come up with new ideas or solutions to problems, I think that I am: <i>Whittle Scholars reported being more creative than did Tennessee Scholars.</i>	F-Test	0.0301
89. Of the following descriptions, the one which fits me best is: <i>Whittle Scholars reported being more outgoing than did Tennessee Scholars.</i>	F-Test	0.0219

TABLE 4 cont'd

94. Of the following statements, the one which describes me best is: <i>Whittle Scholars reported taking more chances than did Tennessee Scholars.</i>	F-Test	0.0435
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TABLE 5

LBDQ Results

	Initiating Structure	Role Assumption	Consideration	Production Emphasis
Leaders/ Non-Leaders	p=0.0124 Significant Difference <i>Leaders demonstrated greater initiating structure than did non-leaders</i>	No Difference	p=0.0092 Significant Difference <i>Leaders demonstrated greater consideration than did non- leaders</i>	p=0.0089 Significant Difference <i>Leaders demonstrated greater production emphasis than did non-leaders</i>
Greek/ Religious Leaders	p=0.0340 Significant Difference <i>Greeks leaders demonstrated greater initiating structure than did religious leaders</i>	No Difference	No Difference	p=0.0467 Significant Difference <i>Greeks leaders demonstrated greater production emphasis than did religious leaders</i>
Whittles/ Tennessee Scholars	No Difference	No Difference	No Difference	No Difference

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APPENDIX

Table of Contents

- I.** Participant's Questionnaire Package
 - A.** Informed Consent
 - B.** Answer Sheet
 - C.** Questionnaire
- II.** Data
- III.** Descriptive Frequencies
- IV.** Statistical Analysis
(2 of approximately 500 pages)
 - A.** Sample of the F-Test Data
 - B.** Sample of the Fisher's Exact Test Data

A Student Leadership Study on the University of Tennessee Campus

Informed Consent

The following survey is part of Paige Bader's Senior Thesis Project. The survey contains questions about your personal history as well as your leadership characteristics. All data collected from the survey will be kept on computer disks and handled only by Paige Bader or Robert T. Ladd, Ph.D. Names of participants will not be included on data sheets.

Participation in this project is voluntary. You may choose to withdraw from the project, incurring no penalties, at any time. If you have any questions about the project, please feel free to contact the individuals listed below.

I have read and understand the above statements. I freely consent to participate in this project subject to the above conditions.

Printed Name _____

Signature _____

Date _____

Paige Bader
bader@utk.edu

Robert T. Ladd Ph.D.
Stokely Management Center
974-1678

A Student Leadership Study on the University of Tennessee Campus

The following questions are for statistical purposes and to learn about your personal history. Please fill in your answers in the spaces provided. On the reverse side is the answer sheet for the remaining of the questionnaire. Please print the letter(s) of your answer in the space provided. Note that the longer answer lines denote a question with possible multiple answers. Please do not write on the question packet. Thank you again for your participation in this study.

Gender _____ Age _____ Approximate GPA _____

Year in college _____ (Fresh, Junior...) Years attended UTK _____

Major _____

Have you ever held a leadership position while at UTK? Yes No

Are you involved in a religious organization on campus? Yes No
If so, which organization _____

Are you involved in Greek Life at UTK? Yes No
If so, which chapter _____

Are you on a scholarship at UTK? Yes No
If so, which scholarship _____

Looking back, do you think you were a leader in high school? Yes No

Do you consider yourself a leader in college? Yes No

If you were not a leader in high school, but have emerged as a leader in college, when do you think the change occurred?

ANSWER SHEET

Please Return to Paige Bader

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A Student Leadership Study on the University of Tennessee Campus
Paige Bader and Robert T. Ladd, Ph.D.

The following questions concern your personal history and your leadership behavior. There are two parts to this questionnaire. Please do not write in the questionnaire packet, an answer sheet will be provided for you. Choose your answer and write the corresponding letter on the answer sheet.

When you complete the questionnaire, please return all materials to Paige Bader. Materials may be returned in person or placed in any **CAMPUS MAIL** location in the envelope provided. (**note:** the address provided is not sufficient for the U.S. Postal Service)

1. My usual scholastic standing in high school was in the:

- a. top 5%
- b. upper third, but not top 5%
- c. middle third
- d. lower third
- e. I do not know

2. The number of students in the high school I attended for the longest period of time was:

- a. less than 100
- b. 100 to 500
- c. 500 to 1000
- d. 1000 to 2000
- e. more than 2000

3. During my high school years, I was a member of: (Mark all that apply)

- a. an athletic team
- b. a social club, fraternity or sorority
- c. a school group (debating team, political science club, musical organization, etc.)
- d. an honor society or the honor roll
- e. I never had an opportunity to be a member of these groups

4. By the time I had graduated from (or left) high school, I had been: (Mark all that apply)

- a. captain of an athletic team
- b. editor of the school paper or yearbook
- c. staff member of the school paper or yearbook
- d. president of a school club
- e. president of my class or the student government organization
- f. a member of the student government association
- g. head of an important student committee
- h. leading actor/actress in a school play
- i. supporting actor/actress in a school play
- j. none of these
- k. I didn't go to high school

5. During my last two years in high school, the number of hours a week I averaged on paid jobs was:

- a. none
- b. 1 to 5
- c. 6 to 10
- d. 11 to 15
- e. 16 or more

6. During my teens, my rate of academic progress through school was:

- a. much faster than most
- b. just a little faster than most
- c. about the same as most
- d. just a little slower than most
- e. much slower than most

7. During my high school years, most of my time outside of regular school hours was taken up with:

- a. dances, dates or parties
- b. sports
- c. making spending money
- d. music art or reading
- e. study or other scholastic-related activities

8. During my last year in high school, I had:

- a. no close friends
- b. one or two close friends
- c. a small group of close friends
- d. a great many close friends
- e. almost everyone in my class as a close friend

9. Of the following, my favorite high school subject was:

- a. English
- b. physical education
- c. mathematics
- d. history/social studies
- e. science
- f. foreign language

10. Of the following, my least favorite high school subject was:

- a. English
- b. physical education
- c. mathematics
- d. history/social studies
- e. science
- f. foreign language

11. I think it would have been most desirable (whether or not it was true) during my last year in high school to have had:

- a. no close friends
- b. one or two close friends
- c. a small group of close friends
- d. a great many close friends
- e. almost everyone in my class as a close friend

12. During my high school days, I liked to have my accomplishments become known by:

- a. announcement to the class or group
- b. notification to myself only
- c. notification to my parents
- d. publication in the school or local paper
- e. I did not have any noteworthy accomplishments in high school

13. When I found problems hard to understand during my high school years, I usually:

- a. asked teachers or parents for help
- b. asked schoolmates for help
- c. paid closer attention in class
- d. planned and carried out background study
- e. studied until the problem was solved
- f. none of the above

14. I would rate the high school teachers I had as:

- a. extremely good
- b. very good
- c. good
- d. fair
- e. poor

15. The grades I received in high school were:

- a. mostly A's
- b. mostly A's and B's
- c. mostly B's and C's
- d. mostly C's and D's or below

16. When I was in high school, I usually went for advice to:

- a. friends of my own age
- b. parent(s) or foster parent(s)/guardian(s)
- c. teachers
- d. someone else
- e. I didn't seek advice from anyone

17. Of the children in my family, I was:

- a. the oldest
- b. the youngest by a few years
- c. the youngest by many years
- d. neither oldest nor youngest
- e. I was an only child

18. During my teens, most of my friends:

- a. were usually younger than I was
- b. were about my own age
- c. were usually older than I was
- d. I did not have an opportunity to make many friends (work, isolated area, etc.)

19. The time of my childhood or youth which I would like most to live over is:

- a. the time before I started going to school
- b. the time I was in school
- c. the time when I first started dating
- d. none -- my childhood was fine, but living it over doesn't interest me
- e. I dislike thinking much about my childhood

20. When I earned my first money (other than from members of my family), my age was:

- a. younger than 8
- b. 8 to 10
- c. 11 to 12
- d. 13 to 14
- e. older than 14

21. The number of living brothers and sisters I had when I was 16 years of age was:

- a. none
- b. 1
- c. 2
- d. 3
- e. 4 or more

22. When I first went alone on a trip of over 100 miles, my age was:

- a. younger than 10
- b. 10 to 12
- c. 13 to 15
- d. 16 to 18
- e. 19 or older
- f. I've never gone on a trip of over 100 miles by myself

23. The number of colleges or universities which I attended for at least one quarter or semester is:

- a. none
- b. 1
- c. 2
- d. 3 or more

24. In college (not counting summers or breaks), the average number of hours a week I have spent, or do spend, on paid jobs is:

- a. none
- b. 1 to 9
- c. 10 to 19
- d. 20 to 29
- e. 30 to 39
- f. 40 or more

25. The college or university I attended for the longest period of time was:

- a. less than 25 miles from my home
- b. 25 to 100 miles from my home
- c. 100 to 500 miles from my home
- d. more than 500 miles from my home

26. I think the most desirable distance between one's home and college would be:

- a. less than 25 miles
- b. 25 to 100 miles
- c. 100 to 500 miles
- d. more than 500 miles

27. The grades I receive in college are:

- a. mostly A's
- b. mostly A's and B's
- c. mostly B's and C's
- d. mostly C's and D's or below

28. While in college, my residence for the greatest part of the time has been:

- a. a dormitory
- b. a fraternity or sorority house
- c. an apartment which I rented
- d. a rooming house
- e. with my parents or other relatives
- f. some other arrangement

29. My college major is in: (Pick one. If you had more than one, pick your favorite)

- a. accounting
- b. architecture
- c. biological sciences
- d. business administration
- e. computer science
- f. economics
- g. education
- h. engineering
- i. foreign language
- j. health services
- k. journalism
- l. literature
- m. marketing
- n. mathematics
- o. physical education
- p. physical sciences
- q. social sciences
- r. speech
- s. other

30. During my last full-time year of college, the average number of hours per week that I spent in study outside of class was about:

- a. 5 or less
- b. 6 to 10
- c. 11 to 15
- d. 16 to 20
- e. more than 20

31. With respect to studying during college:

- a. I did not do much studying because I didn't want to
- b. I did not do much studying because of other demands on my time
- c. I did not do much studying because it wasn't necessary
- d. I studied hard, but only before examinations
- e. I studied regularly throughout the school year
- f. I planned and did extra studying beyond that specifically required for my work

32. During my college years, I have participated in: (Mark all that apply)

- a. a social club, fraternity or sorority
- b. political clubs
- c. a school paper or yearbook
- d. dramatics
- e. musical activities
- f. speech and debate activities
- g. athletic activities
- h. some other school-sponsored activity
- i. none of these
- j. I couldn't participate because I was working too many hours

33. During my college years, the things I was able to do with little effort were: (Mark all that apply)

- a. earn a letter in athletics
- b. make the honor roll or dean's list
- c. gain membership in a social club
- d. win a leading part in a school play
- e. win an election for a class position
- f. become a member of the debating team
- g. get into a musical organization
- h. receive a responsible job on a school publication
- i. organize a student organization
- j. none of these
- k. I couldn't do these things because I was working too many hours

34. At some period during my college years, I have been a member of: (Mark all that apply)

- a. a social club, fraternity or sorority
- b. a general honorary scholastic society
- c. an honorary society for some campus achievement
- d. an honorary society for scholastic achievement in a specific field
- e. a special interest club or group
- f. none of these

35. At some time while in college, I held the position of: (Mark all that apply)

- a. captain of an athletic team
- b. head of an important student committee
- c. editor of the school paper or yearbook
- d. head cheerleader
- e. leading actor/actress in a school play
- f. president of an honorary scholastic or leadership organization
- g. president of my class or the student government organization
- h. president of a residence hall
- i. none of these
- j. I couldn't do these things because I was working too many hours

36. I won a college scholarship or fellowship because of ability in: (Mark all that apply)

- a. academic work
- b. athletics
- c. something else
- d. none of these

37. While in college, the largest number of part-time jobs I held at any one time was:

- a. none
- b. 1
- c. 2
- d. 3 or more
- e. I worked on a full-time job

38. While in college, the average number of hours a week which I spent on part-time paid jobs was:

- a. none
- b. fewer than 5
- c. 5 to 10
- d. 11 to 20
- e. more than 20
- f. I worked on a full-time job

39. The part of the money for my support which I personally earned during college was:

- a. less than 10%
- b. 10% to 30%
- c. 30% to 60%
- d. 60% to 90%
- e. about all of it

40. Of the following sayings, the one which I believe is most true is:

- a. it's not what you know, it's who you know
- b. success is a matter of being in the right place at the right time
- c. "success" is ninety-five percent sweat and five percent luck
- d. nothing succeeds like success

41. When people tell me that something's been done or "taken care of," my reaction usually is:

- a. very trusting
- b. somewhat trusting
- c. somewhat suspicious
- d. very suspicious
- e. I have no set reaction to things like this

42. Compared to the general public, and no matter what I have to sell -- an idea or a product - I would rate my selling ability in the:

- a. top 5%
- b. top 20%, but not in the top 5%
- c. top half, but not in the top 20%
- d. lower half
- e. I don't know

43. In terms of my own executive ability or potential executive ability in any company, I think I stand in the:

- a. top 5%
- b. top 20%, but not in the top 5%
- c. top half, but not in the top 20%
- d. lower half
- e. I don't know

44. The amount of recognition which I usually receive for my accomplishments is:

- a. none at all
- b. occasional recognition but not much
- c. about as much as anyone else
- d. as much as is deserved
- e. sometimes more than is deserved

45. The speed at which I usually work is:

- a. much faster than most people
- b. somewhat faster than most people
- c. about the same as most people
- d. somewhat slower than most people
- e. much slower than most people
- f. I am unable to tell

46. My work habits are such that I prefer:

- a. to work on one thing at a time
- b. to work on several things at a time
- c. to work on many things at a time

47. Without any false modesty, I believe that the highest level I could reach in the course of a career in a major company is:

- a. president or chairman of the board
- b. the top executive level (vice president, director, or a principal officer)
- c. the top management level below the executives (head of a major function or area)
- d. the next level below (a top staff or top specialist position or head of a division of a major function or area)
- e. the next level below (a supervisory or staff position)
- f. a non-supervisory or operating position

48. The level at which I would like best to work (whether or not I ever attain that level) is:

- a. president or chairman of the board
- b. the top executive level (vice president, director, or a principal officer)
- c. the top management level below the executives (head of a major function or area)
- d. the next level below (a top staff or top specialist position or head of a division of a major function or area)
- e. the next level below (a supervisory or staff position)
- f. a non-supervisory or operating position

49. My physical condition is:

- a. poor -- need rest or medical treatment often
- b. fair -- can work regularly but don't always feel quite right
- c. good -- as good as that of most people
- d. excellent -- can tackle any job
- e. perfect -- can drive hard on any job day or night

50. Insofar as dropping off to sleep is concerned:

- a. I can go to sleep right away or any time of the day or night
- b. I can go to sleep within 15 minutes
- c. I can go to sleep within 15 minutes to 1/2 hour
- d. I usually need more than 1/2 hour to fall asleep
- e. I have no consistent pattern in the time required

51. My luck is good:

- a. almost always
- b. most of the time
- c. some of the time
- d. not very often
- e. almost never

52. With regard to my personal appearance, as compared to the appearance of my friends, I think that:

- a. most of my friends make a better appearance
- b. I am equal to most of them in appearance
- c. I am better than most of them in appearance
- d. I don't feel strongly one way or the other about my appearance

53. On a list of 100 typical people in the kind of job I can do best, I would belong in the:

- a. top 5%
- b. top 20%, but not in the top 5%
- c. top half, but not in the top 20%
- d. in the lower half
- e. I haven't given it much thought

54. The age of the majority of my friends at the present time is:

- a. about the same as mine
- b. about three or more years younger
- c. about three or more years older
- d. younger or older with no consistent pattern

55. I am still friendly with the people I knew in high school to the following extent:

- a. not at all
- b. friendly with some but see them irregularly
- c. friendly with some and see them regularly
- d. am close friends with quite a few

56. The one of the following statements which I think comes closest to describing me is:

- a. difficult to really get to know
- b. have some really close friends and a number of acquaintances
- c. friendly, easy-going, and have a lot of friends
- d. unusually sociable and friendly, with many more friends than most
- e. I find it difficult to describe myself

57. The way I act at the present time when I become angry is to:

- a. storm around for a while letting off steam
- b. try not to show that I am angry at all
- c. talk it over with someone
- d. try to keep away from everybody for a while
- e. I never let my temper get the best of me

58. Insofar as automobile driving is concerned:

- a. I am not quite as good as most other drivers
- b. I am as good as most other drivers
- c. I am better than most other drivers
- d. I am one of the best drivers
- e. I do not drive

59. Compared to the general public, I think that my potential or actual ability to supervise others is in the:

- a. top 5%
- b. top 20%, but not in the top 5%
- c. top half, but not in the top 20%
- d. lower half

60. The one of the following which I do best is:

- a. face-to-face interviews
- b. written reports
- c. group discussions or conferences
- d. lectures or speeches to groups
- e. getting my ideas across to others

61. The one of the following at which I am least effective is:

- a. face-to-face interviews
- b. written reports
- c. group discussions or conferences
- d. lectures or speeches to groups
- e. getting my ideas across to others

62. I consider myself to be:

- a. a nervous person
- b. a fairly tense person
- c. a fairly relaxed person except when work tensions build up
- d. a fairly relaxed person
- e. a relaxed person

63. In judging my peers, the one kind of behavior which irritates me the most is:

- a. drinking rather heavily
- b. not doing what they say they will do
- c. bragging
- d. lack of initiative
- e. being overly competitive
- f. having a know-it-all attitude
- g. something other than the above
- h. I don't let other people's behavior bother me

64. The extent to which I tell other people my troubles is:

- a. never
- b. not very often
- c. occasionally
- d. often

65. The amount of physical exercise I have averaged each week during the past year is:

- a. none
- b. 1 or 2 hours
- c. 3 or 4 hours
- d. 5 or 6 hours
- e. 7 hours or more

66. The one of the following which is most difficult for me to do personally is to:

- a. keep one jump ahead of others
- b. be creative
- c. conform
- d. keep plugging

67. A hard day's work tires me:

- a. somewhat more than others my age
- b. about the same as others my age
- c. somewhat less than others my age
- d. much less than others my age

68. The amount of sleep which I must average per night in order to feel really good is:

- a. less than 5 hours
- b. 5 to 6 1/2 hours
- c. 6 1/2 to 7 hours
- d. 7 to 8 hours
- e. more than 8 hours

69. I would be most likely to agree with a subordinate who has:

- a. broken a rule
- b. gone beyond his or her authority
- c. complained about an injustice done
- d. changed a method without consulting me
- e. I would not agree in such situations

70. In the past few months, the frequency with which I have had to turn down or break social engagements because I was fatigued was:

- a. much more often than I wanted to
- b. occasionally, but it hasn't happened too often
- c. rarely; I usually snap back after a hard day
- d. never; I have an extremely high energy level and almost never get fatigued

71. I believe the least desirable way for a person to react when angry is by:

- a. keeping it hidden and letting it wear off
- b. kicking or throwing something
- c. taking it out on someone else
- d. using loud exclamations
- e. talking about the problem with friends

72. Over the last few years, the number of serious problems I've encountered which I just didn't know how to handle was:

- a. none
- b. 1 or 2
- c. 3 or 4
- d. 5 or 6
- e. 7 or more

73. Of the following statements, the one which best describes me when I have to wait in line, in traffic, for service, etc. is:

- a. extremely patient
- b. very patient
- c. about as patient as anyone else
- d. somewhat impatient
- e. very impatient

74. Of the following statements, the one which describes me best is:

- a. I work best when my instructions are clear
- b. I work best when there are no interruptions
- c. I work best when I'm in the mood
- d. I work best when I'm working alone
- e. I work best under pressure

75. Of the following, the one which is most necessary to managerial success is:

- a. an ability to keep track of detail
- b. an ability to listen
- c. an ability to be consistent
- d. an ability to be patient
- e. an ability to understand how other people feel

76. Of the following, the one thing which would bother me most is:

- a. having to finish someone else's work
- b. getting a last minute notice of work which needs to be done
- c. no one listening to the suggestions I make
- d. being taken off a job before it is finished
- e. being given incomplete or inaccurate instructions

77. The statement that people who work hard will always get ahead is:

- a. always true
- b. usually true
- c. sometimes true, sometimes not
- d. usually not true
- e. never true

78. When I have made up my mind on something, getting me to change it is:

- a. not hard at all
- b. somewhat hard
- c. very hard
- d. extremely hard

79. The kind of supervision which I like best is:

- a. very close
- b. fairly close
- c. moderate
- d. minimal
- e. none

80. Of the following, the one thing which would most likely handicap a supervisor's or manager's progress is:

- a. being too easy-going
- b. pushing too hard to get people to do things
- c. being too tough
- d. being a "loner"
- e. not being calm under pressure

81. Of the following statements, the one which would describe me best is:

- a. much more talker than listener
- b. somewhat more talker than listener
- c. about as much talker as listener
- d. somewhat more listener than talker
- e. much more listener than talker

82. Being able to be on my own (not having to depend on anyone for anything) is:

- a. extremely important
- b. very important
- c. of some importance
- d. not too important
- e. not important at all

83. In general, the people I work with:

- a. always know where I stand on things
- b. usually know where I stand on things
- c. sometimes know where I stand on things
- d. rarely know where I stand on things
- e. never know where I stand on things

84. I find myself unable to understand why people behave the way they do:

- a. very often
- b. often
- c. sometimes, but not often
- d. almost never
- e. I've never given it much thought

85. By today's standards of what is right and wrong, and compared to others my age, I would rate myself as:

- a. very old-fashioned
- b. somewhat old-fashioned
- c. not at all old-fashioned
- d. I've never given it much thought

86. In terms of my ability to come up with new ideas or solutions to problems, I think that I am:

- a. extremely creative
- b. very creative
- c. somewhat creative
- d. rarely if ever creative
- e. I don't know

87. People who know me would rate my ability to "think on my feet" as:

- a. excellent
- b. very good
- c. good
- d. fair
- e. poor
- f. I don't know how they would rate me

88. Viewing myself as objectively as possible and compared to others my age, I would say that I am:

- a. much more aggressive than others
- b. somewhat more aggressive than others
- c. about as aggressive as anyone else
- d. somewhat less aggressive than others
- e. much less aggressive than others

89. Of the following descriptions, the one which fits me best is:

- a. much more outgoing than most others
- b. somewhat more outgoing than most others
- c. about as outgoing as anyone else
- d. somewhat less outgoing than most others
- e. much less outgoing than most others

90. If people who know me were asked to rate my ability to tolerate frustration, they probably would say that it is:

- a. much higher than most others
- b. somewhat higher than most others
- c. about the same as most others
- d. lower than most others
- e. I don't know what they would say
- f. they wouldn't know how to rate it

91. The best first step to take in getting people to change their minds about something is:

- a. find out why they hold the ideas they have
- b. make them defend their point of view, so they can see that it is wrong
- c. state your own ideas firmly and with authority
- d. show them in detail why their approach would not be as effective

92. When it comes to following through on things, despite any difficulties or distractions, I would rate myself as:

- a. well above average
- b. somewhat above average
- c. about average
- d. somewhat below average
- e. well below average

93. I think that it is always important to do what is right, even if that loses the approval of others or keeps me from reaching an objective:

- a. strongly agree
- b. agree somewhat
- c. don't agree or disagree
- d. disagree somewhat
- e. strongly disagree

94. Of the following statements, the one which describes me best is:

- a. I never take chances
- b. I hardly ever take chances
- c. I sometimes take chances
- d. I often take chances
- e. I very often take chances

95. People who know me would rate my organization and planning skills as:

- a. excellent
- b. very good
- c. good
- d. fair
- e. poor
- f. I don't know how they would rate me

96. My ability to "size up" people the first time I meet them is:

- a. excellent
- b. very good
- c. good
- d. fair
- e. poor

97. I am the kind of person who will try to do what others expect of me:

- a. always
- b. usually
- c. sometimes
- d. rarely
- e. never

98. Of the following statements, the one which I think describes me best is:

- a. always predictable
- b. usually predictable
- c. sometimes predictable
- d. rarely if ever predictable
- e. I'm not sure which one of these describes me best

99. The people who know me best would say that I:

- a. often take on more than I can handle
- b. sometimes take on more than I can handle
- c. rarely take on more than I can handle
- d. never take on more than I can handle
- e. I don't know what they would say

100. Of the following elements, the one which is most important to success is:

- a. an ability to identify problem areas quickly
- b. an ability to organize the details of the work to be done
- c. an ability to deal with all types of people
- d. an ability to stay with something, no matter how frustrating it gets

Each of the following questions deals with a group situation. Some group situations may include a classroom, a group project, an office or place of work, or a social club or organization. Please answer the following questions as if you are a member or leader of such a group.

A – ALWAYS B – OFTEN C – OCCASIONALLY D – SELDOM E – NEVER

1. When working with others, I keep everyone informed as to what is expected of them
2. I am hesitant about taking the initiative in groups
3. I am friendly and approachable
4. I encourage others to make the extra effort in group situations
5. I encourage the use of uniform procedures
6. I fail to take necessary action
7. I do little things to make it pleasant to be a member of the group
8. I emphasize being ahead of competing groups
9. I try out my ideas in the group
10. I let other people take away my leadership in the group
11. I put suggestions made by the group into operation
12. I needle members for greater effort
13. I make my attitude clear to the group
14. I let some members take advantage of me
15. I treat all members as my equal
16. I keep the work moving at a rapid pace
17. I decide what shall be done and how it shall be done
18. I am the leader of the group in name only
19. I give advance notice of changes
20. I push for increased production
21. I assign group members to particular tasks
22. I back down when I ought to stand firm
23. I keep to myself
24. I ask the members to work harder
25. I make sure that my part in the group is understood by the group members
26. I let some members have authority that I should keep
27. I look out for the personal welfare of the group members
28. I permit the members to take it easy in their work
29. I schedule the work to be done
30. I take full charge when emergencies arise
31. I am willing to make changes
32. I drive hard when there is a job to be done
33. I maintain definite standards of performance
34. I overcome attempts made to challenge my leadership
35. I refuse to explain my actions
36. I urge the group to beat its previous record
37. I ask that group members follow standard rules and regulations
38. I am easily recognized as the leader of the group
39. I act without consulting the group
40. I keep the group working up to capacity

Gender	Age	GPA	Year	UTK	Q1	Q2	Q3	Q4	Q5	Q6	H1	H2	H3a	H3b	H3c	H3d	H4a	H4b	H4c	H4d	H4e	H4f	H4g	h4h	h4i	H5	H6	H7	H8	
0	21	3.70	4	4.0	1	2	2	2	1	1	1	5	1	0	1	1	1	0	0	1	0	1	1	1	0	1	5	1	2	3
1	22	2.75	4	2.0	2	2	2	0	2	2	2	2	1	0	1	1	1	1	0	0	0	0	0	0	0	2	3	5	2	
1	20	3.93	3	3.0	1	2	1	0	1	1	1	4	1	0	1	1	0	0	1	1	1	1	1	0	0	4	1	3	4	
1	21	3.90	4	4.0	1	1	1	3	1	1	1	4	0	0	1	1	0	0	0	1	0	0	1	0	1	1	1	1	4	
1	20	3.70	2	2.0	1	2	1	3	1	1	1	5	1	0	1	1	1	0	0	1	1	1	1	0	0	3	2	2	3	
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1	21	3.80	3	3.0	1	1	2	3	1	1	2	5	1	0	1	1	0	1	1	0	1	1	0	0	1	1	1	5	2	
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1	21	3.85	4	4.0	1	1	1	2	1	1	1	4	1	0	1	1	1	0	0	0	0	0	0	0	0	1	1	2	3	
1	23	3.93	2	2.0	2	2	2	1	1	1	2	4	0	0	1	1	0	0	0	1	0	0	1	0	0	5	1	3	3	
0	20	2.90	3	3.0	1	1	2	1	1	1	2	2	1	0	1	0	1	0	0	0	0	0	0	0	1	0	5	2	2	
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0	22	3.90	4	5.0	1	1	2	3	1	1	1	4	1	0	1	1	0	0	1	1	1	1	1	0	0	1	1	5	4	
0	22	4.00	4	4.0	2	1	2	2	1	2	1	4	1	0	1	1	1	0	0	1	0	0	0	0	0	3	1	2	3	
0	22	3.90	4	3.5	1	1	2	2	1	1	1	4	1	0	1	1	1	0	0	0	1	1	0	0	0	1	1	2	3	
1	20	3.75	4	3.0	1	2	1	1	1	1	1	1	1	0	1	1	0	0	1	0	0	1	1	0	1	5	1	3	3	
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0	22	3.48	4	4.0	2	2	2	1	2	2	1	4	1	0	1	1	1	0	0	0	0	0	0	0	0	5	1	2	3	
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1	22	3.85	4	4.0	1	1	2	1	1	1	2	4	0	0	1	1	0	0	0	0	0	0	0	1	0	1	1	1	3	
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0	22	3.50	4	5.0	2	2	2	2	1	2	1	3	1	0	1	1	0	0	0	0	0	1	1	0	0	1	1	5	3	
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1	21	3.73	3	3.0	1	2	1	3	1	1	1	4	1	1	1	1	0	0	0	0	1	1	1	0	0	1	2	2	3	
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1	21	4.00	4	4.0	1	1	2	2	1	1	1	2	1	0	1	1	0	0	0	0	0	0	0	1	0	1	1	5	3	
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H9	H10	H11	H12	H13	H14	H15	H16	H17	H18	H19	H20	H21	H22	H23	H24	H25	H26	H27	H28	H29	H30	H31
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H32a	H32b	H32c	H32d	H32e	H32f	H32g	H32h	H33a	H33b	H33c	H33d	H33e	H33f	H33g	H33h	H33i	H34a	H34b	H34c	H34d	H34e	H35	H36	H37	H38	H39	H40	H41	H42	H43	H44
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H45	H46	H47	H48	H49	H50	H51	H52	H53	H54	H55	H56	H57	H58	H59	H60	H61	H62	H63	H64	H65	H66	H67
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H91	H92	H93	H94	H95	H96	H97	H98	H99	H100	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	L11	L12	L13
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4	1	2	3	1	2	3	1	4	4	3	1	4	1	3	2	2	1	2	2	3	5	3
4	1	2	5	5	3	4	2	4	4	4	1	3	2	3	3	2	2	2	2	3	5	2
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5	3	2	3	4	3	3	2	4	2	4	2	4	4	3	4	2	2	3	3	2	4	3
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5	1	2	3	5	1	3	2	4	4	3	2	3	2	4	3	1	1	1	3	5	1	
4	3	2	1	3	3	3	1	4	3	3	2	4	3	4	2	2	2	2	2	5	3	
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2	2	2	3	5	1	1	2	4	5	2	1	4	1	4	1	1	1	1	1	2	5	2
4	1	1	3	4	NaN	2	2	4	4	3	2	3	1	4	2	1	1	1	1	3	5	2
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3	2	3	2	3	3	4	2	3	3	3	2	3	2	3	3	3	2	2	3	4	4	4
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4	2	1	1	5	2	1	1	5	5	3	2	4	2	3	1	1	2	3	2	3	4	1
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3	2	2	2	4	3	4	1	3	5	4	2	3	1	4	2	1	2	2	2	2	4	3
4	3	2	2	3	1	2	2	4	4	3	1	3	2	4	1	1	1	1	1	4	1	

L37	L38	L39	L40
3	2	5	2
4	2	4	2
2	1	3	1
2	3	4	2
3	2	3	2
1	2	4	2
2	2	4	3
2	1	3	2
4	3	3	3
2	2	4	2
1	2	3	1
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3	3	3	2
1	2	3	2
4	2	3	3
1	2	3	2
2	2	4	2
3	3	4	2
1	1	1	3
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2	2	3	3
2	4	4	2
3	2	4	2
3	1	3	3
3	2	3	2
3	2	3	2
4	2	3	2
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1	1	4	1
3	3	4	1
3	2	4	4
1	3	3	2
2	2	4	NaN
2	1	4	2
2	3	4	2
2	1	4	2

1	3	5	1
3	3	4	2
3	3	4	2
3	1	3	3
3	3	4	3
2	2	5	2
2	3	4	3
4	3	4	3
2	2	5	2
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2	2	3	3
1	1	2	2
3	2	4	2
2	4	4	3
2	2	5	2
3	2	5	2
1	2	4	3
1	1	3	1

```
>>describe 'gender-utk inits-leader2'
```

	Mean	StdDev	Skewness	Kurtosis	Minimum	Median	Maximum	N
Gender	0.5842	0.4953	-0.3364	-1.9054	0.0000	1.0000	1.0000	101
Age	21.0700	1.1124	-0.3106	-0.2614	18.0000	21.0000	23.0000	100
GPA	3.5058	0.3915	-0.4864	-0.8924	2.5000	3.5750	4.0000	100
Year	3.3960	0.8376	-1.1395	0.2310	1.0000	4.0000	4.0000	101
UTK	3.2772	1.0404	-0.2477	-0.3570	1.0000	3.0000	6.0000	101
InitS	22.9293	4.5831	0.3756	0.5367	12.0000	23.0000	36.0000	99
RoleA	23.2020	4.0330	0.5083	0.0526	15.0000	23.0000	35.0000	99
Consid	20.1111	4.0529	0.7359	0.8089	13.0000	20.0000	34.0000	99
ProdE	26.1313	5.4485	-0.0296	-0.2852	13.0000	26.0000	40.0000	99
LeadUT	0.7525	0.4337	-1.1527	-0.6777	0.0000	1.0000	1.0000	101
LeadHS	0.8119	0.3928	-1.5724	0.4776	0.0000	1.0000	1.0000	101
LeadCol	0.7300	0.4462	-1.0206	-0.9677	0.0000	1.0000	1.0000	100
Leader	0.9100	0.2876	-2.8224	6.0267	0.0000	1.0000	1.0000	100
LeadGrk	0.2079	0.4078	1.4181	0.0115	0.0000	0.0000	1.0000	101
LeadRelg	0.2376	0.4278	1.2146	-0.5296	0.0000	0.0000	1.0000	101
TNScholar	0.1782	0.3846	1.6567	0.7526	0.0000	0.0000	1.0000	101
WHScholar	0.1782	0.3846	1.6567	0.7526	0.0000	0.0000	1.0000	101
Leader2	0.8020	0.4005	-1.4931	0.2320	0.0000	1.0000	1.0000	101

```
>>freq 'gender-utk inits-leader2'
```

```
Frequencies for Gender
```

Gender	Freq	Cum	Pct	Cum Pct
0	42	42	41.6	41.6
1	59	101	58.4	100.0

```
Frequencies for Age
```

Age	Freq	Cum	Pct	Cum Pct
18	1	1	1.0	1.0
19	9	10	8.9	9.9
20	16	26	15.8	25.7
21	39	65	38.6	64.4
22	26	91	25.7	90.1
23	9	100	8.9	99.0
	1	101	1.0	100.0

```
Frequencies for GPA
```

GPA	Freq	Cum	Pct	Cum Pct
2.5	1	1	1.0	1.0
2.7	1	2	1.0	2.0
2.75	2	4	2.0	4.0
2.8	3	7	3.0	6.9
2.9	2	9	2.0	8.9
2.99	1	10	1.0	9.9
3	8	18	7.9	17.8
3.05	1	19	1.0	18.8
3.1	2	21	2.0	20.8
3.2	2	23	2.0	22.8
3.25	5	28	5.0	27.7
3.3	7	35	6.9	34.7
3.34	1	36	1.0	35.6
3.37	1	37	1.0	36.6
3.4	4	41	4.0	40.6
3.41	1	42	1.0	41.6
3.46	1	43	1.0	42.6
3.48	1	44	1.0	43.6
3.5	5	49	5.0	48.5

Effect Leader2:

Leader2	---MEAN---	-LSMEAN--
	H60	H60
0	2.450	2.450
1	2.487	2.487

b =

VData(VCases,103)

b =

VData(VCases,195)

General Linear Model for: H61

Source	DF	Sum of Squares	Mean Square	F	Pr>F
Leader2	1	6.9842	6.9842	6.4996	0.0123
Error	99	106.3821	1.0746		
Corrected Total	100	113.3663			

R-Square	Adj.R-Sq	C.V.	RMSE	Mean
0.0616	0.0521	35.4908	1.0366	2.9208

Means and Least Squares Means:

Effect Leader2:

Leader2	---MEAN---	-LSMEAN--
	H61	H61
0	3.450	3.450
1	2.790	2.790

b =

VData(VCases,104)

b =

VData(VCases,195)

General Linear Model for: H62

Source	DF	Sum of Squares	Mean Square	F	Pr>F
Leader2	1	0.0344	0.0344	0.0367	0.8484
Error	99	92.6389	0.9357		
Corrected Total	100	92.6733			

R-Square	Adj.R-Sq	C.V.	RMSE	Mean
0.0004	-0.0097	29.4281	0.9673	3.2871

Means and Least Squares Means:

Effect Leader2:

```
vselect
-> All 101 cases selected.
-> temp recomputed, 0 cases set to missing.
temp:=h54==1
-> temp recomputed, 0 cases set to missing.
temp:=h54==2
-> temp recomputed, 0 cases set to missing.
temp:=h54==3
```

```
expected =
    17.8218    72.1782
     2.1782     8.8218
deviation =
    -3.8218     3.8218
     3.8218    -3.8218
```

Crosstabulation of temp by Leader2

	0	1	Total
0	14	76	90
1	6	5	11
Total	20	81	101

```
Fisher's Exact Test: p = 0.0071
Chi-Square = 9.38 @ 1 df, p = 0.0022
Phi = 0.2881, Cramer's V = 0.3048
Polychoric Correlation = 1.6300
```

```
-> temp recomputed, 0 cases set to missing.
temp:=h54==4
-> temp recomputed, 0 cases set to missing.
temp:=h54==5
```

```
expected =
    10.0990    40.9010
     9.9010    40.0990
deviation =
     5.9010    -5.9010
    -5.9010     5.9010
```

Crosstabulation of H4d by Leader2

	0	1	Total
0	16	35	51
1	4	46	50
Total	20	81	101

```
Fisher's Exact Test: p = 0.0030
Chi-Square = 8.68 @ 1 df, p = 0.0032
Phi = 0.2758, Cramer's V = 0.2932
Polychoric Correlation = 0.4916
```

```
expected =
    14.4554    58.5446
     5.5446    22.4554
deviation =
     4.5446    -4.5446
    -4.5446     4.5446
```