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Trait approach to leadership in campus organizations: the Hogan Personality Inventory as a predictor

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TRAIT APPROACH TO LEADERSHIP IN CAMPUS ORGANIZATIONS: THE HOGAN PERSONALITY INVENTORY AS A PREDICTOR

by

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ABSTRACT

The trait approach to leadership has been researched extensively and applied to several fields. This study examined whether or not student leadership in registered student organizations is related to personality traits on the Missouri University of Science and Technology campus from spring semesters 2008, 2009, and 2010. It also explored whether or not traits are related to students joining organizations, during these same semesters. The students' personalities were evaluated using the Hogan Personality Inventory (HPI), which entering freshmen voluntarily completed. The seven scales of the HPI are Adjustment, Ambition, Sociability, Interpersonal Sensitivity, Prudence, Inquisitiveness, and Learning Approach. Personality results were combined with co-curricular transcript data for students in organizations. This data included the leadership positions students held, specifically the positions of president, vice president, treasurer, and secretary. Based on the 2007 freshmen class, only interpersonal sensitivity correlated significantly with holding a leadership role at a later point and that role was president. Similarly, the interpersonal sensitivity scores on the HPI were statistically different for students who were presidents from the rest of the student population that year. This poses the idea that based on students' HPI scores, one can predict at a level higher than chance which students will become presidents of S&T campus organizations. This study also found that traits from the HPI correlated with the type of organization joined (i.e. students joining Greek, honor and professional, academic departmental, and design organizations). Finally, being a member of a Greek organization had the strongest relationship found in this study. Members of Greek organizations were the most sociable while being the least prudent.

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TABLE OF CONTENTS

LIST OF ILLUSTRATIONS

LIST OF TABLES

1. INTRODUCTION

1.1. STUDENT LEADERSHIP

Astin (1985) showed and Logue et al. (2005) later reported that student leaders in extracurricular organizations were more likely to have a better learning experience and stronger development during their college years. Several indications do exist that universities seem interested in enriching the experience of students outside of the classroom. Through organizational membership it is believed that students' experiences in college can be greatly improved and learning can be maximized. Moreover, today's employers are interested now, more than ever, in extracurricular involvement and leadership. Employers are looking for well-rounded students who might add value to their organizations in a variety of ways. Hence, to evaluate those students on more than an academic basis, many large corporations use situational and behavioral interviews to learn about a candidate's situational and leadership experience in previous jobs or in campus activities. Because of this expectation, Missouri S&T strives to give students the best experience possible by giving students maximum opportunities to develop outside of the classroom. This is accomplished by allowing for the creation of a wide variety and number of student run campus organizations and programs and by giving latitude to the students with regard to how they run these campus organizations. Most of these organizations are best thought of as independent entities that are solely lead by students.

Missouri S&T has administered the Hogan Personality Inventory, a seven scale personality inventory, for several years to entering freshmen and has used the results to help better understand the students at the university so as to better help them succeed and optimize their college experiences. The availability of the HPI data and the co-curricular transcript data created an opportunity to explore relationships between personality traits and extracurricular involvement and leadership. There were three general questions driving this study:

Is there a relationship between personality traits and how many organizations a student joins?

Is there a relationship between personality traits and the type of organizations students join?

Is there a relationship between personality traits and students holding leadership positions?

Using the trait approach to leadership is not a new idea. It has been researched for decades by several prominent personality psychologists such as Judge, Bono, Zaccaro, Hogan, and Stogdill. Research has also been conducted about why people choose organizations (Judge and Cable, 1997). This research reveals that people choose organizations based on the culture of the organization, and certain personality traits will influence the culture to which a person is attracted. Although such research has been done with corporations, not much has been done examining students' organizational membership and leadership at universities. This study will attempt to do this.

1.2. HYPOTHESES

The following are the formal hypotheses for this study.

The number of organizations a student joins is expected to correlate positively with multiple scales of the HPI.

Being a member of almost any type of organization will correlate with at least some of the seven HPI scales. Moreover, these correlations are expected to be stronger for some organizations than for others.

There will be a difference between those students who join organizations and those who do not. Also, it is expected that there will be a difference between students holding the role of president and other students who are in organizations. Similarly, those holding executive leadership roles are expected to have scores that differ from the other students in organizations.

2. LITERATURE REVIEW

2.1. TRAIT APPROACH TO LEADERSHIP

Several approaches have been taken with regard to leadership (i.e. trait, style, and situation). These approaches reveal different aspects of leadership. Particularly relevant to this study, the trait approach examines how one's personality can determine whether they become a leader and how effective they might be once they are in the leadership position. With decades of research in this area, there have been many studies that have created a strong body of knowledge in this field.

In the development of personality trait theory a model known as the Five Factor Model (FFM) of Personality emerged. According to Northouse (2010) a consensus has emerged from the research of several investigators regarding the basic factors that make up what we call personality (Goldberg, 1990; McCrae & Costa, 1987). This consensus, called the Big Five, includes neuroticism, extraversion, openness, agreeableness, and conscientiousness. The Big Five came about as a result of six decades of research on the relationship between traits and leadership. Stogdill conducted two important surveys (1948, 1974) that summarized the early research in this field. His first survey implied that personality traits affected leadership, but not nearly as much as situational effects did. However, his second study revealed more balanced results between traits and situational effects on leadership. All of these studies provided the basis for the Big Five. More recent research such as Judge, Bono, Ilies, and Gerhardt's large meta-analysis (2002) and Zaccaro, Kemp, and Bader's (2004) study correlated traits with leadership. Zaccaro et al.'s (2004) was not specifically based on the Big Five, but did include some of the dimensions of the FFM. The dimensions in the FFM are the basis for most current research regarding to traits and leadership like the meta-analysis from Judge et al (2002).

Hogan and Holland (2003) suggest that two motivational dimensions exist in people, which relate to task performance and contextual performance. The former focuses on the "getting-ahead" motives associated with structuring work and getting things done. The latter focuses on the "getting-along" motives associated with facilitating the psychological and social contexts of work. (Oh & Berry, 2009, p. 1500)

Several different approaches to leadership take into account these two motives of task motivation and contextual or relationship. For example, the style approach to leadership characterizes leadership styles in terms of concern for results (task motivation) and concern for people (relationship contextual motivation). Blake and Mouton (1985) created the Leadership Grid® with 5 different leadership styles arranged on a grid with the concern for results along the abscissa and the concern for people along the ordinate. The styles include the authority compliance (9, 1) style that is very high on concern for results, which contrasts with the country club (1, 9) that is very high on concern for people. At the opposite corners of the grid are the team style (9, 9) that is high on both concern for results and people, which contrasts with the impoverished style (1, 1) that is low on both concerns. (Northouse, 2010)

Similarly, the situational approach to leadership also focuses on the two basic motives and looks at them in terms of behavior in situations. Like Blake and Mouton's Leadership Grid®, Blanchard (1985) and Blanchard et al. (1985) developed the Situational Leadership II (SLII) model with directive behavior, or task motivation, on the abscissa and supportive behavior, or contextual motive, on the ordinate. Dealing with situations with high directive and low supporting behavior is a directing style and dealing with situations with high supportive and low directive behavior is a supporting style. Conversely being high on both behaviors is a coaching style and being low on both behaviors is a delegating style. (Northouse, 2010) Different situations will call for different styles, but both the style and situational approach fit with the two basic motivations of people: task performance and contextual performance.

The dimensions of the FFM can also fit into the two motives mentioned above with openness and agreeableness associated solely with the getting ahead and getting along motives respectively. The other three dimensions of conscientiousness, extraversion, and adjustment fit into both categories. This view of personality is relevant to how someone is perceived by others and how effective they would be as a leader. An effective leader would be "skilled at building relationships and acquiring status" (Hogan & Kaiser, 2005, p. 3). Effectiveness is just one facet of leadership; another facet would also include the aspect of leader emergence. "Persons who emerge as leaders in one situation also emerge as leaders in qualitatively different situations." (Zaccaro, 2007,

p.10) According to studies presented by both Zaccaro (2007) and Judge et al. (2002), leader effectiveness and emergence can both be related to personality traits. Personality traits are a foundation for leadership that skills, style, and situation approaches build upon.

One of the most conclusive studies on the trait approach to leadership is Judge et al.'s (2002) meta-analysis of 78 studies on personality and leadership. Judge et al. examined both the criteria for effectiveness and emergence and personality traits into a single review. It revealed that extraversion had the strongest effect on leadership, in general, with conscientiousness and openness the next most significant. All correlations mentioned thus far were greater than 0.24. Neuroticism had a fairly strong negative relationship with leadership and was the only dimension to correlate negatively with leadership. Finally, agreeableness had a weak correlation to leadership with a value of 0.08.

This review, as noted previously, also included a meta-analysis on the same 78 studies for both leader emergence and leadership effectiveness. Extraversion was still the most influential Big Five variable on leadership emergence. Conscientiousness and openness also had strong correlations with leader emergence, and neuroticism correlated negatively. Agreeableness, again, had a very weak correlation with leader emergence with a value of 0.05.

Regarding leadership effectiveness, neuroticism again correlated negatively. Conscientiousness had a weaker correlation than it previously had with leader emergence, and agreeableness had a stronger correlation with leadership effectiveness than with leader emergence.

To summarize, the meta-analysis revealed that extraversion had the most consistent correlation, followed by conscientiousness and openness. Neuroticism was consistently negatively correlated to leadership in all cases, and agreeableness was more ambiguous and had weak correlations in general. Judge et al. (2002) also goes on to note that "this overall result is masked somewhat by differences in criteria and setting…There were two situations in which agreeableness was related to leadership – when the criterion was effectiveness and with student samples." (p. 774). Judge et al. (2002) states that the Big Five traits predicted student leadership better than business or government and

military leadership. Judge et al. suggest that "personality may have better predicted student leadership because…the situations were relatively unstructured with few rules or formally defined roles" and continues to explain that "the relations we found between personality and leadership reflect, at least in part, individuals' naïve conceptions of leadership." (p. 774) Judge et al.'s meta-analysis serves as a reference point for much of the recent research and it serves as the benchmark to which current studies often compare results.

Leadership is important to the success of an organization and to the satisfaction of its members. Since personality traits may lay the foundation for good leadership, the relationship between personality traits of leaders and the fate of organizations would seem to be linked. Hogan and Kaiser (2005) present the linkage of personality traits and organizational performance as "personality predicts leadership style, leadership style predicts employee attitudes and team functioning; and attitudes and team functioning predict organizational performance." (p. 9) Hogan simply states in his book *Personality and the Fate of Organizations* that "who you are determines how you lead." (p.51) Since leadership is crucial to the fate of an organization, it is important that leadership be understood and clarified as thoroughly as possible.

2.2. HOGAN PERSONALITY INVENTORY

The California Psychological Inventory was the original model for the HPI. With revisions, the Hogan Personality Inventory (HPI) has come to more closely resemble the Five Factor Model (FFM) for personality. The development of the HPI began in the 1970s and attempted to answer what Hogan and Hogan (2007) believed to be "the two fundamental questions in personality assessment…what to measure and how to measure it." (p. 15) Following a factor analysis procedure it was seen by Hogan and Hogan that some of the FFM dimensions included additional components that seemed to be independent. Hogan and Hogan addressed this issue by creating the seven scales of the HPI found in Table 2.1. Also in Table 2.1 is the relation of the HPI scales to the dimensions of the FFM. With these scales defined Hogan and Hogan (2007) found that each of them could be broken down into subthemes called Homogeneous Item

Composites (HICs). After years of refinement and inclusion of a validity scale, the HPI became a 206 item test including 41 HICs. Table 2.2 lists the HICs associated with each of the seven scales and gives a sample type of question for each HIC.

Table 2.1. HPI Scale Description (Hogan and Hogan, 2007)

FFM dimension	HPI Scale	Description
Neuroticism	Adjustment	the degree to which a person appears calm and self-accepting or, conversely, self-critical and tense
Extraversion	Ambition	the degree to which a person seems socially self-confident, leader-like, competitive, and energetic
	Sociability	the degree to which a person seems to need and/or enjoy interacting with others
Agreeableness	Interpersonal Sensitivity	the degree to which a person is seen as perceptive, tactful, and socially sensitive
Conscientiousness	Prudence	the degree to which a person seems conscientious, conforming, and dependable
Openness	Inquisitive	the degree to which a person is perceived as bright, creative, and interested in intellectual matters
	Learning Approach	the degree to which a person seems to enjoy academic activities and to value educational achievement for its own sake

Table 2.2. HPI HICs (Hogan and Hogan, 2007)

Adjustment	
HICs	**Sample Item**
Empathy	I dislike criticizing people, even when they need it.
Not Anxious	Deadlines don't bother me.
No Guilt	I rarely feel guilty about the things I have done.
Calmness	I keep calm in a crisis.
Even Tempered	I hate to be interrupted.
No Complaints	I almost never receive bad service.
Trusting	People really care about one another.
Good Attachment	In school, teachers liked me.

Table 2.2. HPI HICs (cont.) (Hogan and Hogan, 2007)

Ambition		
	HICs	**Sample Item**
	Competitive	I want to be a success in life.
	Self Confident	I expect to succeed at everything.
	Accomplishment	I am known as someone who gets things done.
	Leadership	In a group I like to take charge of things.
	Identity	I know what I want to be.
	No Social Anxiety	I don't mind talking in front of a group of people.
Sociability		
	HICs	**Sample Item**
	Likes Parties	I would go to a party every night if I could.
	Likes Crowds	Being part of a large crowd is exciting.
	Experience Seeking	I like a lot of variety in my life.
	Exhibitionistic	I like to be the center of attention.
	Entertaining	I am often the life of the party.
Interpersonal Sensitivity		
	HICs	**Sample Item**
	Easy to Live With	I work well with other people.
	Sensitive	I always try to see the other person's point of view.
	Caring	I am sensitive to other people's moods.
	Likes People	I enjoy just being with other people.
	No Hostility	I would rather not criticize people, even when they need it.
Prudence		
	HICs	**Sample Item**
	Moralistic	I always practice what I preach.
	Mastery	I do my job as well as I possibly can.
	Virtuous	I strive for perfection in everything I do.
	Not Autonomous	Other people's opinions of me are important.
	Not Spontaneous	I always know what I will do tomorrow.
	Impulse Control	I rarely do things on impulse.
	Avoids Trouble	When I was in school, I rarely gave the teachers any trouble.
Inquisitive		
	HICs	**Sample Item**
	Science	I am interested in science.
	Curiosity	I have taken things apart just to see how they work.
	Thrill Seeking	I would like to be a race car driver.
	Intellectual Games	I enjoy solving riddles.
	Generates Ideas	I am known as having good ideas.
	Culture	I like classical music.
Learning Approach		
	HICs	**Sample Item**
	Good Memory	I have a large vocabulary.
	Education	As a child, school was easy for me.
	Math Ability	I can multiply large numbers quickly.
	Reading	I would rather read than watch TV.

The HPI also includes a validity scale of 14 items used to determine if a person is just randomly answering the questions or trying to answer questions to consciously influence the results. The results of the HPI are ambiguous as raw scores which is why percentile scores are reported. These percentile scores were normalized against a sample of 156,614 working adults with a majority holding office and administrative support positions. The sample included adults who were primarily white and under 40 years old. Based on this data the norms for scales of the HPI were developed and raw scores were turned into percentiles.

The reliability and stability of the HPI was examined by Hogan and Hogan in multiple ways. One way stability was explored was by administering the HPI to the same group of students twice over a short period of time to determine short term stability. For long term stability, job applicants for the same company took the test eight years apart. According to Hogan and Hogan (2007), "there are only relatively small discrepancies between these two sets of scores." (p. 39) This demonstrated that the HPI was a reliable and stable measure of a person's personality.

3. METHODOLOGY

3.1. PARTICIPANTS

Participants in this study were incoming freshmen at Missouri S&T who appeared in each of the two data sets: those taking the HPI and those with co-curricular transcript data. These students were around 18 years old and, consistent with the campus gender distribution, predominantly male (71.8%). Missouri S&T is a technological university where the majority of the students major in engineering or a science field. The organizational data obtained began during a participant's second semester on campus and continued for the next two consecutive spring semesters participants were on campus.

3.2. DATA SOURCES

3.2.1. Hogan Personality Inventory. Entering freshmen at Missouri S&T were asked to voluntarily complete the HPI online as part of their orientation process. The purpose of students participating in the study was presented in the letter of informed consent (refer to Appendix A). It was explained that the university would use the data collected to "build a more effective learning environment, shape campus programs…, and allow [the university] to know more about [its] students so [it] can help them succeed" (See Informed Consent Letter, Appendix A). Students received feedback as to how they scored on the HPI through an electronic Career Builder Report. This report informed students about themselves in terms of their strengths and weaknesses, which could be useful in developing their professional careers. Students' results from the HPI were recorded and coded using their student ID numbers as an identifier for data analysis. Names were not used so as to maintain confidentiality.

3.2.2. Co-curricular Assessment of Skills and Education. At Missouri S&T the Department of Student Life manages the Co-Curricular Assessment of Skills and Education (CASE), more commonly referred to as a co-curricular transcript. A co-curricular transcript lists a student's activities outside of the classroom, including membership in organizations with any corresponding leadership roles, employment, and anything else that students might want documented concerning their extracurricular experiences at Missouri S&T. The main purpose and use of this co-curricular transcript is to provide students with a record of their membership and leadership positions in organizations. These transcripts aid in preparation of resumes and also serve as official documentation of extracurricular involvement and leadership that can be presented to potential employers. The data in these transcripts is a combination of self-reported and direct submission by organizations of membership rosters and leadership position holders to Student Life. The data used in this study came from the latter and was closely monitored by Student Life for accuracy. Even so, there were no measures of validity or reliability made available for evaluating the accuracy of these co-curricular transcripts. Hence, there is the possibility of a degree of variability associated with quality of the information found in each of the co-curricular transcripts as it pertained to any given individual.

3.3. PROCEDURE

As described in the previous section, data for this study came from students' HPI results and co-curricular transcripts. Data that was deemed unnecessary to this particular study was eliminated from both the HPI results and the co-curricular transcripts data files that were provided. The data that was retained is shown in Appendix B. Because the data came from two separate sources, student ID numbers were utilized to correlate the data. Thus, students who appeared in both data sets became the participants for this study and their corresponding information from both sources, HPI and co-curricular transcripts, became the data used for analysis.

To make the data from the co-curricular transcripts concise and more easily used for statistical analysis, some conversion and editing was done. The number of organizations each student belonged to was counted and documented in the Number of Organizations variable. Also, whether or not a student held a leadership role was determined. If a student held an office, a 1 was given in the Leadership Role variable, otherwise a 0 was given. Similarly, how many leadership roles a student held was determined and documented in the Number of Leader Roles variable. If a student held the same position in two different organizations, this was counted as two leadership roles. But if a student held the same position multiple times in the same organization, this was counted as only one leadership role. Further, the leadership roles were looked at more closely and broken down into the 'executive' positions of president, vice president, treasurer, and secretary. If a student held one of those roles, a 1 was documented in the Executive variable, otherwise a 0 was documented. Likewise, if students held a specific role, a 1 was documented in the corresponding variable of President, Vice President, Treasurer, or Secretary. Otherwise, a 0 was documented in those variables. It was possible for a student to receive a 1 in multiple executive position variables if they held more than one of these roles. However, if a student was president in multiple organizations that was not taken into account; only that the student held the role of president. Lastly, the organizations students belonged to were broken down into the twelve classifications previously created by Student Life. Table 3.1 gives the breakdown of organizations and descriptions. Fraternities and Sororities were combined into one

variable called Greek. If a student belonged to at least one organization of that type a 1 was documented in the corresponding variable, but if they did not, a 0 was documented. A complete list of variables can be found in Appendix C.

3.4. ANALYSIS

A statistical analysis, using Statistical Package for the Social Sciences (SPSS), was used to analyze the data in order to address the hypotheses. Descriptive statistics, paired independent sample t-tests, and bivariate correlations were performed. The correlations performed were between types of organizations students joined and the seven scales of the HPI as well as leadership roles and the seven HPI scales. Other correlations done were between number of organizations students joined with the seven scales of the HPI and number of leadership roles with the seven scales of the HPI.

Table 3.1. Organization Classification and Description

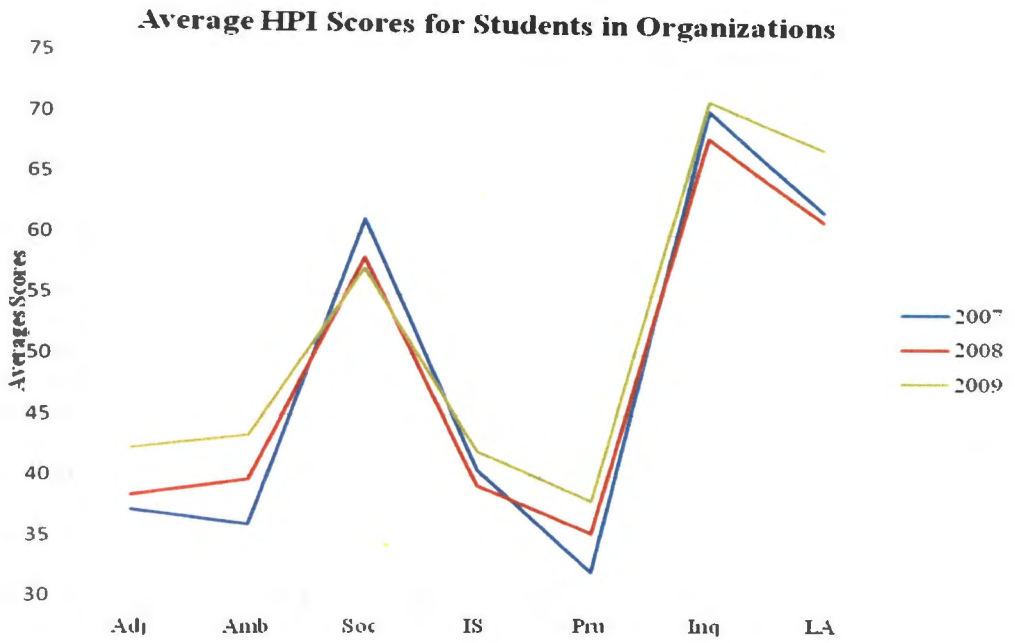
Organization Classification	Description	Number of Organizations
Academic Departmental	Organizations associated with a discipline represented on campus. (i.e. American Society of Engineering Management, History Club, Society of Mining Engineers)	42
Honor and Professional	Organizations associated with honor societies and academic performance. (i.e. Eta Kappa Nu, Psi Chi, Tau Beta Pi)	25
Intercultural	Organizations associated with different cultures. (i.e. India Association, Association of Black Students)	10
Media and Publication	Organizations associated with newspapers, radio stations, and the yearbook.	4
Governing and Programming	Organizations that have governing powers and those that plan campus programs. (i.e. Student Council, Panhellenic Council, and Student Union Board)	8
Sports and Recreation	Organizations associated with recreational activities and sports.	25
Religious	Organizations associated with different religious affiliations. (i.e. Catholic Newman Center, Christian Campus Fellowship)	14
Residential Hall	Organizations associated with the various residential halls on campus.	3
Service	Organizations that perform community service.	8
Social and Special Interest	Organizations associated with the various interests of the campus community. (i.e. College Democrats, BBQ Club, Academic Competition Team)	23
Design Teams	Organizations that design and build projects for competitions. (i.e. Solar House Team, Human Powered Vehicle Team, Concrete Canoe Team)	11
Fraternities and Sororities	National social fraternities and sororities represented on campus.	27

4. RESULTS

4.1. DESCRIPTIVE STATISTICS

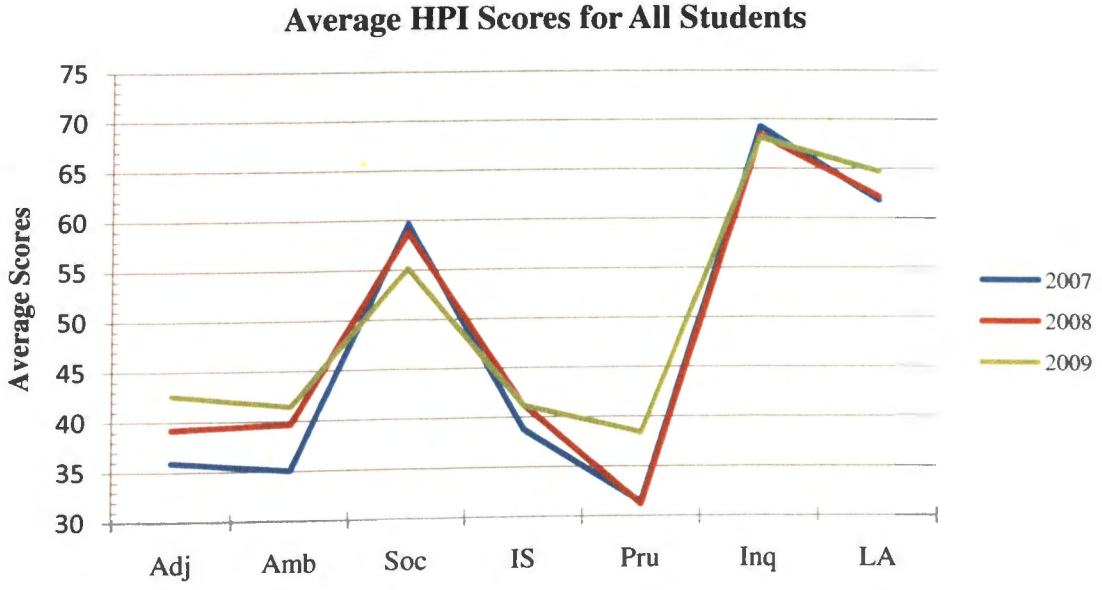
As noted earlier, the data included three years of HPI scores from 2007, 2008, and 2009. Figure 4.1 illustrates that the scores for these years were very similar. Hence results were not expected to vary between the years. Due to this similarity, only results from the 2007 HPI test were presented. This meant that organizational data from spring semester 2008, spring semester 2009, and spring semester 2010 were all taken into account because students who were freshmen in 2007, when they took the HPI, were on campus for all of these semesters. This would not have been the case for the 2008 or 2009 HPI data since the students would not have been enrolled for the spring semester 2008 and spring semester 2009 respectively. This choice was important because it gave a greater amount of reliable data for the study since students from 2007 had more time to join organizations and move into leadership positions within the organizations. Figure 4.2 shows the profiles for the entire student population, including those students who joined. Students in these two figures are not very different from each other.

Statistics such as means, numbers of participants, and standard deviations are detailed in Table 4.1. The table gives statistics for all students who took the HPI in 2007, those that took the HPI in 2007 and were members of organizations in the three spring semesters mentioned, those holding leadership roles, those holding an executive role, and those that were presidents of organizations. The HPI scores are percentile scores and range from 0 to 100.



Ajd-Adjustment, Amb-Ambition, Soc-Sociability, IS-Interpersonal Sensitivity, Pru-Prudence, Inq-Inquisitive, LA-Learning Approach

Figure 4.1. Average HPI scores for students in organizations. HPI scores plotted based on average percentiles for the seven scales for each year. Averages are from those students who took the HPI and joined organizations.



Ajd-Adjustment, Amb-Ambition, Soc-Sociability, IS-Interpersonal Sensitivity, Pru-Prudence, Inq-Inquisitive, LA-Learning Approach

Figure 4.2. Average HPI scores for all students. HPI scores plotted based on average percentiles for the seven scales for each year. Averages are from all students who took the HPI each year.

Table 4.1. Descriptive Statistics for 2007

	All HPI participants	Organization members	Non-organization members	Leadership role holders	Executive position holders	Presidents
Number of Participants (N)	669	421	248	181	133	43
Means						
Adjustment	35.95	37.15	36.60	35.70	35.42	40.00
Ambition	35.06	35.95	33.57	35.40	36.03	35.26
Sociability	59.61	61.19	56.94	60.22	58.84	61.58
Interpersonal Sensitivity	38.77	40.51	35.83	38.29	38.21	47.58
Prudence	31.42	31.99	30.47	31.04	30.51	30.95
Inquisitive	69.31	70.38	67.49	68.23	67.90	70.40
Learning Approach	61.82	62.04	61.45	62.24	63.07	57.72
Standard Deviations						
Adjustment	25.487	25.594	25.352	23.769	24.055	24.047
Ambition	25.382	25.050	25.917	24.219	24.366	23.987
Sociability	27.760	27.766	27.601	27.040	26.852	27.059
Interpersonal Sensitivity	31.269	30.838	31.835	31.059	31.353	31.982
Prudence	24.789	25.764	23.059	24.372	24.497	24.831
Inquisitive	23.190	22.183	24.747	24.561	24.928	22.903
Learning Approach	24.802	24.542	25.284	24.744	24.002	24.084

The average number of organizations to which a student taking the HPI in 2007 belonged to was 1.9. Students that belonged to organizations were distributed in various ways among the twelve types of organizations according to Table 4.2.

Table 4.2. Number of Students Belonging to an Organization of the 12 Classifications

Type of Organization	**Number of students who belonged to an organization of these types**
Academic Dept	95
Honor/Professional	100
Intercultural	7
Media/Publication	5
Govern/Program	51
Sports/Recreation	41
Religious	83
Res Hall	8
Service	75
Social/Special Interest	42
Design Teams	39
Greek	190

4.2. COMPARING GROUPS USING T-TESTS

Two tailed independent sample t-tests were run for several types of groups which appeared in the data and are shown in Tables 4.1 and 4.2. This was done to test the hypotheses that students who joined organizations and were leaders were statistically different than their peers who did not join organizations or hold leadership roles. The alpha value to determine significance was 0.05. Significance values, denoted by p, less than 0.05 were considered significant and values between 0.05 and 0.1 were considered marginally significant.

Results showed a marginally significant difference between students who did not join organizations (N = 248) and those who did (N = 421) in sociability (M = 56.94, M = 61.19, p = 0.056) and interpersonal sensitivity (M = 35.83, M = 40.51, p = 0.062). As seen in Table 4.1 the average percentiles of the seven scales were higher for students in organizations than for those that did not join organizations. However, results showed no significant difference between students who held executive positions (N = 133) and all others who took the HPI (N=536). Even so, those students who were presidents (N = 43) showed a marginally significantly higher interpersonal sensitivity score (M = 47.58, M = 38.17, p = 0.056) than those who were not (N = 626). Students who were presidents were 9.415 higher in their percentile scores than other students in interpersonal sensitivity. Yet, the results revealed no significant difference between students who were presidents (N = 43) and the students in organizations that did not hold the role of president (N = 378). Students who were president had higher average percentile scores in adjustment, sociability, interpersonal sensitivity, and inquisitiveness than did those who were members of organizations but who did not hold the role of president. Finally, among the executive position holders, there was a significant difference in interpersonal sensitivity (M = 47.58, M = 33.73, p = 0.017) between those who were presidents and those that held the other executive positions of vice president, treasurer, and secretary. Students who were presidents scored, on average, 13.848 percentiles higher than those holding the other executive roles. Other comparisons did not approach marginally significant levels.

4.3. CORRELATIONS

Correlations were performed among the seven scales of the HPI and organization types, number of organizations a student belonged to, and executive roles. Only some of the correlations were statistically significant based on a two tailed test with an alpha value of 0.05. Any p value less than or equal to 0.05 was considered a significant correlation. All reported correlation results were obtained using a point biserial correlation, a form of a Pearson correlation, because the co-curricular transcript data was dichotomous and the HPI data was continuous.

Regarding the hypotheses related to the number of organizations joined and the relationship between the scores on the HPI and the number of leadership roles a student held, there was no correlation between any of the seven HPI scales and how many organizations students joined. Nor was there a correlation between any of the scales and if a student held a leadership role, nor with how many leadership roles they held.

The results of correlations between the seven scales of the HPI and type of organization are summarized in Table 4.3. Only the statistically significant correlations between type of organization and the 7 scales of the HPI are shown. There is a negative relationship between adjustment and both academic departmental and governing/programming organizations. There is only a negative correlation between ambition and honor and professional organizations. Sociability is negatively correlated with honor and professional organizations and design teams, but positively correlated with Greek organizations. There is a negative relationship between interpersonal sensitivity and design teams. The correlations between prudence and honor and professional organizations and religious organizations are positive and the correlation is negative with Greek organizations. Inquisitiveness correlates negatively with academic departmental and honor and professional organizations and correlates positively with governing and programming organizations. There was no relationship between learning approach and any type of organization. The strongest correlations were among Greek organizations for both sociability and prudence.

Table 4.3. Statistically Significant Correlations for Types of Organizations

	Adjustment	Ambition	Sociability	Interpersonal Sensitivity	Prudence	Inquisitive	Learning Approach
Organization Types							
Academic Dept	-0.168	-	-	-	-	-0.104	-
Honor/Professional	-	-0.136	-0.171	-	0.100	-0.102	-
Govern/Program	-0.120	-	-	-	-	0.114	-
Religious	-	-	-	-	0.109	-	-
Design Teams	-	-	-0.177	-0.105	-	-	-
Greek	-	-	0.238	-	-0.176	-	-

Correlations between the seven scales of the HPI and each of the four executive positions were also examined. The only significant correlation was between being president and having greater interpersonal sensitivity ($r_{pb} = 0.207$). Since there was a relationship between being president and interpersonal sensitivity and no other executive role, interpersonal sensitivity was examined closer. The executive roles, as an entity, was additionally broken down by gender and correlated with interpersonal sensitivity. There was a statistically significant relationship between gender and interpersonal sensitivity ($r_{pb} = 0.220$) among those that held executive roles (N=133). Females (N=38) had a mean percentile score for interpersonal sensitivity of 49.08 compared to that of males (N=95) of 33.86. However, there was not a significant relationship between gender and interpersonal sensitivity among those students that were presidents.

5. DISCUSSION

5.1. INTRODUCTION

There has been extensive research on leadership and the trait approach to leadership by Judge, Zaccaro, Hogan, etc. In addition, research has also been done regarding those aspects which differentially affect college students' experiences. However, there has been little to no research exploring personality traits and the impact they have on student extra-curricular involvement and leadership. This study explored the relationships that traits have with students joining organizations and the influence these traits might have on students becoming leaders in campus organizations.

5.2. MISSOURI S&T STUDENTS

As shown in Figures 4.1 and 4.2, students' scores on the HPI varied little from year to year. Based on Figure 4.2, students as a whole at Missouri S&T were not very prudent, but were extremely inquisitive and had a very high average percentile score with regard to learning approach. Hogan (2007) gives an average percentile range of 35 to 65 and any score above the 65^{th} percentile is considered high, and any score below the 35^{th} percentile is considered low. Students at Missouri S&T, overall, are average on all scales except the prudence and inquisitiveness scales, where they rank low and high respectively. This would suggest that these students are not very high on self-discipline and are not very conscientious, but they are bright, curious, imaginative, out of the box thinkers, and very good students.

Students just described can be subdivided into multiple groups as listed in Table 4.1. These groups present different profiles of students in that group and as shown by t-test results, some of these groups differ significantly from each other. For instance, there was a marginally significant difference in the scores on sociability and interpersonal sensitivity between students who joined organizations and those who did not. Students in organizations were shown to be more social and be more interpersonally sensitive as compared to those not in organizations. This supports the hypothesis that there would be

a difference in personality among those students who joined organizations and those who did not.

Similarly, there was a significant difference in interpersonal sensitivity between students who held the role of president and other students who took the HPI. This suggests that one should be able to better predict those students who will be more likely to become president of a campus organization by examining their interpersonal sensitivity score. Moreover, the results indicate that among a group of executive officers one might also better predict which of them would hold the role of president based on their interpersonal sensitivity score. These results provide some support for the hypothesis that students who were president would be different than those that were not. Even so, students who were president differed only from those that were not president and from other executive officers, but there was no difference between students who were president and those in organizations. Also, the only trait that set presidents apart from other groups was their interpersonal sensitivity scores, which fits with the research measuring the Big Five trait of Agreeableness. Judge et al. (2002) found in their meta-analysis that Agreeableness was the least relevant trait to leadership with the exception of student samples. The results of their meta-analysis were consistent with the results of this study because interpersonal sensitivity, or agreeableness, does correlate with student leadership. While Judge et al. showed a correlation between agreeableness and leadership among students, it still remained the weakest correlation of the Big Five as it had when looking at leadership in general. One possible reason for this difference may lie in how agreeableness and interpersonal sensitivity are formally defined by the Big Five and the HPI. Agreeableness is defined as "the tendency to be accepting, conforming, trusting and nurturing." (Northouse, 2010, p. 22) While interpersonal sensitivity is said to measure "the degree to which a person is seen as perceptive, tactful, and socially sensitive." (Hogan, 2007, p.19)

5.3. STUDENT ORGANIZATIONAL PROCLIVITY

The hypotheses were that each of the seven HPI scales would correlate with at least one type of organization that students joined in either a positive or negative direction.

Adjustment correlated negatively with both academic departmental and governing/programming organizations. The fact that the correlations are negative implies that students joining academic departmental and governing/programming organizations might tend to be less patient, less trusting, and less self-accepting. It could be seen that a student's tendency to be less trusting and their joining governing/programming organizations makes sense since they may not trust others to preside over organizations or put on meaningful programs for the campus.

Ambition correlated negatively with honor and professional organizations. So, instead of students that joined honor and professional organizations having a lot of ambition, as one might intuitively think, the results suggest that these students are not as competitive, energetic, or socially self-confident. It seems anomalous that students in honor and professional organizations would be less competitive, because in order to be a member of honor organizations a student would need a certain grade point average (GPA) and be invited to join. A high GPA does not just happen, it takes drive, dedication, and even a bit of competition to be more successful than a student's peers.

Sociability correlated negatively with honor and professional organizations and design teams, but correlated positively with Greek organizational membership. The strong positive correlation between Greek organizations and sociability is somewhat intuitive and fits with the stereotypes associated with members of Greek organizations. On the other hand, the negative correlation with honor and professional organizations and design teams implies that students joining these types of organizations have less of a need for or enjoy social interaction. Also, these students may not desire variety and may not enjoy being the center of attention. Members of design teams would be thought to enjoy social interaction because the nature of the organization forces interaction among team members and someone who may not enjoy social interaction would not seem to thrive in this environment. Not all students can be part of honor and professional organizations as mentioned above since there are GPA requirements that must be met. So, students in

honor organizations have a level of achievement that may at times inherently put them at the center of attention. The results showing that students in these organizations may enjoy this less gives the impression that either these students accept that being the center of attention comes with membership in these organizations, or the results reveal a conclusion that cannot be accurately made about the actual behavior of these students.

Interpersonal sensitivity correlated negatively with design teams, which suggests that students on these teams may be less perceptive, tolerant, or easy-going. Intuitively this might imply that students on design teams could be very set in their ways and not as open to other ideas. It could also suggest that they may not always see their options or how other people on the team are behaving.

Prudence correlated positively with honor and professional, and religious organizations and correlated negatively with Greek Organizations. Again, the negative correlation result for Greek organizations and prudence fits the stereotype of members of Greek organizations that some people have. The positive correlation between honor and professional and religious organizations indicates that students in these groups are conscientious, conforming and dependable. People with any religious affiliation can be conforming to some extent because they share the beliefs of others and accept the teachings of their faith. It seems that students in honor and professional organizations have to be conscientious to reach the level of achievement necessary for membership in honor organizations.

Inquisitiveness correlated negatively with academic departmental and honor and professional organization and correlated positively with governing/programming organizations. The negative correlation between inquisitiveness and academic departmental and honor and professional organizations suggests that students who join these types of organizations may not be overly analytical, creative, or interested in intellectual matters. This could be counter-intuitive because these organizations seem to be associated with success in academic majors and professional fields, or it could be thought that students join these types of organizations merely to add them to their resumes. The positive correlation between inquisitiveness and governing/programming organizations suggests students that join these organizations are investigative, bright, and can see the big picture. Students that belong to governing/programming organizations

most likely have to see the big picture in order to successfully manage and lead students on the campus and also create impactful and successful programs for the campus.

There were no relationships between the learning approach scale of the HPI and the types of organizations that students could join. Since most Missouri S&T students score high on this, there may simply not be much room for variation on this scale leading to no discernable relationship.

5.4. LEADERSHIP

The results indicate that there is not a relationship between the seven HPI scales and whether students were leaders in general. However, the results did show that when the leadership roles were broken down and classified into the four executive positions a relationship between interpersonal sensitivity and the role of president was revealed. There was a strong relationship between being president of an organization and having a score on interpersonal sensitivity. In his meta-analysis Judge et al. (2002) reported a weak correlation between leadership and Agreeableness (r=0.08); this was explored previously when discussing how students who were presidents differed from other groups of students. Since the only correlation with leadership in this study was with the role of president, this shows that students in the organization electing a president value an easy going, sensitive, caring, and tolerant person to lead them. For the other executive roles there was no correlation with the seven HPI scales. This suggests these roles may not be as important or as valued by members and that, for these roles, a certain type of person possessing a defined set of traits may not necessarily be as important.

6. CONCLUSION

6.1. SUMMARY

This study examined the relationship between personality traits and college student membership and leadership in campus organizations. Students at Missouri S&T took the Hogan Personality Inventory (HPI) as freshmen and their percentile scores on each of the seven scales were used as a measure of their personality. Combining these scores with co-curricular transcript data obtained from the Department of Student Life provided the data set used for analysis in this study. The study focused on two main aspects of campus organizations – types of organizations students joined and executive leadership in organizations.

There were twelve classifications of organizations to which every campus organization belonged. It was expected that there would be positive correlations between the scales of the HPI and several organization types. These results showed both negative and positive correlations with most of the seven scales and each type of organization. The scales of adjustment, ambition, and interpersonal sensitivity had strictly negative correlations, whereas the scales of prudence, sociability, and inquisitiveness were mixed, having both positive and negative correlations. In general the results of this study supported the hypothesis about types of organizations students joined, but not always in the direction expected.

The primary focus of this study was student leadership in campus organizations. Leadership was classified as holding the position of president, vice president, treasurer, or secretary and cumulatively these were referred to as the executive roles. Results revealed that the role of president was the only leadership position that had any significance in relation to personality. The lack of relationship between the executive offices, aside from president, showed that students did not put as much value on these positions and felt that possessing certain traits was unnecessary for these roles. On the other hand, students valued how likeable a person was and felt likeability or interpersonal sensitivity was necessary for a president to possess. The role of president stood out among most groups of students revealing that the higher a student scored in interpersonal sensitivity on the HPI the more likely they would be to be president. All things

considered, this study revealed that HPI scores on interpersonal sensitivity increased one's ability to predict student leadership in campus organizations on the Missouri S&T campus.

6.2. LIMITATIONS OF STUDY

A possible limitation of this study might lie with the quality of the organizational data that was obtained. There were no validity or reliability measures that could be associated with the co-curricular transcript data. The data found in these transcripts was reported by the organizations themselves and was totally dependent upon those who actually submitted their membership rosters and their leadership position holders to the Department of Student Life each semester. While Student Life does its best to monitor the organizations' submittals, a few organizations often do not submit their information. This could have affected the accuracy of the organization and leadership information used in this study. Also, organization membership is something that is greatly influenced by peers and the marketing efforts of the organizations. As a result, the membership and make up of each organization could change each semester based on student attitudes and peer relationships. However, students do not usually take on leadership roles after immediately joining an organization. Therefore the leadership roles probably would not have been affected much by the marketing the organization did or by the influence of a student's friend to join a certain organization.

Other than the organizational data limiting the study, the HPI might also impose limitations on the study. The HPI test is mainly used in the working world with working adults. This is who the test is normalized for, so the test may have less relevance for leadership issues among college students.

6.3. FUTURE RESEARCH

Future research on the effect personality traits have on student leadership should be done with a more comprehensive university with a broad range of student interests and organizations. A larger and more comprehensive university would provide a bigger data

set to be analyzed and more likely have a different student personality profile than the one shown in this study.

Future research should also be done to look at the effectiveness of the student leaders. Examining peer comments on the effectiveness of an organization leader and also measures of progress of the organization might provide an additional perspective on student leadership. Leader emergence was the focus of this study. How effective a leader was in a position did not enter into this study at all.

Future research could also be done using a different personality inventory with the same set of students. Addressing any differences in the results of that personality inventory with the HPI could provide more insight on students' organizational proclivities and student leadership in campus organizations.

Finally, the concept of this study could be applied solely to students in Greek organizations. This should provide a large and cohesive data set. In this study 190 of the participants were members of a Greek organization, which was the largest type of organization represented in the data. Research has been conducted on what impact being a member of a Greek organization has on the people in these organizations (Grubb, 2006; Sher et al., 2001; Pike, 2000), but not how personality traits influence involvement and leadership. It would be interesting to explore how personality traits affect leadership in the Greek community and how many fraternity and sorority members are also leaders in other organizations on campus.

APPENDIX A.

EXAMPLE INFORMED CONSENT LETTER

Dear [<student>]:

Missouri S & T is doing an extensive research study on the personal attributes that help students succeed in college. Results of this project will be used to help you and us build a more effective learning environment, shape campus programs in the future, and allow us to know more about our students so that we can better help them succeed.

This is an invitation to you to participate in this research by taking the Hogan Personality Inventory (HPI) via the internet. It takes about 15 to 20 minutes. The HPI has been standardized on several million adults. There are no foreseeable risks or discomforts in taking it. After completing the test you will electronically receive a confidential Career Development Report based on your answers to the survey. This feedback can be used to help your future professional career and your success here as a student.

Please be advised that your participation is totally voluntary. Should you participate, you may quit any time. You may also choose not to respond to a particular item. Also please be assured that your responses will be confidential. Your report, to be seen only by you, will be delivered electronically to you soon after you submit your responses. For purposes of data analysis, a numbering system (and not names) will be used. Your responses will be automatically encrypted electronically by Hogan Assessment Systems and only persons trained and certified by Hogan Assessment Systems will be able to link your name with the information you provide. Further, no personally identifying information will be used in scientific publications or presentations based on this research. Should you have any questions about this research feel free to contact me at (573) 341- 4378 or the UMR Institutional Review Board office at (573) 341-4305.

By clicking on the link below you are indicating that you are 18 years or older, that you have read the information above, and that you are providing explicit, informed consent concerning your participation in the present study.

To continue, please access our on-line testing site at:
http://www.gotohogan.com/participant

User ID: 123456789
Password: student

Once you have entered your user ID and password, click "submit" and follow the instructions. To get your report, log back into the site after completing the assignment and once logged in you can download your Career Development Report as a PDF file. If you have any difficulty logging in, please email support@hoganassements.com or call at 918.749.0632.

We sincerely appreciate your consideration regarding your participation with this important project.

Jay Goff, Dean of Enrollment Management

APPENDIX B.
RETAINED DATA

Remaining Data	Format
HPI	
Student ID numbers	7-8 digit number
Test year	2007, 2008, 2009
Gender	Male, Female
Percentile scores on seven scales	Percentile 0-100
Co-curricular transcripts	
Student ID numbers	7-8 digit number
Semester	SP 08, SP 09, SP 10
Office held	P, V, T, S, M, A, 1, 2, 3, 4
Name of organization	String
Type of organization	1, 2, 3, 4, 5, 6, 7, 8, 9, A, D, F, S

APPENDIX C.
COMPLETE LIST OF VARIABLES

Variable	Expected Values
Test Year	2007, 2008, 2009
Student Number	7 or 8 digit number
Gender	1=male, 2= female
Adjustment	Percentile 0-100
Ambition	Percentile 0-100
Sociability	Percentile 0-100
Interpersonal Sensitivity	Percentile 0-100
Prudence	Percentile 0-100
Inquisitive	Percentile 0-100
Learning Approach	Percentile 0-100
Academic/Dept	0=not in organization, 1=in organization
Honor/Professional	0=not in organization, 1=in organization
Intercultural	0=not in organization, 1=in organization
Media/Publication	0=not in organization, 1=in organization
Govern/Program	0=not in organization, 1=in organization
Sports/Recreation	0=not in organization, 1=in organization
Religious	0=not in organization, 1=in organization
ResHall	0=not in organization, 1=in organization
Service	0=not in organization, 1=in organization
Social/Special Interest	0=not in organization, 1=in organization
Design Teams	0=not in organization, 1=in organization
Greek	0=not in organization, 1=in organization
Number of Orgs	Integer
Leadership Role	0=no leadership roles, 1= held a leadership role
Number of Leader Roles	Integer
Executive	0=no executive position, 1=held an executive position
President	0=not president, 1=president
Vice President	0=not vice president, 1=vice president
Treasurer	0=not treasurer, 1=treasurer
Secretary	0=not secretary, 1=secretary

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