AJZEN'S THEORY OF PLANNED BEHAVIOR:

ASSESSING MENTORSHIP IN STUDENT RETENTION

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ABSTRACT

Most analyses examining student success rates for passing college courses and completing a degree program emphasize traditional factors such as High School Class Rank and standardized test scores. No theory of planned behavior for degree attainment has been proposed and tested. The Theory of Planned Behavior (1991) was constructed to describe and predict the relative strength of psycho-social factors contributing to achieving planned goals. It asserts that attitudes, subjective norms, perceived behavioral control, and intentions lead to the completion of a behavior or goal. The TPB is highly universal and appropriate to assess college degree attainment behaviors. Mentorship has been shown to be an influential factor of a person's persistence in activities. As such, mentorship was also assessed in combination with TPB. Three-hundred Thirty-Nine ($N =$ 339), primarily freshmen, participated on this online study for Introduction to Psychology course credit. Study 1 of the survey assessed participant's inward assessment of behaviors in college per Ajzen's Theory. Study 2 aimed to assess a participant's outward judgment of others based on the same framework. Results from study 1 showed that Ajzen's Theory was predictive of college degree attainment and mentorship serves as a catalyst for traditional Ajzen factors. Study 2 showed that participants' perceptions differed based on a hypothetical student's observed level of Ajzen factors and mentorship. Ajzen's TPB seems to be appropriate for predicting college degree attainment behaviors. While mentorship serves as a catalyst for these behaviors, it is not a required aspect for successful completion of a college degree.

I. Introduction

The decision to attend college is a paramount yet stressful task that many high school graduates and other young adults face each year. Where students decide to attend school and what they decide to get a degree in are decisions that shouldn't be taken lightly. One of the major concerns of college and university officials is the university's retention rate, which is used as a way of measuring the success of the university. There are many factors that affect a student during his or her journey through college that can ultimately determine whether he or she will successfully complete a college degree program. The question becomes: how does a university support and foster student academic success? Students are indeed the main stakeholders of the university. Thus, the main focus and goal of a university should be to support the interests of the student population. This is a great challenge considering the increase diversification of entering college students. There are many student support programs and resources that are offered, but many of them are aimed at different areas of students' lives.

To adequately support students in their endeavor for a college degree, there needs to be an understanding of what internal and external factors affects a student's goal of obtaining a college degree. Many times, a student may actively seek out advice from professors, staff, or other peers on academic, career, and other issues that he or she may be facing. This encounter creates a mentorship relationship between the student seeking support, the mentee, and the person he or she is seeking support from, the mentor. This relationship can take on two possible forms: formal and informal. A formal mentor relationship is one where the mentee seeks out an advisor in a formal setting (e.g.

academic advising offices or career service offices). An informal mentor relationship stems from every day conversations that do not occur in a formal setting.

There has not been a theory of planned behavior for degree attainment proposed and tested for college degree attainment. Ajzen's Theory of Planned Behavior (1991) seems appropriate as a framework to explore this topic. The theory is also flexible, allowing for additional context-appropriate components to be integrated. Finding a suitable mentor may be part of a student's successful degree planning. This study seeks to explore student degree attainment as a planned behavior/goal through the lens of Ajzen's Theory of Planned Behavior with an added mentorship component.

Student Retention, Theories of Student Development, and Mentorship
Student Retention

A college education has become almost a necessity to make a way of life within today's society. Thus, there is an increase of people that are attempting to complete a college degree. According to the National Center for Education Statistics (2015), for the 2014 academic school year, over 20 million students enrolled in a postsecondary institution, with a projected increase of 15% by 2023 (Hussar & Bailey, 2016). However, not all of these students will successfully make it through a college degree program. This is disadvantageous for the student, for the university, and the community. For the student, he or she will lose out on a great amount of money due to paying tuition and other fees, as well as his or her own personal time. For the university or college, a commonly reported statistic related to the reputation of the institution is retention rates. If the university is unable to maintain student retention rates, the reputation of the university will drop. In addition, university resources will be depleted. Depending on the type of

institution (e.g. private and public) and state legislation, some portion of taxes collected from citizens are given to universities for financial support. If a student drops out of a university, the money from taxpayers has been wasted. This is a major concern of higher education and faculty and staff. Many universities implement different programs to help students achieve their college goals. Many of these programs are centered around theories of student development (See Theories of Student Development). These programs may have different ways of assessing their effectiveness, but the results may not be comparable across programs. There is currently no standardized means of assessment that can be used across programs to evaluate student retention. The proposed study seeks to solve this problem and attempts to provide a framework that can be used for assessment.

Theories of Student Development

The Student Development Theory is the reigning guide among higher education administrators and researchers for discussing student development and success. Student Development Theory is a collection of many different models compiled together for looking at issues through different lenses that affect students and the university. Within the collection of theories, there are two primary domains: psychosocial theories and cognitive-structural theories.

Psychosocial theories are primarily concerned with the development of students and important issues that they may face. Some of these issues may include how a person defines his or her self as well as relationships with others that are important to them. Some theories that are commonly used among higher education officials include, but are not limited to: Chickering's Theory of Identity Development (Chickering & Reisser, 1993), Josselson's Theory of Identity Development in Women (Josselson, 1973), The

Cross Model of Psychological Nigrescence (Cross, 1978), Cass's Model of Homosexual Identity Formation (Cass, 1979), and Schlossberg's Transition Theory (Scholossberg, 2012). Having different models for determining where a student may or may not be in his or her development allows for open dialogue about how to solve and tackle issues while being able to set and complete goals.

Cognitive-structural theories seek to describe a student's intellectual development throughout the college years, rooted in the work of Piaget (1952). Some theories that are prevalent include, but are not limited to: Perry's Theory of Intellectual and Ethical Development (Perry, 1968), Baxter Magolda's Model for Epistemological Reflection (Baxter Magolda, 1999), Kohlberg's Theory of Moral Development (Kohlberg, 1984), and Gilligan's Theory of Women's Moral Development (Gilligan, 1993). Students experience development in several different ways, and there usually isn't one way of looking at the progress. Cognitive-structural theories place students within different stages or levels of the theory, allowing for the student to achieve a higher phase of development.

Overall, the Student Development Theory, or the collection of theories, provides a holistic approach for describing and discussing student development. However, the usage of these theories places emphasis on observations of a student as well as the student's own introspection of his or her college experience. It is difficult to objectively determine where a student falls on these different stages of development in both domains. Those who utilize this theory come to subjective conclusions based off of their own perceptions and may be influenced by certain biases. An objective measure, or measures, is needed to determine specific explanations of college degree success. Then, specific causes can be

isolated and used to develop programs to support students and successfully retain them. While the theories included in the Student Development Theory cannot offer empirically-derived data, they can offer a general foundation for discussion of how to assist students.

Mentorship

Mentors may have the power to alter the course of a student's college degree path. Students can discuss any problems they are having in college and seek advice on the best course of action. This support that the mentor offers can then save a college student from dropping out, so long as that the support is beneficial and the student carries out the plan. The role of the mentor may also play into the different theories of student development. For example, in Chickering's Theory of Identity Development (1993), Chickering & Reisser identify seven vectors of development: (1) developing competence, (2) managing emotions, (3) moving through autonomy toward interdependence, (4) developing mature interpersonal relationships, (5) establishing identity, (6) developing purpose, and (7) developing integrity. A mentor can help a student work his or her way through all of these different vectors. If a student needs help establishing a clear path to his or her degree goals, a mentor would help develop and explore the sixth vector: developing purpose.

Those who serve as a mentor or advisor can be those who are in a formal role, such as those who hold a mentor position and have a mentee assigned to them, or an informal role, where a mentee or mentor initiates the mentorship outside of business. A mentor can directly influence a student's intentions to attend school and, ultimately, their actual behavior (Long & McGinnis, 2016). His or her actions and opinions ultimately shape the mentee and his or her perception. In the case of deciding to obtain a college

degree, the mentor's encouragement may be powerful enough to inspire a mentee to either pursue the goal or to continually persist with it. While meeting with a mentor for an extended period of time, students can enhance their own academic behaviors. For example, after joining a mentoring program, many Latino students improved on two of three college adjustment measures: college self-efficacy and academic goal definition (Santos & Reigadas, 2000). The role of a mentor may not be a direct influence on a student's degree attainment but may influence factors related to academic success.

While there are plenty of resources that discuss the role of a mentor and the goals surrounding the mentor/mentee relationship, Kaye and Jacobson (1996) offer specific goals and roles that a mentor should exhibit:

- A mentor's role is to promote learning which includes assisting in the development of a person's capabilities by instructing, modeling, and advising.
- Mentors should share, reflect, and analyze their success and failures.
- Mentors should share their own real life stories to provide insights with the protégé as well as develop rapport.
- Mentorship is an ongoing relationship and synthesizes ongoing events, experiences, and observations.
- Responsibility for learning is a shared value between the mentor and protégé.

The mentorship relationship may be initiated actively or passively by the mentee. For example, a student may seek to develop a relationship with a faculty member, an active action, or may be assigned a mentor by the requirements of a particular degree plan, a passive type of mentorship relationship. While mentorship is a type of relationship that is in many different areas of society, such as school, business, or personal matters, it offers a great deal of support to the person who is seeking it. Since college students face many challenges when they start their college experience, having a mentor relationship with someone may greatly impact the students in a positive way. It is worthwhile to

explore this relationship and whether it is strong enough to impact student's college experience.

Predictors of Academic Success

Traditionally, postsecondary institutions look at certain criteria for admitting students. Some of these factors are, but not limited to: High School class rank, High School GPA, standardized test scores, essays, recommendation letters, extracurricular activities, first generation status, and much more. Academic factors (e.g. class rank) are believed to serve as predictors of academic success in college. However, these traditional admissions factors may not serve as the best predictors of academic success. Moreover, predictors for Latino/a students differ by gender, further complicating the issue. According to Zarate and Gallimore (2005), Latino/a students may succeed when other factors are present. For Latinos, successful predictors of academic success were academic achievement as measured by standardized tests, parental factors, and language proficiency. As for Latinas, successful predictors included teacher-rated classroom performance and the pursuit of college counseling in high school.

DeFreitas and Bravo (2012) suggested that students having a strong relationship with faculty may be key to student success. They found that faculty involvement and academic achievement were related but mediated by self-efficacy, suggesting again that academic success may be difficult to predict without an interactive model. However, Pascarella (1980) observed positive associations between the quality of student-faculty informal contact and students' educational aspirations, attitudes toward college, academic achievement, intellectual and personal development, and institutional persistence when student pre-enrollment traits were held constant.

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For the present study, several academic behaviors were identified as successful predictors of academic success. The first of these academic behaviors includes Academic Self Efficacy (Bandura, 1986; Torres & Solberg, 2001). Academic Self Efficacy refers to an individual's belief that he or she can complete and achieve his or her academic goals. Torres and Solberg (2001) found that students who scored high on college self-efficacy had stronger persistence intentions as well as better health. Setting academic goals that are realistic to a student's expectations can help guide him or her to success by providing a path for accomplishment. These successes foster a positive self-image that can serve as encouragement for students. In addition, having high self-efficacy leads to feelings of calmness, peacefulness, and serenity from having control over the situation. Low self-efficacy can make tasks more difficult due to having a perception of low ability. This perception can lead to stress and anxiety, traits that many college students already possess. Academic performance concerns among students have been shown to lead to depression, anxiety, and stress (Beiter et al., 2015).

Social support has also been shown to be an important factor for students (Mahaffy & Pantajoa, 2012; Baker & Robnett, 2016). This factor stems from a need for unity. When students move away from home, communication among family and friends becomes difficult and, sometimes almost impossible. The need for a strong community is especially prevalent when the student is a part of a minority group. When students find a group or organization that unites them with other students, they are able to support each other. Universities may help unite minorities through university programming and event planning.

Extracurricular involvement has also been shown as a predictor to academic success (Davalos, Chavez, and Guardiola, 1999; Morrel & Morrel, 1986). Extracurricular involvement includes many different activities that students may participate in outside of class, many of which are affiliated with the university. Some examples may include band, student government, Greek life, or organizations associated with the student's future career interests. Davalos, Chavez, and Guardiola (1999) found that those involved with extracurricular activities are more likely to stay in school, regardless of gender or ethnicity. They speculate that students who are involved in these activities may have a greater positive experience in school and, thus, want to stay in school. However, there is a limit of how much involvement a student may have with an organization before he or she begins to suffer academically.

As mentioned before, previous academic experiences prior to college enrollment are seen as a primary factor of predicting college success. Crisp, Taggart, and Nora (2015) conducted an up-to-date summary of factors leading to undergraduate success. Precollege academic experiences were found to be one influence of academic success in college. Even though these prior academic experiences are heavily emphasized for college program admittance, this factor is indeed an important one that should not be ignored. ACT composite scores and high school grade point average (GPA) were also found to be strong predictors of college degree persistence and success. (Westrick, Robbins, Radunzel, & Schmidt, 2015).

Academic self-efficacy, social support, extracurricular involvement, and academic practices prior to college enrollment are all behaviors that lead to college degree attainment. These academic factors will be used to structure the framework of the present

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study. An assumption will be made that if a participant scores high on these behaviors, then he or she is likely to finish college and obtain a college degree.

All of the studies that have been mentioned in this section present student college experiences that predict college success and degree completion. Assuming that the student participates and does well in these different areas, then the student should complete his or her degree which improves overall retention rates of the university. These behaviors are not what guides higher education administrators, but rather the Student Development Theory. These behaviors offer a way to empirically test and discuss student outcomes. These behaviors also help define goals that mentors and other faculty/staff may use to support students.

Most prevailing conclusions about research on student success are based upon correlational studies and qualitative research. The problem with correlational studies is that causation cannot be inferred based on the results; the results only show that there is some type of relationship. Qualitative research allows researchers to analyze the narratives of participants, but often it is hard to code for themes within the narratives, and is thus hard to draw specific conclusions. A better empirical and theoretical framework, such as Ajzen's Theory of Planned Behavior, is needed to draw concrete conclusions for degree attainment.

Ajzen's Theory of Planned Behavior

Ajzen's Theory of Planned Behavior has been referenced and applied to many different disciplines, especially in health science. The theory was constructed to help predict a person's behaviors and goals through a four-factor model. According to the theory, behaviors and goals can be predicted by acknowledging attitudes toward or about

the behavior/goal, subjective and social norms, perceived behavioral control, and intent to complete the behavior or goal (See Figure 1).
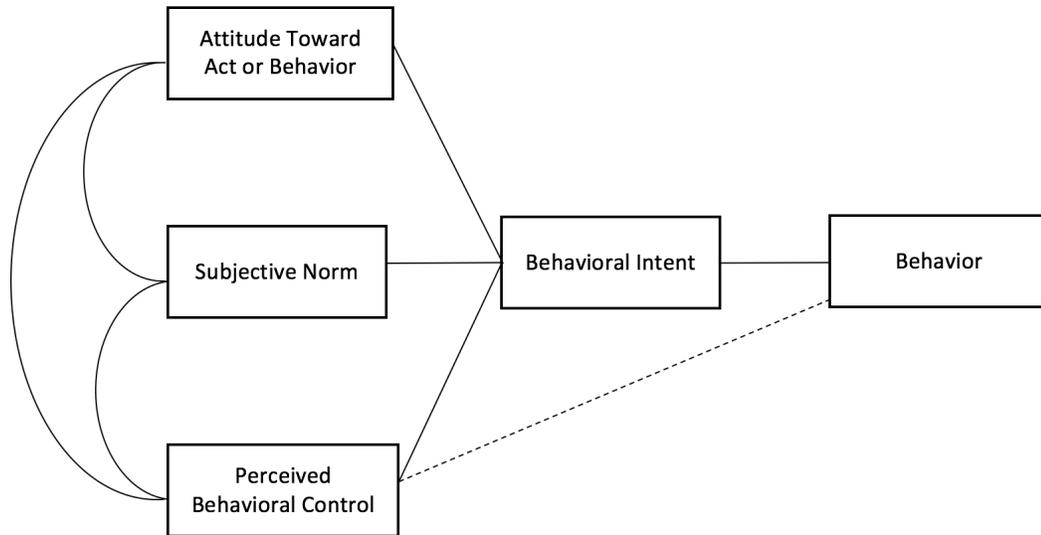
Figure 1. Ajzen's Theory of Planned Behavior (1991)

Attitudes toward a behavior are an individual's evaluation of his or her performance of the behavior, whether it is negative or positive. A Subjective Norm refers to the perception of the behavior that may be influenced by important others (e.g. friends, parents, teachers, etc.). Perceived behavior control is an individual's subjective perception of whether the behavior is easy or difficult to perform. Intention is an individual's perception of whether or not if he or she is ready to perform the given task or behavior and is influenced by the attitude toward the behavior, subject norms, and an individual's perceived behavior control. While all of these factors have a direct influence on a behavior, they also have an influence on each other.

The Theory of Planned Behavior has been applied across many different disciplines and many different areas of study, proving that it is a theory that can be

applied universally. The original four-factor model contains elements that are prevalent to students at a college or university and their decision to complete a college degree. Among students, there are a wide range of attitudes towards different issues and beliefs. Many campuses are diverse and have students from different states, countries, ethnicities, religions, and cultural backgrounds. It would be very difficult to find a group of students with the exact same attitudes and beliefs. Friends and family are also important to students. While a student may or may not completely get along with certain friends or family members, these other individuals make up the student's social network and influence his or her social/subjective norms. Students may also turn to their friends and/or family for important decisions or advice while away from home. Throughout a semester, a student may struggle with the belief of whether he or she can succeed or whether he or she has control over what is happening. This all affects the student's perceived behavioral control. If the student in question has a low overall perceived behavioral control, this may lead to the student to a self-fulfilling prophecy of not being able to complete the tasks assigned to him or her. Moreover, these aspects also affect a student's behavioral intent. A student's intent is the driving factor of the actions that the he or she exhibits and carries out, or the behavior.

In this light, Ajzen's Theory of Planned Behavior appears to be well-suited to evaluate the behavior of attending college to obtain a college degree. It has been used in other areas of higher education, such as evaluating a student's choice to attend a study abroad program (Presley, Damron-Martinez, & Zhang, 2010). The four-factor model plays into a college student's lifestyle and issues that are presented daily. Ajzen's Theory will be the framework for the present study. Mentorship will be an added component and

incorporate with attitudes, subjective norms, and perceived behavioral control (see Figure 2). It has been placed among the original factors because of its potential to influence behavioral intent. A mentor may be able to influence the intentions of a student, which then leads to the change of behavior. This study will evaluate mentorship's placement within the model.
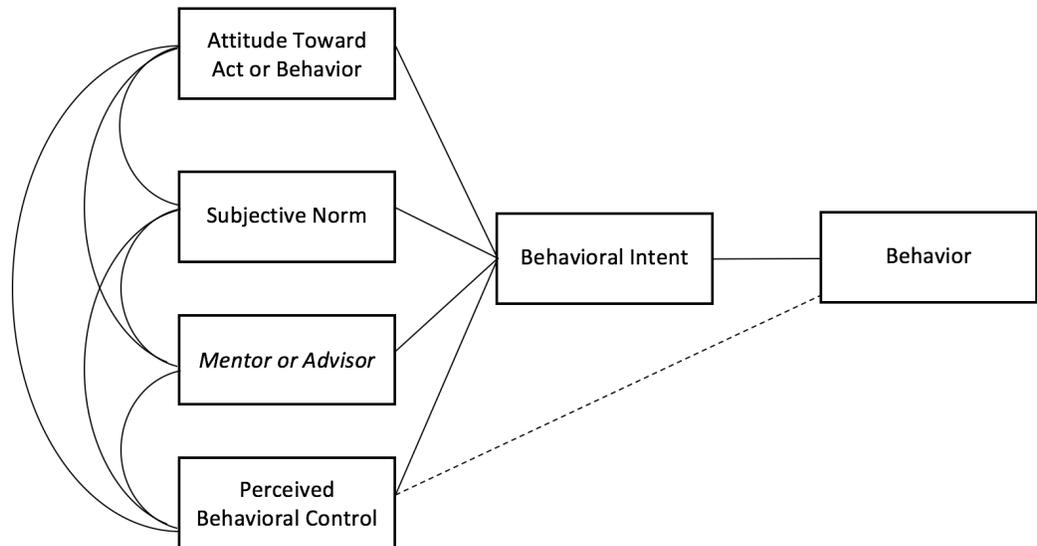
Figure 2. Adapted model of Ajzen's Theory of Planned Behavior with added mentorship component (1991)

Hypotheses

It is hypothesized that TPB serves as a model for deciding to attend college and obtaining a college degree. Assuming the TPB serves as a reliable model, mentorship should serve as an influential construct when added to the Ajzen model and will predict earning a college degree. Mentorship will be placed among other Ajzen factors because a mentor may influence a person's intentions leading to the behavior. In other words, a mentor may affect how a person plans to act or how he or she should act. Study 2 will assess a student's perceptions of a hypothetical student. These perceptions are predicted

to be higher if the hypothetical student is believed to score high on Ajzen factors and be in constant contact with a mentor. Study 2 serves to establish convergent validity by comparing self-reported data in study 1 with projective data in study 2. Since data from the two studies should be near identical, the responses on the two studies should be similar.

II. Method

Participants

The Texas State University IRB exempted this study from review (EXP2016011). Participants were recruited from Introduction to Psychology classes and were informed about the study before participation. A total of 339 students participated in the study. Of the participants the majority, 79.3%, were identified as females ($N = 260$) and were primarily classified freshmen ($N = 211$). Approximately 99% of participants fell within the age range of 18 to 24, where 23 participants did not identify their age. Most participants ($N = 283$) at least somewhat agreed that mentorship is important for completing college courses. Participants were almost equally split between having a college mentor ($N = 135$) and not having a college mentor ($N = 193$). Of those who reported having a college mentor, only 12.5% at least somewhat agree that they will continue to have a mentor. Of those who reported not having a college mentor, about 20% reported that they intend to find a college mentor.

Materials and Procedure

Participants were recruited through the SONA research participant system and the survey was hosted on Qualtrics, an online software used for creating and measuring

survey responses. Research participation is a requirement for most sections of

Introduction of Psychology at Texas State University. Participants signed up for the

study, completed it, and were awarded credit upon completion for research completion

credit. There were nine different versions of the survey that were randomly assigned to

participants. The survey consisted of three different sections: (1) participant demographic

questions, (2) questions, based on Ajzen factors and mentorship, about the participant,

and (3) questions about a participant's perceptions of another hypothetical student.

Study 1

Section two, or study 1, of the survey was structured around Ajzen's model. The

theory was explained to the participants along with the terms defined (see Appendix A).

Questions were formed based on previous research (see Predictors of Academic Success).

Behaviors drawn from these predictors were assumed to lead to college degree

attainment, the ultimate behavior the model is attempting to measure. Each Ajzen

component (Attitudes, Subjective Norms, Perceived Behavioral Control, Intentions, and

Behaviors) contained eight questions based on the four academic predictors. Having two

questions for each predictor allows for the removal of questions to increase construct

validity if needed. The ten questions about mentorship were formed independently.

Study 2

The third section, or study 2, of the survey aimed at measuring the perceptions of

participants about the importance of the Ajzen factors and mentorship. This study was a

true experimental design; subjects were randomly assigned to conditions, eliminating the

possibility for differences among groups. The purpose of study 2 was to assess participant

perceptions about a hypothetical student. Where study 1 aims to assess a participant's inward assessment of behaviors in college, study 2 aims to assess a participant's outward judgment of others based on the same framework, a sort of projective measure.

The hypothetical student in the scenario was described as a student much like the participant taking the survey. The hypothetical student was not given a gender/sex, age, or any other descriptive description and was referred to as student M.S. to eliminate any assumptions or biases. There were nine different conditions where M.S. differed on Ajzen factors and on mentorship. The factors and mentorship were for M.S. were reported as high, medium, or low. After reading about M.S., the participant answered questions about M.S. and possible outcomes of this student. Figure 3 below shows the experimental design of Study 2.

		Ajzen Factors		
		High	Medium	Low
Mentorship Level	High			
	Medium			
	Low			

Figure 3. Experimental Design of Study 2.

Analytic Procedure

Several correlation tests were run within study 1 of the study to determine inter-question reliability. Any questions that did not significantly correlate with majority of others within each Ajzen section had the potential of being discarded to improve reliability. A series of Cronbach Alpha analyses were also conducted within each Ajzen factor and mentorship questions to determine question reliability. For the purpose of this

study, an alpha score of near .700 and above was considered to be an acceptable reliability.

An independent-samples T-test was conducted to compare the means of Ajzen factor scores and mentorship scores between participants based on mentorship status. A series of linear regressions were performed to assess Ajzen's theory as a predictive model of behaviors. First, the attitudes, subjective norms, and perceived behavioral control factors were regressed with intentions being the outcome, in accordance with the Ajzen model. If attitudes, subjective norms, and perceived behavioral control were predictive of intentions, then the intention score was regressed with behavior. This analysis was repeated to include mentorship.

A One-Way Analysis of Variance (ANOVA) was conducted on study 2 of the survey to determine whether mean scores of questions differed between conditions. Three outcome measures were evaluated: the main effect of level of Ajzen factors, the main effect of level of mentorship, and if there was an interaction between Ajzen factors and mentorship. A LSD post-hoc analysis was also conducted to analyze differences between survey conditions.

III. Results

One-tailed Pearson correlations were conducted on each Ajzen factor and mentorship. Items within each respective construct were well correlated with each other suggesting that majority of the questions were related to each other. In addition, the summed scores of each construct were also correlated with each other (see Table 1).

Table 1

Intention (1), Attitude (2), Subjective Norm (3), Perceived Behavioral Control (4), Mentorship (5), and Behavior Scores (6): Correlation and Descriptive Statistics

Variables	1	2	3	4	5	6
1. Intentions	-					
2. Attitudes	.662**	-				
3. Subjective Norms	.573**	.546**	-			
4. PBC	.491**	.456**	.400**	-		
5. Mentorship	.657**	.503**	.530**	.196**	-	
6. Behavior	.332**	.412**	.394**	.362**	.246**	-
M	45.5245	46.5846	44.4085	49.5441	49.6311	41.5866
SD	5.89845	5.63783	6.51821	5.11383	11.27748	6.94486

*p < .05 ** p <.01

This correlation matrix shows that all Ajzen factors and Mentorship are highly correlated with each other. Reliability of survey items, according to Cronbach alpha analyses, tended to be low but acceptable (see Table 2). Even though the behavior alpha fell below .700, it was close enough to being acceptable.

Table 2

Cronbach Alpha Reliability Scores of Study 1 Items

Construct	M	SD	α
1. Intentions ($N = 8$)	5.690	.735	.725
2. Attitudes ($N = 8$)	5.819	.704	.767
3. Subjective Norms ($N = 8$)	5.551	.813	.776
4. Perceived Behavioral Control ($N = 8$)	6.192	.637	.836
5. Mentorship ($N = 10$)	4.958	1.126	.913
6. Behaviors ($N = 8$)	5.200	.866	.692

An independent-samples T-test showed that there was a significant different of Mentorship mean scores based on mentorship status. Those who reported having a

college mentor scored significantly higher than those who did not on mentorship items, [t (318) = 6.641, p < .01]. There was no other significant difference between means of Ajzen factors based on mentorship status.

A multiple linear regression was calculated to predict intentions based on attitude scores, social norm scores, and perceived behavioral control scores. Intention scores were regressed on attitude scores, subjective norm scores, and perceived behavioral control scores (see Table 3). A second multiple linear regression was calculated to predict intentions based on Ajzen factors and mentorship scores. Intention scores were regressed on Ajzen factor scores and mentorship scores (see Table 4).

Table 3

Summary of Regression Analysis for Variables Predicting Intentions (N = 309)

Variable	Model Without Mentorship Component			Model With Mentorship Component		
	B	$SE\ B$	β	B	$SE\ B$	β
Attitudes	.491	.051	.476**	.495	.053	.479**
Subjective Norms	.191	.042	.209**	.177	.044	.193**
Perceived Behavioral Control	.248	.052	.211**	.250	.053	.212**
Mentorship	-	-	-	.012	.023	.022
R^2		.553			.553	

* p < .05
** p < .01

A linear regression analysis was calculated to determine if mentorship predicts behavior. This analysis was significant [F(1, 323) = 20.044, p < .000] and accounted for 5.6 of the variance in behavior scores (R^2 = .056). To further explore the role of mentorship, regression analyses were conducted to examine if mentorship predicts other Ajzen factors. Mentorship significantly predicted all other Ajzen factors (see Table 5).

Table 4

Summary of Individual Regression Analyses for Predicting Behaviors

Variable	B	SE B	β	R^2
Intentions *(N = 321)*	.706	.053	.596**	.355
Mentorship (*N* = 323)	.149	.033	.242**	.059

* p < .05
** p < .01

Table 5

Summary of Regression Analyses for Mentorship as Predictor Variable

Outcome Variable	B	SE B	β	R2
Attitudes	.199	.026	.393**	.154
Subjective Norms	.210	.030	.359**	.129
PBC	.086	.025	.190**	.036
Intentions	.153	.028	.289**	.084

* p < .05
** p < .01

For study 2, a One-Way ANOVA was conducted to compare means across survey conditions on survey questions. A significant effect of belief that M.S. will complete a college degree program was significant, $[F(9, 335) = 61.314, p < .000]$. Participants seemed to believe that hypothetical M.S. would complete a college degree dependent on Ajzen factor scores and mentorship (see Table 6).

Table 6

Summary of Analysis of Variance for Study 2

Question	N	F	p
1. M.S. will earn a college degree	335	61.314	.000
2. A mentor is important to M.S.	335	39.265	.000
3. A mentor will improve M.S.'s activities related to M.S.'s academic goals	337	4.398	.000
4. A mentor is important for M.S. to complete required courses	337	6.236	.000
5. A mentor is important for M.S. to attain a greater sense of achievement	335	6.126	.000
6. A mentor may enhance what M.S. would like to do after graduation	338	3.594	.001
7. Likelihood that M.S. wants a mentor	338	27.778	.000

A factorial ANOVA was performed for the question about whether or not M.S. will earn a college degree. The two factors were the level of Ajzen factors and level of mentorship. There was a significant main effect of Ajzen factors [$F(2, 327) = 61.314$, $p < .01$] such that when the hypothetical student scored high on Ajzen factors, participants were more likely to believe that M.S. would complete a college degree program. There was no main effect of mentorship status [$F(2, 327) = 2.895$, $p > .05$] on the perception. Based on Tukey's HSD Post-Hoc test, perceptions were significantly lower when the level of Ajzen factors were lower. There was a significant interaction between Ajzen factors and Mentorship level, [$F(4, 327) = 2.774$, $p < .05$]. When Ajzen factors were low, a lower level of mentorship predicted a higher perception of M.S. completing a college degree. When Ajzen factors were medium, a high level of mentorship predicted a higher perception. When Ajzen factors were high, a high level of mentorship (see Table 7 for specific mean differences).

Table 7

Tukey HSD Post-Hoc Analysis Mean Differences of Likelihood M.S. Will Complete a Degree

	Low Ajzen	Med. Ajzen	High Ajzen
Low Mentorship	3.553	4.921	6.237
Med. Mentorship	3.218	4.944	6.405
High Mentorship	3.162	5.595	6.789

IV. Discussion and Conclusion

The correlation matrices showed that majority of questions did correlate with each other within the Ajzen model constructs (See Appendix B). The high amount of significant correlations among survey items within each Ajzen factor shows that the questions being asked were related to each other. Thus, there appeared to be a high internal reliability within the survey. Among the mentorship questions, the question "I have control over whether or not I have a college mentor" was only correlated with three of the nine other questions within the mentorship set. It may be that some participants have a mentor because they looked for one, where some may have been assigned one based on their program or classification.

Mentorship appears to be a unique factor. Participants' self-report on current mentorship status was related to how they scored on study 1 survey items. Results showed that having a mentor did not predict students' responses to the five Ajzen factors (attitudes, subjective norms, perceived behavioral control, intentions). However, a

participant's mentorship status did predict his or her responses on questions about mentorship.

The linear regression was the primary test of the hypotheses. A participant's attitudes, subjective norms, and perceived behavioral control did significantly predict intention scores. Intention scores also significantly predicted behavior scores. However, when mentorship was added to the model, mentorship did not contribute and predict to intention scores. A series of follow-up analyses were conducted to further look if mentorship which did significantly predict all Ajzen factors and behavior. Thus, the Ajzen model with mentorship may indeed be different than originally proposed (see Figure 3.). Mentorship seems to act as a catalyst for all Ajzen factors and the ending behaviors. A student may exhibit and score high on all Ajzen factors with or without mentorship, but the presence of a mentor accelerates and further supports the students who seek out the relationship. Thus, having a mentor is not an absolute requirement for the success of college degree attainment but is highly beneficial to those who do seek one out.
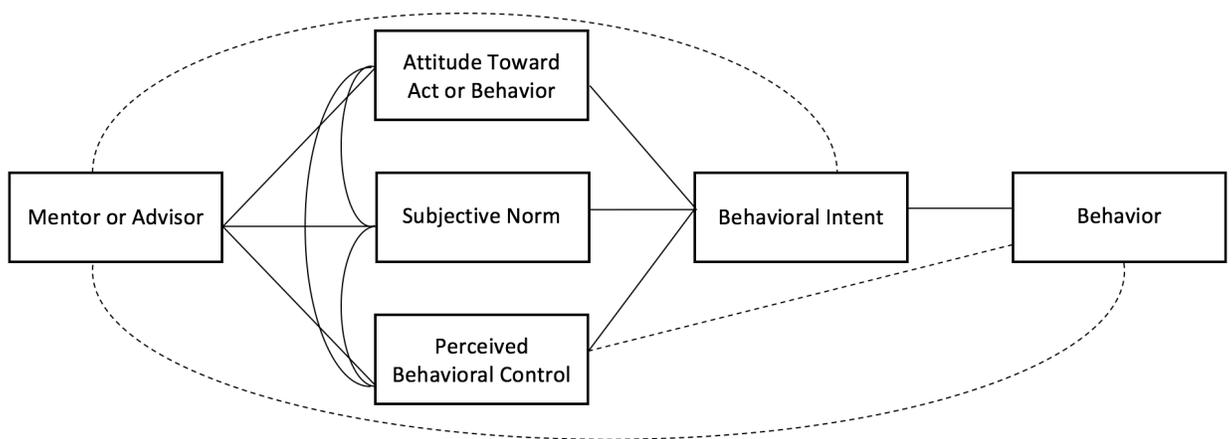

Figure 4. Ajzen's Model with Mentorship After Analyses

Study 2 aimed to evaluate the participants' perceptions about another student depending on how that hypothetical student scored on Ajzen's factors and mentorship. It was hypothesized that participant perceptions would differ based on how a hypothetical student scored on Ajzen factors and mentorship. A factorial ANOVA was conducted on the likelihood that "M.S. would complete a college degree" with Ajzen factors and mentorship treated as two separate independent variables. There was a significant main effect on Ajzen factors and an interaction between Ajzen factors and mentorship. This supports the hypothesis that a person's perceptions will differ based on how M.S. scores on Ajzen factors and mentorship. Specifically, when Ajzen factors are manipulated a person's will perceptions change. The interaction between variables suggests that the effect of one variable depends on the condition of the other. According to the Post-Hoc analysis, it seems that the presence of a mentor heightens a participant's perceptions of the hypothetical student only when Ajzen factors are medium or high. When Ajzen factors are low, a high mentorship level decreases perceptions. The lack of a main effect of mentorship suggests that mentorship alone cannot directly influence a participant's perceptions. It may be that mentorship by itself is not a powerful enough force to directly influence a student.

Conclusion

It appears that mentorship is not necessary for college degree attainment, but is a catalyst for success. Study 1 showed that mentorship only predicts behaviors and is not integrated with the Ajzen model. A similar result was found in study 2. The main effect of Ajzen factors suggests that the factors are perceived as critical for success. Dissimilar to the results of study 1, study 2 suggests that level of mentorship alone is not predictive

of college degree success, according to participant perceptions. However, among perceptions, mentorship seems to be a catalyst for degree attainment as suggested by the interaction among Ajzen factors and mentorship.

Limitations of Study

This study was designed to be carried and completed within a relatively short period of time, in this case a semester. However, the only way to fully assess whether or not Ajzen's Theory of Planned Behavior is applicable to obtaining a college degree is to conduct the study longitudinally. While a participant may score high in all areas of the survey and intend to complete his or her degree program, he or she may not succeed.

The reliability of survey items on certain parts of the survey did score on the lower end of the reliability analysis. There are many reasons that this may have happened. One way of combatting this issue in future research would be to closely analyze survey items and rewrite any questions that may be confusing or unclear. A pilot study should be conducted in future research where a few participants may give feedback on any questions that they did not understand or found unclear.

In the survey, a mentorship was defined as "a mutual relationship between a mentor and a mentee where the mentor offers advice and support to the mentee." This definition was defined specifically for this study and was not taken from another source. A participant's assessment of the definition was not collected. In future research, if mentorship is defined, a question should be asked assess whether or not the participant agrees or disagrees with the statement. Another possibility may include having the participant define mentorship himself or herself and then analyzing any common themes among responses. While information was collected on the type of mentor participants had

(student, faculty/staff, family, etc.), it is uncertain whether the mentor was passively assigned to them or if they actively sought a mentor. This could be a confound variable that affects a participant's attitudes about his/her mentor.

There were multiple problems with the sample and method of data collection. The present study is not generalizable or a representative sample because the demographics of participants were not proportional. For example, approximately 80% of participants were females. Unfortunately, due to the survey administration method, there was no way to control for this. Future research should attempt to recruit participants in such a way that the sample is representative of the student population.

There was no validity check built into the survey to assess whether or not participants answered questions honestly. Due to the nature of this being a survey study, there was no way to see if a participant actually read a question. In future research, a validity check should be built in to the survey.

Future Directions

Despite these and other limitations, this study did yield important findings about the nature of mentorship and student retention. Ajzen's Theory of Planned Behavior can be used in several different ways to assess retention and provides a framework that can be easily manipulated to assess retention from different angles. It can be used by different disciplines and programs to assess their own efforts toward student retention, and use of the theory should be encouraged. This theory provides a simplistic way of assessing mentorship and retention that can be compared and discussed with other efforts.

Future research may look at specific aspects of this study. For example, a study could be conducted to explore the specific act of finding a college mentor using Ajzen's

TPB as a framework. While the present study did not control for mentorship status, many participants did report having a mentor of some sort. In addition, future research could explore active vs. passive mentorship in this context and how this type of mentorship is represented among Ajzen factors.

While there was an assumption that if a participant scored high on behaviors outlined in previous research that they would graduate and earn a college degree, this study did not offer a way to assess whether or not a participant actually the degree or will earn the degree. A follow-up study may be needed to assess whether the assumption made was correct and how many participants completed their degree program.

The present study looked at college degree completion and student retention with a wide scope of the whole college experience. On average, it takes a student four years to complete a degree program. However, the average time to complete different programs is starting to take longer. There are many forces and events that may impact a student over this time. Future research may look at retention between academic years of college rather than over the whole journey. The first year of college experience often sets the tone for the student's future. Research should look at retention between the first year and second year of college.

The present study looked at a semi-diverse sample of students that could represent the whole population of students at Texas State University. Data was not collected on a student's current degree program. Future research may limit the scope to retention within a specific degree program. This would allow specific academic colleges and departments within the university to develop specific programs based around their program to aid students and improve retention rates.

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APPENDIX A.

SECTION I.
Demographic Variables:
- Age
- Gender
  - Male
  - Female
  - Other
  - Prefer not to answer
- Ethnicity
  - Hispanic
  - White-Non Hispanic,
  - Asian
  - Black
  - Native American
  - Pacific Islander
  - Mixed Ethnicity
- Average Hours per day spent (adding to 24)
  - Working/Employment
  - Attending Class
  - Studying or completing assignments outside of class
  - Exercise
  - Commuting
  - Using Social Media
  - Socializing in-person with others
  - Sleeping
  - Other
  - Total (Should add to 24)
- Number of semester hours completed
  - Less than 30
  - 30-60
  - 60-90
  - 90-120
  - More than 120
- Anticipated graduation in:
  - One year
  - Two years
  - Three Years
  - Four Years
  - More than four years
  - Unknown
- Did you attend another university before coming to Texas State?
  - Yes – Another 4 Year Institution
  - Yes – A 2-year institution (i.e. community college)
  - No

- Realistically, based on your actual current GPA, estimate the grade point average you anticipate having upon completing of all the required credit hours needed for graduation
- Mentorship is a mutual relationship between a mentor and a mentee where the mentor offers advice and support to the mentee. How much do you agree from (low) 1 to (high)10 that having a mentor may be important for you to complete courses for your college degree?

1……….2……….3……….4………5……….6……….7……….8……….9……….10
- Do you currently have a college mentor?
  - Yes
  - No
    - I already have a plan to find a college mentor in the near future.
      - Yes
      - No

SECTION II.
This section has statements for you to evaluate. Everyone would agree that obtaining a college degree is a planned behavior. A psychologist named Ajzen created a general theory of planned behaviors. Ajzen proposed that attaining a planned behavioral goal generally involves a complex mixture of someone's attitudes, intentions, social support systems (social norms) and the person's sense that they have the ability and skills needed to achieve mastery of events and situations related to the planned goal. The items in this section pertain to your own ideas about the importance of Ajzen's factors and one other, mentorship, for someone planning to achieve a college degree.
These factors are defined as:

Attitudes are an individual's likes, dislikes, beliefs, and opinions towards a given behavior.
Social norms represent a person's perception of important others' (i.e. family, friends) beliefs that he or she should or should not perform the behavior.
Intentions represent an individual's readiness to perform a given behavior.
Perceived Behavioral Control refers to an individual's perceived ease or difficulty of performing and completing a behavior.
Mentorship is a mutual relationship between a mentor and a mentee where the mentor offers advice and support to the mentee.

In the following section evaluate responses showing how much you agree from (low) 1 to (high)
1……….2……….3……….4………5……….6……….7……….8……….9……….10

Intention.
1. I intend to set and achieve my academic goals.
2. I intend to seek support related to my academic or career interests from friends and/or family while I am obtaining my degree.

3. I actively seek out and participate in extracurricular activities related to my academic or career interests (e.g. clubs, organizations, intramural sports, etc.).
4. I intend on using the same effective academic practices (e.g. study habits) in college that I used in high school.
5. I plan to decide upon academic goals that I can successfully achieve.
6. While taking classes, I plan to seek support and advice from my friends and/or family related to my academic or career interests.
7. If there is an organization related to my career or academic interests, I would consider joining it.
8. If a study habit from high school worked to help me succeed, I use it with my college work.

Attitudes
1. Setting academic goals is the key to achieving academic success.
2. Having a social support system (i.e. friends, family) related to my academic or career interests is important to obtain a college degree.
3. I believe that participating in extracurricular activities related to my academic or career interests will benefit me as a student.
4. I believe that effective academic practices that I used in high school will benefit my college academic experience.
5. It is necessary to set goals to do well academically.
6. While earing my degree, it is important to have a strong social support system.
7. There are benefits to joining a club or organization that is related to my academic or career interest.
8. Using academic practices that I used in high school are important for my college academic success.

Social Norms
1. Most people that are important to me think that I should set and achieve academic goals.
2. Most people that are important to me think that I should have a social network that I can rely on while obtaining my college degree.
3. Most people that are important to me think that I should participate in extracurricular activities related to my academic or career interests.
4. Most people that are important to me believe that my high school academic experience will predict how I do in college.
5. My friends, family, and others that are important to me think it is wise that I set and achieve academic goals.
6. My friends, family, and others that are important to me think that I should utilize their support while I'm earning my college degree.
7. My friends, family, and others that are important to me urge me to join extracurricular activities related to my academic or career interests.
8. My friends, family, and others that are important to me think that how I did in high school will predict how I do in college.

Perceived Behavioral Control
1. I have control over whether or not I can set and complete my academic goals.

2. Having a social network supporting me to earn a college degree is something over which I can control.
3. I have control over whether or not I participate in extracurricular activities related to my academic or career interests.
4. I have control over how to use effective study habits related to my academic or career interests.
5. My academic goals can be anything I want them to be.
6. I have the ability to choose a social network that supports my academic and career interests.
7. I can participate in extracurricular activities that are related to my academic and career interests.
8. I can choose to use my old study habits from high school or adopt different ones.

Behavior
1. I set and achieve my academic goals.
2. I utilize a social support system.
3. I am currently involved in at least one extracurricular activity related to my academic or career interests.
4. I use the same effective academic practices in college that I used in high school.
5. I utilize academic goals.
6. I keep in contact with friends, family, and other people who are important to me and discuss my academic and career interests.
7. I belong to at least one extracurricular activity that is related to my academic or career interests.
8. I use study habits from high school that work for me.

Mentorship
1. I think that a college mentor is important for me to succeed in college.
2. Most people that I know who form my social norms think it is important to have a college mentor.
3. I have control over whether or not I have a college mentor.
4. I took the time to find a college mentor.
5. Having a mentor is important to me.
6. Having a mentor can improve the quality of my activities related to my academic or career interests and goals.
7. Having a mentor may be important for me to complete the courses required for my college degree.
8. Having a mentor may be important for me to attain a greater sense of quality and achievement in my academic work.
9. Having a mentor may be important for me to enhance what I would like to do after graduation (e.g. job/employment, admission to graduate/professional school, etc.)
10. Rate the likelihood that you agree, "I want a mentor"

SECTION III. A student's attitudes, social norms, intentions, their perceived behavioral control, and mentorship may all play a role in planning for & obtaining a college degree. MS is a college student much like you. MS has taken this same survey you just completed and the average scores for each category were summarized. Here is the summary of MS's scores

	Levels		
	High	Med	Low
Attitudes			
Social Norms			
Intentions			
Perceived Behavioral Control			
Mentorship			

(Row label on left: **Ajzen Factors**)

<A sentence was placed here describing the matrix>

1. Having a mentor is important to MS.
2. Having a mentor can improve the quality of MS's activities related to MS's academic or career interests and goals.
3. Having a mentor may be important for MS to complete the courses required for MS's college degree.
4. Having a mentor may be important for MS to attain a greater sense of quality and achievement in MS's academic work.
5. Having a mentor may be important for MS to enhance what MS would like to do after graduation (e.g. job/employment, admission to graduate/professional school, etc.)
6. Rate the likelihood that you agree, "MS wants a mentor."

Outcome Measure: We are interested in knowing how you think these factors come into play for predicting whether M.S. will earn a college degree. **Based upon MS's scores on these 5 areas, rate the likelihood that M.S. will complete the required courses to graduate from college.**

How much do you agree from (low) 1 to (high) that MS will earn a college degree?
1……….2……….3……….4………5……….6……….7……….8……….9……….1

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NOTE: Questions in table have be shortened to conserve space. Please see Appendix A for full questions. For all tables: *p < .05, **p < .01

Table 8
Correlation and Descriptive Statistics of Intention Items

Variables	1	2	3	4	5	6	7	8
1. Set and achieve academic goals	-							
2. Seek support from friends/family	.376**	-						
3. Participate in extracurriculars	.093*	.239**	-					
4. Use academic practices from H.S.	.054	.109*	.263**	-				
5. Set academic goals I can achieve	.381**	.500**	.210**	.251**	-			
6. Seek support from friends/family about classes I'm taking	.306**	.665**	.178**	.135**	.457**	-		
7. Consider organization/club related to academic or career goals	.238**	.304**	.295**	.196**	.336**	.289**	-	
8. If a study habit worked for me in H.S., I plan to use it in college	.210**	.325**	.275**	.428**	.348**	.249**	.251**	-
M	6.58	6.23	4.96	4.00	6.05	5.81	6.14	5.75
SD	.858	.963	1.552	1.899	.887	1.192	.976	1.376

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Table 9

Correlation and Descriptive Statistics of Attitude Items

Variables	1	2	3	4	5	6	7	8
1. Academic goals or key to success	-							
2. Having a social support system is important for a college degree	.328**	-						
3. Extracurriculars related to my academic/career goals are beneficial	.327**	.207**	-					
4. Academic practices from H.S. will benefit me in college	.283**	.231**	.264**	-				
5. It is necessary to set goals to do well academically	.532**	.309**	.263**	.199**	-			
6. It is important to have a social support system	.293**	.552**	.194**	.225**	.409**	-		
7. It is beneficial to join a club or organization	.407**	.285**	.597**	.339**	.244**	.328**	-	
8. Using academic practices from H.S. are important for my success	.215**	.176**	.189**	.684**	.180**	.203**	.266**	-
M	6.26	6.05	5.89	5.23	6.09	6.19	6.04	4.82
SD	.821	1.130	1.028	1.504	1.001	.931	.900	1.560

Table 10

Correlation and Descriptive Statistics of Social Norm Items

Variables	1	2	3	4	5	6	7	8
1. People important to me think I should set academic goals	-							
2. People important to me think I should have a social support system	.534**	-						
3. People important to me think I should participate in extracurriculars	.372**	.422**	-					
4. People important to me think my H.S. experience is important	.020	.218**	.130**	-				
5. Friends, family, and others think I should set academic goals	.602**	.520**	.390**	.105*	-			
6. Friends family, and others think I should utilize their support	.477**	.623**	.413**	.109*	.570**	-		
7. Friends, family, and others urge me to join extracurriculars	.270**	.402**	.724**	.176**	.249**	.393**	-	
8. Friends, family, and others think H.S. will predict how I do in college	.063	.202**	.153**	.779**	.159**	.245**	.188**	-
M	6.05	5.95	5.61	4.67	6.21	5.99	5.39	4.62
SD	.973	1.065	1.219	1.721	.876	1.092	1.387	1.747

Table 11

Correlation and Descriptive Statistics of Perceived Behavioral Control Items

Variables	1	2	3	4	5	6	7	8
1. I have control over wheher I set and achieve academic goals.	-							
2. Having a supportive social network is something I can control	.439**	-						
3. I have control over whether I participate in extracurriculars	.430**	.340**	-					
4. I have control over how I use effective study habits	.409**	.245**	.604**	-				
5. My academic goals can be anything I want them to be	.393**	.199**	.530**	.510**	-			
6. I can choose a social network	.285**	.394**	.422**	.472**	.372**	-		
7. I can participate in clubs/orgs. related to my academic goals	.322**	.353**	.526**	.497**	.501**	.542**	-	
8. I can choose to use my old study habits from H.S. or new ones	.319**	.236**	.375**	.437**	.328**	.429**	.502**	-
M	6.24	5.55	6.31	6.31	6.34	6.17	6.25	6.35
SD	.969	1.239	.867	.834	.905	.943	.814	.852

Table 12

Correlation and Descriptive Statistics of Behavior Items

Variables	1	2	3	4	5	6	7	8
1. I set and achive my academic goals	-							
2. I utilize a social support system	.461**	-						
3. I am involved with at least one extracurricular activity	.111*	.169**	-					
4. I use same academic practices that I used in H.S.	.107*	.084	.255**	-				
5. I utilize academic goals	.548**	.437**	.237**	.124*	-			
6. I keep in contact with those important to me to discuss school	.295**	.412**	.090*	.043	.268**	-		
7. I belong to at least one club/org. related to my academic interests	.092*	.160**	.824**	.228**	.163**	.085	-	
8. I use study habits from high school that work for me	.164**	.127**	.147**	.676**	.170**	.154**	.112*	-
M	5.98	5.80	4.27	4.38	5.97	6.14	4.20	4.88
SD	.878	1.160	2.170	1.783	.906	1.044	2.083	1.674

Table 13

Correlation and Descriptive Statistics of Behavior Items

Variables	1	2	3	4	5	6	7	8	9	10
1. I think that a college mentor is important for me to succeed	-									
2. Most people I know think it is important to have a college mentor	.652**	-								
3. I have control over whether or not I have a college mentor	.058	.100*	-							
4. I took the time to find a college mentor	.392**	.408**	.188**	-						
5. Having a mentor is important to me	.746**	.589**	.074	.534**	-					
6. Having a mentor can improve the quality of my academic activities	.643**	.498**	.095*	.418**	.740**	-				
7. Having a mentor may be important for completing courses	.662**	.570**	-.011	.427**	.705**	.726**	-			
8. A mentor may be important for a greater sense of achievement	.706**	.556**	.083	.412**	.742**	.765**	.825**	-		
9. A mentor may enhance what I would like to do after graduation	.627**	.477**	.079	.338**	.642**	.661**	.720**	.798**	-	
10. "I want a mentor"	.709**	.529**	.031	.343**	.780**	.677**	.663**	.756**	.734**	-
M	5.15	4.53	5.75	3.42	4.65	5.35	5.06	5.20	5.37	5.18
SD	1.429	1.492	1.374	1.745	1.649	1.261	1.545	1.410	1.39	1.627